

College Curriculum Committee Meeting Agenda
Tuesday, February 6, 2018
2:00 p.m. – 3:30 p.m.
President's Conference Room

Item	Action	Attachment(s)	Presenter
1. Minutes: January 23, 2018	Action	#2/6/18-1	Campbell
2. Report Out from Division Reps	Discussion		All
3. Announcements a. New Course Proposal b. Notification of Proposed Requisites c. ESLL 26 Deactivation d. Update on Curriculum Process Redesign	Information	#2/6/18-2 #2/6/18-3 #2/6/18-4	Campbell
4. New Subject Code: APAV	Information	#2/6/18-5	Campbell
5. Stand Alone Approval Request: ALCB 400A	2nd Read/ Action	#2/6/18-6	Campbell
6. Stand Alone Approval Request: ALCB 400C	2nd Read/ Action	#2/6/18-7	Campbell
7. Stand Alone Approval Request: ALCB 400E	2nd Read/ Action	#2/6/18-8	Campbell
8. Stand Alone Approval Request: JRNL 22A	2nd Read/ Action	#2/6/18-9	Campbell
9. Stand Alone Approval Request: JRNL 22B	2nd Read/ Action	#2/6/18-10	Campbell
10. Stand Alone Approval Request: JRNL 60	2nd Read/ Action	#2/6/18-11	Campbell
11. Stand Alone Approval Request: JRNL 61	2nd Read/ Action	#2/6/18-12	Campbell
12. Stand Alone Approval Request: JRNL 62	2nd Read/ Action	#2/6/18-13	Campbell
13. Stand Alone Approval Request: JRNL 64	2nd Read/ Action	#2/6/18-14	Campbell
14. Stand Alone Approval Request: JRNL 70R series	2nd Read/ Action	#2/6/18-15	Campbell
15. Stand Alone Approval Request: LINC 77	2nd Read/ Action	#2/6/18-16	Campbell
16. Stand Alone Approval Request: LINC 84A	2nd Read/ Action	#2/6/18-17	Campbell
17. Stand Alone Approval Request: LINC 84B	2nd Read/ Action	#2/6/18-18	Campbell
18. Proposed Exception Process for Starting Courses Prior to Catalog Publication	2nd Read/ Action	#2/6/18-19	Campbell
19–32. Stand Alone Approval Requests: APAV 50A, 50B, 50C, 51, 53A, 53B, 54A, 54B, 55, 56, 60, 75A, 75B, 81	1st Read	#2/6/18-20–33	Campbell
33–38. Stand Alone Approval Requests: APCA 100, 101, 102, 104, 105, 106	1st Read	#2/6/18-34–39	Campbell
39. Draft Update to Foothill GE Application	1st Read	#2/6/18-40	Campbell
40. Credit by Exam Process	Discussion		Campbell

41. Good of the Order			Campbell
42. Adjournment			Campbell

Attachments:

- #2/6/18-1 Draft Minutes: January 23, 2018
- #2/6/18-2 New Course Proposal: NCEL 405
- #2/6/18-3 CCC Notification of Proposed Requisites
- #2/6/18-4 ESLL 26 Deactivation Memo
- #2/6/18-5 New Subject Code Proposal: APAV
- #2/6/18-6 Stand Alone Course Approval Request: ALCB 400A
- #2/6/18-7 Stand Alone Course Approval Request: ALCB 400C
- #2/6/18-8 Stand Alone Course Approval Request: ALCB 400E
- #2/6/18-9 Stand Alone Course Approval Request: JRNL 22A
- #2/6/18-10 Stand Alone Course Approval Request: JRNL 22B
- #2/6/18-11 Stand Alone Course Approval Request: JRNL 60
- #2/6/18-12 Stand Alone Course Approval Request: JRNL 61
- #2/6/18-13 Stand Alone Course Approval Request: JRNL 62
- #2/6/18-14 Stand Alone Course Approval Request: JRNL 64
- #2/6/18-15 Stand Alone Course Approval Request: JRNL 70R series
- #2/6/18-16 Stand Alone Course Approval Request: LINC 77
- #2/6/18-17 Stand Alone Course Approval Request: LINC 84A
- #2/6/18-18 Stand Alone Course Approval Request: LINC 84B
- #2/6/18-19 Exception Process for Starting Courses Prior to Catalog Publication (Draft) - updated
- #2/6/18-20 Stand Alone Course Approval Requests: APAV 50A, 50B, 50C, 51, 53A,
—33 53B, 54A, 54B, 55, 56, 60, 75A, 75B, 81
- #2/6/18-34 Stand Alone Course Approval Requests: APCA 100, 101, 102, 104, 105, 106
—39
- #2/6/18-40 Foothill General Education Review Request, Area I - Humanities form (Draft)

2017-2018 Curriculum Committee Meetings:

<u>Fall 2017 Quarter</u>	<u>Winter 2018 Quarter</u>	<u>Spring 2018 Quarter</u>
10/3/17	1/23/18	4/24/18
10/24/17	2/6/18	5/8/18
11/14/17	2/20/18	5/22/18
11/21/17	3/6/18	6/5/18
12/5/17	3/20/18	6/19/18

Standing reminder: Items for inclusion on the CCC agenda are due no later than one week before the meeting.

2017-2018 Curriculum Deadlines:

- ~~12/1/17~~ Deadline to submit courses to CSU for CSU GE approval (Articulation Office).
- ~~12/1/17~~ Deadline to submit courses to UC/CSU for IGETC approval (Articulation Office).
- ~~2/1/18~~ Curriculum Sheet updates for 2018-19 catalog (Faculty/Divisions).
- 2/15/18 Deadline to submit local GE applications for 2017-18 catalog (Faculty/Divisions).
- 6/1/18 Deadline to submit new/revised courses to UCOP for UC transferability (Articulation Office).
- 6/22/18 COR/Title 5 updates for 2019-20 catalog (Faculty/Divisions).

Ongoing Submission of courses for C-ID approval and course-to-course articulation with individual colleges and universities (Articulation Office).

Distribution:

Mark Anderson (FA), Ben Armerding (LA), Rachelle Campbell (Faculty Co-Chair), Zachary Cembellin (PSME), Sara Cooper (BH), Bernie Day (Articulation Officer), LeeAnn Emanuel (DRC), Isaac Escoto (AS President), Hilda Fernandez (LA), Marnie Francisco (PSME), Evan Gilstrap (CNSL), Brenda Hanning (BH), Kurt Hueg (Dean, BSS), Eric Kuehnl (FA), Andrew LaManque (AVP Instruction, Administrator Co-Chair), Kristy Lisle (VP Instruction), Kent McGee (Evaluations), Bruce McLeod (Apprenticeship), Ronnie Miller (ASFC), Tiffany Rideaux (BSS), Katy Ripp (KA), Ben Schwartzman (DRC), Lety Serna (CNSL), Barbara Shewfelt (KA), Nanette Solvason (Dean, BH), Paul Starer (Dean, LA), Mary Thomas (LIBR), Mary Vanatta (Curriculum Coordinator), Anand Venkataraman (PSME), Bill Ziegenhorn (BSS)

COLLEGE CURRICULUM COMMITTEE

Committee Members – 2017-18

Meeting Date: 2/6/18Co-Chairs (2)

<input checked="" type="checkbox"/>	Rachelle Campbell	7469	Vice President, Academic Senate (tiebreaker vote only)	campbellrachelle@fhda.edu
<input checked="" type="checkbox"/>	Andrew LaManque	7179	Assoc. Vice President of Instruction and Institutional Research	lamanqueandrew@fhda.edu

Voting Membership (12 total; 1 vote per division)

<input type="checkbox"/>	Mark Anderson	7156	FA	andersonmark@fhda.edu
<input checked="" type="checkbox"/>	Benjamin Armerding	7453	LA	armerdingbenjamin@fhda.edu
<input checked="" type="checkbox"/>	Zachary Cembellin	7383	PSME	cembellinzachary@fhda.edu
<input type="checkbox"/>	Sara Cooper	7595	BH	coopersara@fhda.edu
<input checked="" type="checkbox"/>	Bernie Day	7225	Articulation	daybernie@fhda.edu
<input type="checkbox"/>	Hilda Fernandez	7542	LA	fernandezhilda@fhda.edu
<input checked="" type="checkbox"/>	Marnie Francisco	7420	PSME	franciscomarnie@fhda.edu
<input checked="" type="checkbox"/>	Evan Gilstrap	7675	CNSL	gilstrapevan@fhda.edu
<input checked="" type="checkbox"/>	Brenda Hanning	7466	BH	hanningbrenda@fhda.edu
<input type="checkbox"/>	Kurt Hueg	7394	Dean—BSS	huegkurt@fhda.edu
<input checked="" type="checkbox"/>	Eric Kuehnl	7479	FA	kuehnleric@fhda.edu
<input checked="" type="checkbox"/>	Tiffany Rideaux	7412	BSS	rideauxtiffany@fhda.edu
<input checked="" type="checkbox"/>	Katy Ripp (W & S)	7355	KA	rippkaty@fhda.edu
<input checked="" type="checkbox"/>	Leticia Serna	7059	CNSL	sernaleticia@fhda.edu
<input type="checkbox"/>	Barbara Shewfelt (F)	7658	KA	shewfeltbarbara@fhda.edu
<input type="checkbox"/>	Nanette Solvason	7730	Dean—BH	solvasonnanette@fhda.edu
<input type="checkbox"/>	Paul Starer	7227	Dean—LA	starerpaul@fhda.edu
<input checked="" type="checkbox"/>	Mary Thomas	7522	Library	thomasmary@fhda.edu
<input checked="" type="checkbox"/>	Anand Venkataraman	7495	PSME	venkataramananand@fhda.edu
<input checked="" type="checkbox"/>	Bill Ziegenhorn	7799	BSS	ziegenhornbill@fhda.edu

Non-Voting Membership (4)

<input type="checkbox"/>	Ronnie Miller		ASFC Rep.	
<input checked="" type="checkbox"/>	Mary Vanatta	7439	Curr. Coordinator	vanattamary@fhda.edu
<input type="checkbox"/>	Kent McGee	7298	Evaluations	mcgeekent@fhda.edu
<input type="checkbox"/>			SLO Coordinator	

Visitors

Joy Holland, Ben Schwartzman, Nazy Galoyan, Bruce
McLeod, Don MacNeil

**College Curriculum Committee
Meeting Minutes
Tuesday, January 23, 2018
2:00 p.m. – 3:30 p.m.
President’s Conference Room**

Item	Discussion
<p>1. Minutes: December 5, 2017</p> <p>2. Report Out from Division Reps</p>	<p>Approved by consensus.</p> <p>Speaker: All Vanatta reminded the group about the Feb. 1st deadline for 2018-19 curriculum sheets, and the Feb. 15th deadline for 2018-19 Foothill GE applications. Introduced Sharon Garcia-Vega, the new TEA in the Office of Instruction, in the position of Academic Services Technician.</p> <p>Language Arts: ESLL dept. continued discussions regarding ESLL 26 and 126—will have updated info at next CCC. New noncredit course proposal coming soon.</p> <p>Apprenticeship: Finalizing CORs and Stand Alone forms for new Veterinary Assisting apprenticeship courses.</p> <p>Fine Arts: Finishing up Media Studies certificate proposal.</p> <p>Kinesiology: Katy Ripp taking over as CCC Rep.</p> <p>PSME: C S department recently changed most courses from 5 units to 4.5 units, which has affected total units on General Studies-Science curriculum sheet. New Astronomy faculty.</p> <p>SRC: Reps met with community-based faculty to discuss curriculum; reported that those courses, all noncredit, are doing well, and expansion of the curriculum is under discussion.</p> <p>Counseling: In-service with counselors this Thursday, will discuss CLEP.</p> <p>Bio Health: New HORT course proposals coming soon.</p> <p>BSS: Continuing work on intra-division communication and how depts. can best communicate before the division level. Brainstorming better ways to utilize Canvas.</p> <p>Library: Upcoming speaker: Critical Thinking: An Antidote to Fake News, Feb. 5th at 11:00 AM in Hearthside Lounge.</p> <p>Campbell introduced Lisa DeLapo, new KCI faculty.</p>
<p>3. Announcements</p> <p> a. New Course Proposals</p> <p> b. Notification of Proposed Requisites</p> <p> c. Update on Curriculum Process Redesign</p>	<p>Speaker: Rachelle Campbell</p> <p>The following proposals were presented: ART 15D; D A 100; JAPN 101A, 101B, 101C, 101D. No comments.</p> <p>New requisites for ENGL 47AH, 47BH (all effective 2018-19); also listed are ongoing requisites, for which a Content Review form was not on file. No comments.</p> <p>Recent meeting regarding catalog production process and possible changes, present were: CCC Team; VP of Instruction,</p>

<p>d. BOARS Endorsement of Changes to Major Preparation Requirements</p>	<p>Kristy Lisle; Marketing staff; Dean of Counseling, Lan Truong; Dean of Enrollment Services, Nazy Galoyan. Current process is time-consuming and requires multiple people’s involvement. Need a process/system that involves fewer staff and takes less time. Brainstormed multiple catalog instances and/or deadlines per year; no consensus regarding a best path. LaManque shared comments from Counseling regarding need for courses archived in a single document—PDF is sufficient. Possibility of two catalogs per year was discussed; multiple pros and cons, but still under consideration. Fall start date instead of summer discussed (De Anza starts in the fall); wouldn’t speed up timeline by much, as Counseling would still request the catalog early in summer quarter, to advise students. Hope is that new curriculum system would save a lot of work/time for Vanatta and Marketing when creating the catalog. LaManque noted process of looking at vendors began three years ago and is being revived, but may take a year or longer to implement a new system. In the meantime, looking to see how we might incorporate late changes for the upcoming catalog.</p> <p>New technology will be a big change, but we need a big change. CCC Team has discussed possibility of allowing late changes for next year’s catalog—not meant for the creation of brand-new courses, but allowing for changes already in the works. Deadline for everything (CORs, all required forms) would be Feb. 20th, to be considered for 2018-19. Wouldn’t be a guarantee. LaManque noted this is an idea for this year, and we really need to take a fresh look at our deadlines. Stressed need for clean curriculum when it’s sent to Vanatta. Asked for feedback from group—all responses were positive. Campbell stressed need for change in how divisions review and approve curriculum. Apprenticeship rep noted lack of training for reps on how to review CORs. Campbell mentioned document she created for Bio Health reps and offered to forward it to group. Campbell is available to train reps and/or provide further help with their division’s process.</p> <p>BSS rep noted one issue for faculty is not understanding why certain forms are required. Also noted there is no way for reps to know if SLOs have been entered in TracDat. Campbell asked group if they would like expanded access in TracDat so that they can see if SLOs have been entered. LaManque noted that TracDat login now integrated in MyPortal.</p> <p>Motion to approve expanded TracDat access M/S (Ziegenhorn, Armerding). Approved.</p> <p>Day presented topic. Explained that transfer students run into problems when a university abruptly changes their admissions requirements. New policy will compel UCs to announce such changes two years in advance, so students are not adversely affected. Day is available to meet with any faculty who would like to review specific UC admissions requirements.</p>
<p>4. Consent Calendar a. GE Applications</p>	<p>Speaker: Rachelle Campbell The following GE applications were presented: Area IV—KINS 10, 51; PSYC 9. Campbell noted comments by GE subcommittee on KINS 10 application; asked if group would like to pull it, to cycle back with faculty. PSME rep commented that if subcommittee approved, CCC should respect their recommendation; noted opportunity for subcommittee to deny the application. Day agreed</p>

	<p>and noted that a course either satisfies the expectations for a GE area or does not. Counseling rep agreed and noted the possibility that topics mentioned in comments may actually be included in the course but not noted on the COR or on application. Noted that when she served on a GE subcommittee they discussed concerns with faculty before moving applications forward. Day noted that KINS 10 already approved for IGETC and CSU GE. Language Arts rep asked if subcommittee procedures codified anywhere—no; most meet via email. PSME rep shared her experience as longtime subcommittee member—meets in person or via email and shares comments with faculty usually by phone or email; role is to determine whether course meets criteria of the application. Language Arts rep suggested “Comments” box on application be re-worded to direct subcommittee as to what type of comments should be listed and to encourage they share any concerns with faculty. Campbell noted current forms lack area for subcommittee to specifically note approval—group agreed should be added.</p> <p>Approved by consensus.</p>
<p>5. Additions to Course Families: Combatives, Team Sports (Kinesiology)</p>	<p>Speaker: Rachelle Campbell Kinesiology is adding the following new courses to their existing families, effective 2018-19: Combatives Family—PHED 17A, 17B; Team Sports Family—PHED 43A. LaManque asked if De Anza has similar courses—Kinesiology rep believes they have Karate courses but unsure if anyone has checked. Rep noted there are differences between PE courses at Foothill and De Anza. Campbell will share information with her counterpart at De Anza.</p> <p>Motion to approve M/S (Francisco, Anderson). Approved.</p>
<p>6. Stand Alone Approval Request: ALCB 400A</p>	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for ALCB 400A. Will be permanently Stand Alone. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>7. Stand Alone Approval Request: ALCB 400C</p>	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for ALCB 400C. Will be permanently Stand Alone. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>8. Stand Alone Approval Request: ALCB 400E</p>	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for ALCB 400E. Will be permanently Stand Alone. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>9. Stand Alone Approval Request: JRNL 22A</p>	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 22A. Will be temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>10. Stand Alone Approval Request: JRNL 22B</p>	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 22B. Will be temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>11. Stand Alone Approval Request: JRNL 60</p>	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 60. Will be</p>

	<p>temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
12. Stand Alone Approval Request: JRNL 61	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 61. Will be temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
13. Stand Alone Approval Request: JRNL 62	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 62. Will be temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
14. Stand Alone Approval Request: JRNL 64	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 64. Will be temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
15. Stand Alone Approval Request: JRNL 70R series	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for JRNL 70R independent study series (also includes 71R, 72R, 73R). Will be temporarily Stand Alone and included in a forthcoming Journalism program. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
16. Stand Alone Approval Request: LINC 77	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for LINC 77. Will be temporarily Stand Alone and included in a forthcoming Makerspace Specialist program. Lisa DeLapo from KCI present for discussion. Received \$250K grant to build Makerspace, which is now open. LINC 77 allows students to learn design thinking and the ability to design and prototype in the Makerspace, which has 3-D printers, building materials, etc. Courses from other depts. welcome to use the Makerspace—contact her to schedule.</p> <p>Second read and possible action will occur at next meeting.</p>
17. Stand Alone Approval Request: LINC 84A	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for LINC 84A. Will be temporarily Stand Alone and included in a forthcoming Makerspace Specialist program. DeLapo noted course focuses on making 3-D objects; not meant to replace/replicate any existing Engineering course. Encourages students to take ENGR course if they wish to further pursue 3-D design.</p> <p>Second read and possible action will occur at next meeting.</p>
18. Stand Alone Approval Request: LINC 84B	<p>Speaker: Rachelle Campbell First read of Stand Alone Approval Request for LINC 84B. Will be temporarily Stand Alone and included in a forthcoming Makerspace Specialist program. DeLapo noted course is explorative and not meant to replace/replicate any existing Engineering course. BSS rep noted DeLapo interested in creating certificate of achievement; in the beginning stages. DeLapo noted that K-12 computer labs and libraries have been expanding to include technology, design, innovation—very few teachers</p>

	<p>qualified to teach in such spaces. Certificate will target this population of teachers.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>19. Proposed Exception Process for Starting Courses Prior to Catalog Publication</p>	<p>Speaker: Rachelle Campbell</p> <p>Exception process being proposed to address instances in which an outside entity (e.g., accreditation, C-ID) affects a course in ways that are beyond our control. Additionally, in certain circumstances an argument can be made for course changes to be implemented early due to their effect on students. Exception process would allow for such changes, outside of our regular process. Curriculum would need to be complete when submitted to Vanatta; need to ensure that changes would not adversely affect the student if implemented early. Proposed process outlined in document. Apprenticeship rep responded positively; noted that apprenticeship community will be enthusiastic. Suggested updating line A within “Process” to add clarity regarding forms and SLOs—what “completed” means; for example, forms must be approved by the division. LaManque noted proposal is an extension of conversation at previous meeting, and interest in not carving out specific processes for particular groups or divisions, such as noncredit or apprenticeship. Noted that this is aside from the idea of speeding up our curriculum process. Starer stated we have needed something like this for a very long time; cautioned that some faculty may try to take advantage and use this to get around the regular curriculum process, so we must be deliberate and meticulous regarding which requests get approved. Language Arts rep asked for a real example of what would qualify— Campbell noted D A 100 course proposal on today’s agenda, which was dictated by accreditation. SRC rep noted could be very helpful for some of their faculty. BSS rep noted could be useful when creating ADTs that need one or two new courses.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>20. Good of the Order</p>	
<p>21. Adjournment</p>	<p>3:08 PM</p>

Attendees: Mark Anderson (FA), Ben Armerding (LA), Rachelle Campbell (Faculty Co-Chair), Zachary Cembellin (PSME), Sara Cooper (BH), Bernie Day (Articulation Officer), Lisa DeLapo (guest—KCI), LeeAnn Emanuel (SRC), Hilda Fernandez (LA), Marnie Francisco (PSME), Sharon Garcia-Vega (guest—Instruction), Evan Gilstrap (CNSL), Brenda Hanning (BH), Eric Kuehnl (FA), Andrew LaManque (AVP Instruction, Administrator Co-Chair), Bruce McLeod (Apprenticeship), Tiffany Rideaux (BSS), Katy Ripp (KA), Lety Serna (CNSL), Paul Starer (Dean, LA), Mary Thomas (LIBR), Mary Vanatta (Curriculum Coordinator), Anand Venkataraman (PSME), Bill Ziegenhorn (BSS)

Minutes Recorded by: M. Vanatta

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

**Foothill College
College Curriculum Committee
New Course Proposal**

*This form should be completed by the faculty author as preparation to writing a new course. Your division CC rep can assist you in completing it appropriately, and will forward it to the Office of Instruction for inclusion as an announcement at the next available CCC meeting. The purpose of this form is **interdisciplinary communication**. The responsibility to rigorously review and approve new courses remains with the divisional curriculum committees.*

Faculty Author: Amy Sarver

Proposed Number: NCEL 405

Proposed Units: 0 (noncredit)

Proposed Hours: 48

Proposed Transferability: Non-transferable

Proposed Title: Introduction to Computer & Internet Language for ESL

Proposed Catalog Description & Requisites:

An introductory course for the adult English-learner to the computer and Internet language needed to be successful on the community college campus and in college level coursework. Primary focus will be on developing language to communicate basic computer problems and directions for basic computer tasks through Listening, Speaking, Reading and Writing activities in the classroom.

Proposed Discipline: English as a Second Language (ESL): Noncredit

(For guidance, refer to the Minimum Quals handbook, available on [the CCC webpage.](#))

Note: If any proposed discipline falls within the purview of another division, please verify approval from that division. Division Rep: _____ Date: _____

To which Degree(s) or Certificate(s) would this course potentially be added?

Could potentially be added to a Non-Credit Enhanced Certificate Bridge to College.

Are there any other departments that may be impacted from the addition of this course? Please identify those departments and the effect:

N/A

Comments & Other Relevant Information for Discussion:

The Computer Science and Business departments were contacted, but it was determined that this course does not conflict or overlap with any of their current course offerings.

This course follows the goals and mission of Foothill College to help students overcome obstacles to meet academic expectations. English learning students at various levels of language development typically fit into two groups of technological experience: one where the students have very little experience with computers and the Internet, and another in which the students may be extremely skilled with computers and the Internet yet lack the

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

language to communicate in tech jargon. The achievement gap seen in many credit courses suggests that English learners could benefit from a class such as this because many basic college-level assignments require some degree of cultural and linguistic awareness beyond just having the grammar and vocabulary to complete work. In addition, the use of Canvas is becoming increasingly popular which is good for saving paper, but poses an added challenge for English learners who lack tech experience. Even requiring work to be typed, by itself, involves some understanding of how to manipulate the software to follow certain heading and other formatting styles. Every year a handful of students visit the TLC with essays adhering to a double-spacing requirement. This is a standard practice that typically begins in Middle School or High School in the US, but for students unfamiliar with this norm, they often double-space each line manually. For these students, double-spacing becomes a painstaking and time-consuming process, and this basic requirement that is easily incorporated into student work with formatting tools available in most word processors becomes an obstacle for students new to this idea.

Instruction Office:

Date presented at CCC:

Number assigned:

CCC Notification of Proposed Prerequisites/Co-Requisites

The following courses are currently undergoing review for requisite additions or changes. Please contact the Division Curriculum Rep if you have any questions or comments.

Target Course Number & Title	Editor	Requisite Course Number & Title	New/Ongoing
APAV 54B: Comparative Veterinary Anatomy & Physiology for the Veterinary Technician	L. Eshman	Prereq: APAV 54A (Comparative Veterinary Anatomy & Physiology for the Veterinary Technician)	New for 2018-19
APAV 56: Animal Management & Clinical Skills II	L. Eshman	Prereq: APAV 55 (Animal Management & Clinical Skills I)	New for 2018-19
APAV 81: Clinical Pathology Methods	L. Eshman	Prereq: APAV 55 (Animal Management & Clinical Skills I)	New for 2018-19
DANC 2B: Intermediate Modern Dance	B. Gong	Prereq: DANC 2A (Beginning Modern Dance)	Ongoing
DANC 3B: Intermediate Jazz Dance	B. Gong	Prereq: DANC 3A (Beginning Jazz Dance)	Ongoing
DANC 12A: Repertory Dance II	B. Gong	Prereq: DANC 11A (Repertory Dance I)	Ongoing
DANC 12B: Choreography for Performance II	B. Gong	Prereq: DANC 11B (Choreography for Performance I)	Ongoing
DANC 12C: Dance Production II	B. Gong	Prereq: DANC 11C (Dance Production I)	Ongoing
DANC 13B: Intermediate Contemporary Dance	B. Gong	Prereq: DANC 13A (Introduction to Contemporary Dance)	Ongoing
DANC 18B: Intermediate Hip-Hop Dance	B. Gong	Prereq: DANC 18A (Introduction to Hip-Hop Dance)	Ongoing
KINS 62B: Clinical Experiences in Sports Medicine II	W. Voyce	Prereq: KINS 62A (Clinical Experiences in Sports Medicine I)	Ongoing
KINS 62C: Clinical Experiences in Sports Medicine III	W. Voyce	Prereq: KINS 62B (Clinical Experiences in Sports Medicine II)	Ongoing
KINS 62D: Clinical Experiences in Sports Medicine IV	W. Voyce	Prereq: KINS 62C (Clinical Experiences in Sports Medicine III)	Ongoing
KINS 62E: Clinical Experiences in Sports Medicine V	W. Voyce	Prereq: KINS 62D (Clinical Experiences in Sports Medicine IV)	Ongoing

Change to English Proficiency Requirements ESLL 26 Deactivation

ESLL Department faculty have determined, with the majority support of English faculty, that ESLL 26 will be deactivated as of Summer 2018, thus prompting the need for other departments to remove the course as satisfying the English Proficiency requirement listed for certain degrees and course prerequisites. We arrived at this decision for two main reasons.

First, ESLL 26 and ENGL 1A are equivalent courses, but the former has always been used informally as a prerequisite for the latter. Administration has determined that a course cannot serve as a prerequisite and an equivalent, so as of Summer 2018, students placing in ESLL 26 will have no pathway into the English sequence other than taking the English Placement Test upon completion of ESLL 26.

Second, institutional research shows students having completed *only* ESLL 125 and 249 have been passing ENGL 1A at an 83% success rate. This impressive data underscores the superfluousness of maintaining ESLL 26 as a sheltered composition course in our ESLL series. Therefore, starting Summer 2018, any students who would have previously placed into ESLL 26 will instead place into ESLL 125 and 249 and will be eligible for ENGL 1A *after* successful completion of those courses.

LACC approval: 12/05/2017

New Subject Code Proposal

APAV: Apprenticeship Veterinary Assisting

The apprenticeship curriculum has regularly added new programs of study when the need arises. Advanced Veterinary Assisting is such a program. Apprenticeship training in this discipline is necessary to meet the demand for trained veterinary assistants in the Bay Area and California.

There is a high demand for advanced veterinary assistants and Registered Veterinary Technicians in the Bay Area. This apprenticeship is designed to meet that demand.

Instructors must meet the minimum qualifications for the Registered Veterinary Technician discipline as set forth in the Disciplines list published by the State of California Community College Chancellors Office.

Therefore it is proposed that the designation of **Apprenticeship Veterinary Assisting (APAV)** be created and linked to the TOP Code: 0102.10

The division for APAV would be: **Apprenticeship**

Course Designations

It is proposed that the following courses be DESIGNATED AS APAV

- 50A Current Topics in Veterinary Technology I
- 50B Current Topics in Veterinary Technology II
- 50C Current Topics in Veterinary Technology III
- 51 Introduction to Veterinary Technology
- 53A Medical Terminology
- 53B Medical Calculations
- 54A Comparative Veterinary Anatomy & Physiology for the Veterinary Technician
- 54B Comparative Veterinary Anatomy & Physiology for the Veterinary Technician
- 55 Animal Management & Clinical Skills I
- 56 Animal Management & Clinical Skills II
- 60 Veterinary Office Practice
- 75A Animal Care Skills I
- 75B Animal Care Skills II
- 81 Clinical Pathology Methods

Approved by the Apprenticeship division curriculum committee: 10/26/17

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: ALCB 400A

Course Title: LIP-READING: SIMPLE CONSONANT SOUNDS

Credit Status:

Credit course
 Noncredit course

Catalog Description:

Designed for adults with acquired, congenital or progressive hearing impairment and those who have difficulty processing receptively speech in adverse listening situations. Includes the most visible basic consonant sounds of the English language and how production of these basic speech sounds appears on the lips and face of various speakers. Descriptions of mechanics of the ear, sound and hearing testing will be presented. Large area assistive listening devices will be described (e.g., T-coil, fm, infrared, personal captioning devices). Practical experience in lip-reading both in and out of class.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This specialized course is one of the Community Based enrichment and lifelong learning options offered in senior centers/residences and other community sites throughout the local area. Developed in response to local resident demand.

Criteria C. Curriculum Standards (please initial as appropriate)

EM The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Ellen Mastman **Date:** 1-10-18

Division Curriculum Representative: Ben Schwartzman **Date:** 1-10-18

Date of Approval by Division Curriculum Committee: 11-28-17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Student Resource and Support Programs

ALCB 400A LIP-READING: SIMPLE CONSONANT SOUNDS

[Edit Course Outline](#)

ALCB 400A

LIP-READING: SIMPLE CONSONANT SOUNDS

Summer 2018

24 hours total.

0 Units

Repeatability -

Statement: Unlimited Repeatability.

Criteria: Course materials change each time, with updated language samples. For example, new examples of usages of relatively easy to see consonantal speech sounds.

Status -

Course Status: Active

Grading: No Credit

Degree Status: Non-Applicable

Credit Status: Non-Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation: 4-17-14; 5/1/17

Division Dean Information -

Seat Count: 20

Load Factor: .030

FOAP Code: 122010131051493031

Instruction Office Information -

FSA Code: 3700 - OAS/LIFE LONG LEARNING

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This specialized course is one of the Community Based enrichment and lifelong learning options offered in senior centers/residences and other community sites throughout the local area. Developed in response to local resident demand.

1. Description -

Designed for adults with acquired, congenital or progressive hearing impairment and those who have difficulty processing receptively speech in adverse listening situations. Includes the most visible basic consonant sounds of the English language and how production of these basic speech sounds appears on the lips and face of various speakers. Descriptions of mechanics of the ear, sound and hearing testing will be presented. Large area assistive listening devices will be described (e.g., T-coil, fm, infrared, personal captioning devices). Practical experience in lip-reading both in and out of class.

Prerequisite: None

Co-requisite: None

Advisory: Students are advised to set aside a short period of time each day to allow practice either in a mirror or with another individual.

2. Course Objectives -

The student will be able to:

- A. describe visible homophone groups of easy to recognize consonants
- B. demonstrate some ability to follow conversations and discussions using auditory and visual cues
- C. demonstrate ability to focus on one person's speech, ignoring background noise, while being able to describe potential obstacles to this process
- D. communicate receptively using relatively visible consonants as verbal/non-verbal cues, along with cues from context, semantics and grammar
- E. utilize coping skills for dealing with hearing loss

3. Special Facilities and/or Equipment -

Accessible, quiet classroom with assistive listening and/or captioning devices, projector and laptop as needed, adequate lighting, whiteboard or blackboard.

4. Course Content (Body of knowledge) -

This class includes lecture/discussions/practice of all or part of these areas except where indicated:

- A. Hearing Loss
 1. Coping skills and adapting the environment to optimize communication, large venue listening devices
 2. Social problems related to hearing loss (lecture/discussion)
 3. Reasonable expectations for hearing aids (lecture/discussion)
 4. Descriptions of medical and audiological procedures relating to hearing loss, mechanics of ear and hearing (lecture/discussion)
- B. Lip-Reading
 1. Words in context, utilizing contextual cues and categories
 2. Words in isolation and homophenes
 3. Easily visible consonants and the cues related to their production
 4. Verbal and non-verbal cues
 5. Features of auditory cues

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Instructor observation of ability to reflect course material
- B. Participation in all classroom activities
- C. Student self-assessment of ability communicate in adverse listening situations

7. Representative Text(s) -

Dugan, Marcia B. Hearing Loss. Washington, DC: Gallaudet University Press, 2003.

Jeffers, J., and M. Barley. Speechreading (Lipreading). Springfield, IL: Charles C. Thomas Press, 1980.

Mayo Clinic, Audiological Testing Services: www.mayoclinic.org/departments-centers/audiology/florida/services/hearing-tests

Johns Hopkins, Understanding Your Audiogram:

www.hopkinsmedicine.org/healthlibrary/conditions/adult/otolaryngology/Understanding_Your_Audiogram_22,UnderstandingYourAudiogram

Interactive website to help students understand the anatomy of the ear: www.amplifon.co.uk/interactive-ear/index.html

Selected articles, websites and other reference materials as assigned by instructor.

8. Disciplines -

Deaf and Hearing Impaired: Disabled Students Programs and Services

9. Method of Instruction -

During periods of instruction the student will be participating in discussions, learning and practicing lip reading techniques, creating and/or

presenting lip reading materials for others to lip read, listening to lectures on topics related to hearing loss and lip reading.

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Students are expected to write samples of sentence-length or longer in standard conversational English to illustrate various aspects of lip-reading and lip-reading challenges. They are expected to read various articles and books, and view videos pertaining to subject matter covered in class. Outside of class they are expected to practice speechreading (lip-reading) using materials distributed in class, dedicated practice times with friends and family, as well as using video and online materials.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: ALCB 400C

Course Title: LIP-READING: BACK CONSONANTS & BLENDS

Credit Status:

Credit course
 Noncredit course

Catalog Description:

Designed for adults with acquired, congenital or progressive hearing impairment or who have difficulty hearing in adverse listening conditions. Includes the least visible consonant sounds and blends of consonant sounds in the English language and contrasting the appearance of production of different consonant sounds by the oral structures, including cues from behind the lips, teeth and face of the speaker. Aspects of hearing and the auditory range of vowel, consonants and music will be discussed. Assistive listening devices for television, adaptive telephones and assistive devices for hard of hearing, such as special alarms and emergency procedures, technology for going to the movies will be discussed along with special features of hearing aids (e.g., variable digital settings, restaurant programs, t-coils, music programs). Practical experience in lip-reading and using adaptive equipment both in and out of class. Speech reading difficult-to-see vowels, consonants and blends.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided

by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This specialized course is one of the Community Based enrichment and lifelong learning options offered in senior centers/residences and other community sites throughout the local area. Developed in response to local resident demand.

Criteria C. Curriculum Standards (please initial as appropriate)

EM The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Ellen Mastman **Date:** 1-10-18

Division Curriculum Representative: Ben Schwartzman **Date:** 1-10-18

Date of Approval by Division Curriculum Committee: 11-28-17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Student Resource and Support Programs

ALCB 400C LIP-READING: BACK CONSONANTS & BLENDS

[Edit Course Outline](#)

ALCB 400C LIP-READING: BACK CONSONANTS & BLENDS
24 hours total.

Summer 2018
0 Units

Repeatability -

Statement: Unlimited Repeatability.

Criteria: Course materials change each time with updated language samples and new discussions about innovations in hearing loss technology. For example, there are always new examples of usages of relatively difficult to see vowels, blended consonants, co-articulated consonants and vowels, and subtly visible consonant sounds. One example of changes in hearing technology is the recent passage by Congress to allow Over-the-Counter hearing aid sales, revolutionizing the way hearing aids can be marketed.

Status -

Course Status: Active

Grading: No Credit

Degree Status: Non-Applicable

Credit Status: Non-Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation: 4-17-14

Division Dean Information -

Seat Count: 20

Load Factor: .030

FOAP Code: 122010131051493000

Instruction Office Information -

FSA Code: 3700 - OAS/LIFE LONG LEARNING

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This specialized course is one of the Community Based enrichment and lifelong learning options offered in senior centers/residences and other community sites throughout the local area. Developed in response to local resident demand.

1. Description -

Designed for adults with acquired, congenital or progressive hearing impairment or who have difficulty hearing in adverse listening conditions. Includes the least visible consonant sounds and blends of consonant sounds in the English language and contrasting the appearance of production of different consonant sounds by the oral structures, including cues from behind the lips, teeth and face of the speaker. Aspects of hearing and the auditory range of vowel, consonants and music will be discussed. Assistive listening devices for television, adaptive telephones and assistive devices for hard of hearing, such as special alarms and emergency procedures, technology for going to the movies will be discussed along with special features of hearing aids (e.g., variable digital settings, restaurant programs, t-coils, music programs). Practical experience in lip-reading and using adaptive equipment both in and out of class. Speech reading difficult-to-see vowels, consonants and blends.

Prerequisite: None

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. increase the probability of being able to identify and/or discriminate difficult-to-distinguish consonant and vowel sounds of English, as well as consonant blends (e.g., /k/, /i/ as in "kick", /bl/ as in "black", etc.)
- B. demonstrate improved ability to follow conversations, presentations and discussions using auditory and visual cues
- C. demonstrate improved ability to focus on one person's speech, ignoring background noise
- D. communicate receptively using vowels, consonants and consonant blends with low visibility as verbal/non-verbal cues, and predicting the presence of non-/less-visible speech sounds
- E. utilize coping skills and personal technology for dealing with the repercussions of hearing loss in daily living

3. Special Facilities and/or Equipment -

Accessible, mostly quiet classroom with assistive listening devices or captioning as needed, adequate lighting, whiteboard or blackboard, electrical outlet and screen or wall for projected or video materials.

4. Course Content (Body of knowledge) -

This class includes lecture/discussions/labs of all or part of these areas:

- A. Hearing Loss
 1. Coping skills and adapting the environment to optimize communication, television, telephone, alerting and alarm devices, service dogs, CART
 2. Social problems related to hearing loss (lecture/discussion)
 3. Reasonable expectations for hearing aids and new and advanced features of hearing aids (lecture/discussion)
 4. Descriptions of speech process as it affects efforts at speech reading
- B. Lip-Reading
 1. Words in context, utilizing contextual cues
 2. Words in isolation
 3. Difficult-to-see vowels and consonants, their production and the cues related to their production that increase probability of understanding
 4. Verbal and non-verbal cues
 5. Auditory cues

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Instructor observation of ability to reflect course material
- B. Participation in all classroom activities
- C. Post-test on last day of quarter

7. Representative Text(s) -

Dugan, Marcia B. Hearing Loss. Washington, DC: Gallaudet University Press, 2003.

Jeffers, J., and M. Barley. Speechreading (Lipreading). Springfield, IL: Charles C. Thomas Press, 1980.

Mayo Clinic, Audiological Testing Services: www.mayoclinic.org/departments-centers/audiology/florida/services/hearing-tests

Johns Hopkins, Understanding Your Audiogram:

www.hopkinsmedicine.org/healthlibrary/conditions/adult/otolaryngology/Understanding_Your_Audiogram_22,UnderstandingYourAudiogram

Although these texts are older than the suggested "5 years or newer standard," these are seminal texts for teaching lip-reading and

speechreading.

Selected articles, websites and other reference materials as assigned by instructor.

8. Disciplines -

Deaf and Hearing Impaired: Disabled Students Programs and Services

9. Method of Instruction -

During periods of instruction the student will be participating in discussions, learning and practicing lip-reading techniques, presenting lip-reading materials for others to lip-read, listening to and watching lectures or watching media on topics related to hearing, hearing loss and lip-reading.

10. Lab Content -

Student practice in lip-reading techniques with instructor or other students in class, with instructor observations and feedback/corrections for improvement of proficiency.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Students are expected to write samples of sentence-length or longer in standard conversational English to illustrate various aspects of lip-reading and lip-reading challenges. They are expected to read various articles and books, and view videos pertaining to subject matter covered in class. Outside of class they are expected to practice speechreading (lip-reading) using materials distributed in class, dedicated practice times with friends and family, as well as using video and online materials. Students are encouraged to find examples of information from the media about new developments/research pertinent to hearing loss to share in class.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: ALCB 400E

Course Title: LITERARY LIP-READING

Credit Status:

Credit course
 Noncredit course

Catalog Description:

Advanced instruction in lip-reading techniques for the hard of hearing adult. Practice in lip-reading/speechreading using group discussion of readings presented in class by a variety of speech models. Emphasis on speechreading language samples that vary in length from one word to one paragraph with or without context, sometimes presented partially aloud, sometimes in complete silence. Additional focus on utilization of extensive contextual cues and use of short- and long-term memory to help with speech understanding, as well as focus on homophone review and visibility of articulation of speech sounds, visible discrimination of speech sounds. Lip-reading materials will consist of the reading of books, short stories or articles written in contemporary American English read together in class, suggested by students and selected by the instructor or by a vote of the students.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability.

Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This specialized course is one of the Community Based enrichment and lifelong learning options offered in senior centers/residences and other community sites throughout the local area. The courses were developed in response to site coordinator requests, based upon individual site need and demands from local residents.

Criteria C. Curriculum Standards (please initial as appropriate)

EM The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Ellen Mastman **Date:** 1-10-18

Division Curriculum Representative: Ben Schwartzman **Date:** 1-10-18

Date of Approval by Division Curriculum Committee: 11-28-17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Student Resource and Support Programs

ALCB 400E LITERARY LIP-READING

[Edit Course Outline](#)

ALCB 400E LITERARY LIP-READING

Summer 2018

24 hours total.

0 Units

Repeatability -

Statement: Unlimited Repeatability.

Criteria: A. Student requests more practice sessions to maintain acquired skills. 1. New lipreading materials presented provide new challenges in speechreading in quiet and noise. 2. New developments in fields relating to hearing loss. 3. Dedicated speechreading practice time provided with various speech models at times that remove pressures of processing everyday communication in real life situations by removing the need to respond and react to messages and requiring demonstration of understanding spoken communications. Students should grow in awareness of production of spoken English speech sounds, individual styles and features of the speakers in the student's home life and changes and developments in treatment of hearing loss and hearing technology.

Status -

Course Status: Active

Grading: No Credit

Degree Status: Non-Applicable

Credit Status: Non-Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation: 4-17-14

Division Dean Information -

Seat Count: 20

Load Factor: .030

FOAP Code: 122010131051493000

Instruction Office Information -

FSA Code: 3700 - OAS/LIFE LONG LEARNING

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

**Program
Unique
Code:**

**Content
Review
Date:**

Former ID:

Need/Justification -

This specialized course is one of the Community Based enrichment and lifelong learning options offered in senior centers/residences and other community sites throughout the local area. The courses were developed in response to site coordinator requests, based upon individual site need and demands from local residents.

1. Description -

Advanced instruction in lip-reading techniques for the hard of hearing adult. Practice in lip-reading/speechreading using group discussion of readings presented in class by a variety of speech models. Emphasis on speechreading language samples that vary in length from one word to one paragraph with or without context, sometimes presented partially aloud, sometimes in complete silence. Additional focus on utilization of extensive contextual cues and use of short- and long-term memory to help with speech understanding, as well as focus on homophene review and visibility of articulation of speech sounds, visible discrimination of speech sounds. Lip-reading materials will consist of the reading of books, short stories or articles written in contemporary American English read together in class, suggested by students and selected by the instructor or by a vote of the students.

Prerequisite: None

Co-requisite: None

Advisory: Students are advised to set aside short dedicated periods of time each day for lip-reading practice with others or in-mirror practice.

2. Course Objectives -

The student will be able to:

- A. Demonstrate speechreading: full face and side view.
- B. Demonstrate speechreading: visible sounds.
- C. Implement contextual cues to increase speechreading of invisible speech sounds.
- D. Implement assertive techniques to ease communication obstacles caused by speaker habits and environment.
- E. Request and utilize assistive listening devices when needed in public venues, classes, group conversation, etc.

3. Special Facilities and/or Equipment -

Accessible classroom with assistive listening devices and captioning as needed, adequate lighting with control for backlighting, whiteboard or blackboard, electrical outlets for projection of materials and computers when needed. Materials to use for lip-reading/speechreading practice.

4. Course Content (Body of knowledge) -

- A. Lip-reading/speechreading
 1. Receptive speechreading full face and varied side views and distances, varied materials
 2. Receptive speechreading using contextual cues, varied speakers and spoken materials
 3. Receptive speechreading using environmental cues; varied speakers, running discourse or extended conversation
- B. Hearing loss
 1. Coping techniques involving interpersonal interaction: (e.g., suggestions to make to help a speaker be more understandable)
 2. Coping techniques involving assistive technology and hearing aids (e.g., asking for assistive listening device at theater or asking for preferred seating)
 3. Occasional discussion of new technology and developments in hearing, hearing loss and other pertinent topics

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Achievement of course objectives as reflected on Student Educational Contract

- B. Instructor observation of ability to reflect course material
- C. Participation in all classroom activities

7. Representative Text(s) -

Carter, Betty Woerner. I Can't Hear You in the Dark: How to Learn and Teach Lipreading. Springfield, IL: Charles C. Thomas Publisher, 1998.

Kaplan, H., C. Garretson, and S. Bally. Speechreading: A Way to Improve Understanding. Washington, DC: Gallaudet University Press, 1985.

Scharper, Diane, and Phillip Scharper. Reading Lips and Other Ways to Overcome a Disability. Loyola University of Maryland, Baltimore, MD: Apprentice House, 2009.

Although these texts are older than the suggested "5 years or newer standard," these are seminal texts for teaching lip-reading and speechreading.

Other assigned readings may include:

Journals, such as On the Level, the Quarterly Newsletter of the Vestibular Disorders Association, and journal of Hearing Loss Association of America, Hearing Loss Magazine.

8. Disciplines -

Deaf and Hearing Impaired: Disabled Students Programs and Services

9. Method of Instruction -

During periods of instruction the student will be watching and interpreting other students as they model speechreading materials, usually paragraphs from contemporary novels and other sources; the student will be modeling speechreading materials in a manner consistent with optimizing communication for a hard of hearing listener; the student will be listening to lectures and discussions pertinent to the topics of speechreading, hearing loss, listening in challenging environments, managing speakers in conversation and group settings to maximize understanding by hard of hearing listeners. Students will engage in frequent group discussions in a book-group style, for the purpose of highlighting different aspects of lip-reading challenges.

10. Lab Content -

Student practice and demonstrations of speechreading technique, with instructor observations and feedback from both instructor and other students for improving proficiency: a variety of practical situations will be simulated.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Watch television programs with favorite "talking heads," such as news reports and interviews, with volume turned off or very low to practice lip-reading/speechreading in a rapid and challenging listening situation.
- B. Create video recordings of favorite news and interview television programs so as to allow the recordings to be watched in silence, played back with sound and then watched in silence again.
- C. Using a newspaper or magazine, read to oneself or in a mirror read by a partner to observe the production of certain speech sounds.
- D. Practice speechreading with friends and family members several times during the week for the purpose of learning individual characteristics of their appearance while uttering various speech sounds.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 22A

Course Title: INTRODUCTION TO REPORTING & NEWSWRITING

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

An introduction to gathering, synthesizing/organizing and writing news in journalistic style across multiple platforms. Includes role of the journalist and related legal and ethical issues, including instruction and practice in reporting and the fundamentals of news writing for media, with analysis of typical news stories. Concentration on the language and style of news writing; organization and structure of news stories; the lead and the basic story types. Students will report and write based on their original interviews and research to produce news content. Experiences may include covering speeches, meetings, and other events, writing under deadline and use of AP Style.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability.

Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for student news, authentic learning, vocational training.

Criteria C. Curriculum Standards (please initial as appropriate)

- The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Fine Arts and Communication

JRNL 22A INTRODUCTION TO REPORTING & NEWSWRITING

[Edit Course Outline](#)

JRNL 22A

INTRODUCTION TO REPORTING & NEWSWRITING

Summer 2018

4 hours lecture, 3 hours laboratory.

5 Units

Total Contact Hours: 84

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 180

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 4

Lab Hours: 3

Weekly Out of Class Hours: 8

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: UC/CSU

Validation: 1/9/18

Division Dean Information -

Seat Count: 30 Load Factor: .137 FOAP Code: 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID: Formerly: JRNL 52A

Need/Justification -

This course helps to support the creation of student generated news on campus. Additionally, it will be included as a required core course for the forthcoming AA degree in Journalism.

1. Description -

An introduction to gathering, synthesizing/organizing and writing news in journalistic style across multiple platforms. Includes role of the journalist and related legal and ethical issues, including instruction and practice in reporting and the fundamentals of news writing for media, with analysis of typical news stories. Concentration on the language and style of news writing; organization and structure of news stories; the lead and the basic story types. Students will report and write based on their original interviews and research to produce news content. Experiences may include covering speeches, meetings, and other events, writing under deadline and use of AP Style.

Prerequisite: None

Co-requisite: None

Advisory: ENGL 1A or 1AH; not open to students with credit in JRNL 52A.

2. Course Objectives -

The student will be able to:

- A. Demonstrate a basic knowledge of the fundamentals of news writing and the organization and structure of news stories, including the basics of news gathering and reporting.
- B. Gather, organize and synthesize information to compile into news stories and write the stories.
- C. Analyze contemporary issues and apply ethical consideration to news writing.
- D. Prepare news stories for converging media.

3. Special Facilities and/or Equipment -

Access to computer word processing software, tape recorder, camera, or other equipment necessary for news gathering and reporting.

4. Course Content (Body of knowledge) -

- A. Demonstrate a basic knowledge of the fundamentals of news writing and the organization and structure of news stories, including the basics of news gathering and reporting
 1. Grammar
 2. AP Style
 3. Quotes and attributions
 4. News writing basics
 5. The inverted pyramid
 6. Different lede styles
 7. Reporting with numbers and statistics
 8. Non-sexist and non-discriminatory language
- B. Gather, organize and synthesize information to compile into news stories and write the stories
 1. Write lead
 2. Write simple and complex/long-form news articles using the inverted pyramid and other formats under deadline
 - a. Informative, analysis, opinion editorial, review, etc.
 3. Develop interview questions and conduct interviews
 4. Covering a speech, event, meeting, or interview
 5. Computer-assisted reporting
 6. Using news releases and wire services
 7. Selecting and using diverse sources
 8. Compiling and editing the story
- C. Analyze contemporary issues and apply ethical consideration to news writing
 1. Diversity in reporting (reflecting the community to fairly represent minorities, women, and LGBT sources)
 2. Media legal and ethical issues
 3. Evaluation and selection of news; principles of news judgment
 4. Objectivity and fairness
- D. Prepare news stories for converging media platforms
 1. Writing for broadcast and social media
 2. Writing for print
 3. Writing for the internet
 - a. Introduction to search engine optimization
- E. Laboratory activities: writing assistance for all stages of writing or production, depending on project type

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Writing assignments
- B. Style quizzes
- C. Exams
- D. Critiques; peer critiques
- E. Professional protocols (meeting deadlines, attendance, adherence to ethics)

7. Representative Text(s) -

Examples of Primary Texts and References:

- Brooks, Brian, et al. News Reporting and Writing. 10th ed. Bedford St. Martin's, 2011.
Harrower, Tim. Inside Reporting. 3rd ed. McGraw-Hill, 2012.
Missouri Group. News Reporting and Writing. Bedford/St. Martin's, 2013.
Mencher, Melvin. Melvin Mencher's News Reporting and Writing. McGraw-Hill, 2013.
Rich, Carole. Writing and Reporting News - A Coaching Method. 5th ed. Cengage Learning, 2013.

Examples of Supporting Texts and References:

- Goldstein, Norm. Associated Press Stylebook and Libel Manual. New York: The Associated Press, 2013.
AP Stylebook online. <https://www.apstylebook.com/>
Kessler, Lauren, and Duncan McDonald. When Words Collide: A Media Writer's Guide to Grammar and Style. 8th ed. Cengage, 2012.
Associated Press. Associate Press Stylebook and Briefing on Media Law. Basic Books.
Strunk, William. The Elements of Style. Tribeca Books.
News U (Poynter News University) offers many free or low cost resources and materials for teachers and students for this course.

8. Disciplines -

Communication Studies OR English OR Journalism

9. Method of Instruction -

- A. Lecture and visual aids
- B. Discussion of assigned reading
- C. Discussion and problem solving performed in class
- D. In-class essays
- E. In-class exploration of internet sites
- F. Quiz and examination review performed in class
- G. Homework and extended projects
- H. Guest speakers
- I. Collaborative learning and small group exercises

10. Lab Content -

Production of a regular news or feature product with a journalism emphasis by and for students and distributed to a campus or community audience. Some suggested possible lab activities leading toward publication might be (options):

- A. Finding stories
- B. Reporting and writing news, feature, opinion and sports stories
- C. Using video equipment, editing video
- D. Using a digital camera and photo editing software
- E. Electronically filing stories, photos and other visual media
- F. Proofreading, copyediting and improving stories
- G. Applying standards, including multiple named sources, adequate lead, spelling, grammar, AP style
- H. Using design software
 - I. Interviewing for news media
- J. Role of student media on campus
- K. Finding college, expert and real person sources using standard methods, websites and social media
- L. Online and multimedia presentation of stories
- M. Utilizing journalism resources, such as textbooks, guides and websites to improve skills
- N. Understanding and applying ethical standards for news reporting and photojournalism
- O. Understanding and applying ethical standards for news reporting
- P. Understanding news staff organization
- Q. Understanding media law as it applies to journalism
- R. Using software and web programs to present stories

- S. Exploring careers in news media
- T. Exploring entrepreneurial opportunities in news media
- U. Using critique and self-critique to improve the product
- V. Understanding the business side of student media, such as advertising, promotions, printing and distribution

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading approximately 250 pages from a textbook, websites and/or handouts, that include:
 - 1. Explanations of what constitutes news, the structure of basic news stories, finding sources, interviewing and writing various types of stories
 - 2. Examples of news stories from professional media that demonstrate good writing, structure, use of sources and style
 - 3. Explanations of media law and ethics: libel, copyright, privacy, photo alternation, naming sources, avoiding conflict of interest and maintaining objectivity
- B. In-class assignments and exercises and a final exam to demonstrate comprehension of journalistic standards and critical thinking as applied to sourcing and writing feature stories
- C. Presenting at least one story as an online presentation, such as a webpage or blog with hyperlinks and graphic elements
 - 1. Writing leads and structuring stories
 - 2. Using Associated Press Style
 - 3. Editing for conciseness
 - 4. Using different styles for broadcast news and online news reporting

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 22B

Course Title: INTERMEDIATE REPORTING/NEWSWRITING

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

This course is a continuation of the introductory newswriting/reporting courses and focuses on coverage of public affairs beats, including local and regional government, police, courts, and school and city boards. Fundamentals in feature writing for newspapers, magazines and other media with instruction and practice in profile, human interest, consumer and interpretive news features. It includes both on- and off-campus reporting and writing/news presentation for a variety of news purposes and through multiple platforms with practical experience in interviewing, writing special story types and revising.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for Foothill student newspaper Online/Print (The Script), authentic learning, vocational training.

Criteria C. Curriculum Standards (please initial as appropriate)

- The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Fine Arts and Communication

JRNL 22B INTERMEDIATE REPORTING/NEWSWRITING

[Edit Course Outline](#)

JRNL 22B

INTERMEDIATE REPORTING/NEWSWRITING

Summer 2018

4 hours lecture, 3 hours laboratory.

5 Units

Total Contact Hours: 84

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 180

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 4

Lab Hours: 3

Weekly Out of Class Hours: 8

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: UC/CSU

Validation: 1/9/18

Division Dean Information -

Seat Count: 30 Load Factor: .137 FOAP Code: 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID: Formerly: JRNL 21A

Need/Justification -

This course helps to support the creation of student generated news on campus. Additionally, it will be included as a required core course for the forthcoming AA degree in Journalism.

1. Description -

This course is a continuation of the introductory newswriting/reporting course (JRNL 22A) and focuses on coverage of public affairs beats, including local and regional government, police, courts, and school and city boards. Fundamentals in feature writing for newspapers, magazines and other media with instruction and practice in profile, human interest, consumer and interpretive news features. It includes both on- and off-campus reporting and writing/news presentation for a variety of news purposes and through multiple platforms with practical experience in interviewing, writing special story types and revising.

Prerequisite: None

Co-requisite: None

Advisory: ENGL 1A or 1AH; not open to students with credit in JRNL 21A.

2. Course Objectives -

The student will be able to:

- A. Demonstrate a basic knowledge of the fundamentals of feature writing and the organization and structure of feature stories
- B. Gather, organize and synthesize information to compile into feature stories, and write these stories under deadline pressure
- C. Prepare feature stories for converging audiences
- D. Create plan for submitting story to freelance market
- E. Employ editing techniques and use journalistic style
- F. Identify and apply fundamental media law concepts, such as libel and privacy rights, and basic freedom of information tools, including public records and open meeting laws
- G. Read and analyze current events news

3. Special Facilities and/or Equipment -

Computer with word processing software and access to the internet, portable tape recorder/camera.

4. Course Content (Body of knowledge) -

- A. Demonstrate a basic knowledge of the fundamentals of feature writing and the organization and structure of feature stories
 1. The news peg
 2. Feature leads
 3. Analysis of examples of good feature writing
 4. Recognizing important, compelling details
 5. Types of features: covering city councils, school boards, courts, police, and other local governmental bodies
 6. Difference between hard news story, soft news or feature story, opinion story
 7. The complex, multi-source feature long form story
- B. Gather, organize and synthesize information to compile into feature stories, and write these stories under deadline pressure
 1. Report and write multiple on- and off-campus public affairs-type stories, such as coverage of local or regional government, public safety, courts and education
 2. Provide innovative story ideas
 3. Gather information from diverse sources
 4. Practice interviewing, note-taking and fact-checking
 5. Research and develop stories
 6. Conduct professional interviews
 7. Organize notes
- C. Prepare feature stories for converging audiences
 1. The profile
 2. The consumer feature
 3. The human interest story
 4. The opinion piece
 5. The me-story (emotional, touching or humorous)
 6. Using social media as a reporting tool
 7. Writing for various publication formats: print, online, multimedia, broadcast, and public relations
 8. Producing stories through audio, video and other multimedia formats
 9. Locate and use diverse human, paper and electronic sources
- D. Create plan for submitting story to freelance market

1. Identify markets for freelance opportunities
2. Write query letter and submit story to appropriate market
3. Unusual and minority markets
4. Produce at least one major assignment utilizing basic multimedia skills, such as taking a photograph or capturing an audio/video interview, and/or employing social media or other emerging technology tools
- E. Employ editing techniques and use journalistic style
 1. Practice revision and copy-editing
 2. Apply AP Style
- F. Identify and apply fundamental media law concepts, such as libel and privacy rights, and basic freedom of information tools, including public records and open meeting laws
 1. Non-sexist, non-biased language
 2. Apply ethics codes and practices
 3. Open meeting laws, public records and freedom of information requests
 4. Other media law concepts: libel and privacy
- G. Read and analyze current events news
 1. Examine the basic concepts and techniques used in broadcast/webcast news and public relations writing

5. **Repeatability** - Moved to header area.

6. **Methods of Evaluation** -

- A. Reporting assignments/projects across multiple platforms
- B. Quizzes/exams
- C. Critiques
- D. Peer critiques
- E. Adherence to professional protocols (meeting deadlines, attendance, adherence to ethics)

7. **Representative Text(s)** -

Examples of Primary Texts and References:

Harrower, Tim. Inside Reporting. 3rd ed. McGraw-Hill, 2012.

Friedlander, Edward Jay, and John Lee. Feature Writing for Newspapers and Magazines: The Pursuit of Excellence. 7th ed. Pearson, 2010.

Knight, Robert M. Journalistic Writing: Building the Skills, Honing the Craft. 3rd ed. Marion Press, 2010.

Williams, Eesha. Grassroots Journalism: A Practical Manual. 2012.

Examples of Supporting Texts and References:

Goldstein, Norm. Associated Press Stylebook and Libel Manual. New York: The Associated Press, 2013.

Arnold, George T. Media Writer's Handbook: A Guide to Common Editing and Writing Problems. 6th ed. McGraw-Hill, 2012.

Kessler, Lauren, and Duncan McDonald. When Words Collide: A Media Writer's Guide to Grammar and Style. 8th ed. Cengage, 2012.

8. **Disciplines** -

Communication Studies OR English OR Journalism

9. **Method of Instruction** -

- A. Lecture and visual aids
- B. Discussion of assigned reading
- C. Discussion and problem solving performed in class
- D. In-class essays
- E. In-class exploration of internet sites
- F. Quiz and examination review performed in class
- G. Homework and extended projects
- H. Guest speakers
- I. Collaborative learning and small group exercises

10. **Lab Content** -

Assist in production of a regular news or feature non-fiction product with a journalism emphasis by and for students and distributed to a campus or community audience. Must include weekly newsgathering activities regardless of publication frequency.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading approximately 250 pages from a textbook, websites and/or handouts that include:
 - 1. Explanation of feature-writing style and leads
 - 2. Suggestions for finding diverse sources
 - 3. Examples of high-quality feature stories from professional media
 - 4. Media ethics and law applied to feature writing and freelance writing
- B. Writing five feature stories, including:
 - 1. A multi-source personal profile
 - 2. An enterprise story demonstrating choice of diverse, reliable sources
 - 3. An entertainment review and/or opinion story
 - 4. A multi-source story that localizes a regional, national or international story
- C. In-class assignments and exercises and a final exam to demonstrate comprehension of journalistic standards and critical thinking as applied to sourcing and writing feature stories
- D. Presenting at least one story as an online presentation, such as a blog or website with links and graphics

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 60

Course Title: EDITORIAL LEADERSHIP FOR STUDENT NEWS MEDIA

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Practical experience in planning, assigning, editing and placing print, video and/or web content as members of the college newspaper, magazine or media staff.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

NOTE: If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE

_____ Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for Foothill student newspaper Online/Print (The Script), authentic learning, vocational training.
--

Criteria C. Curriculum Standards (please initial as appropriate)

_____ The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis _____ **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson _____ **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17 _____

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Fine Arts and Communication

JRNL 60 EDITORIAL LEADERSHIP FOR STUDENT NEWS MEDIA

[Edit Course Outline](#)

JRNL 60

EDITORIAL LEADERSHIP FOR STUDENT NEWS MEDIA

Summer 2018

6 hours laboratory.

2 Units

Total Contact Hours: 72

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 0

Lab Hours: 6

Weekly Out of Class Hours: 0

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Non-Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/6/17

Division Dean Information -

Seat Count: 35 Load Factor: .095 FOAP Code: 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course helps to support the creation of student generated news on campus. Additionally, it will be included as a restricted support course for the forthcoming AA degree in Journalism.

1. Description -

Practical experience in planning, assigning, editing and placing print, video and/or web content as members of the college newspaper, magazine or media staff.

Prerequisite: None

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Apply journalistic skills in assigning, editing and placing content for a student media product, such as a newspaper, magazine or website.
- B. Apply leadership skills to assigning stories and other content and overseeing reporters, photographers, and other content contributors.
- C. Manage content from creation to publication in print or online.

3. Special Facilities and/or Equipment -

- A. A classroom/laboratory equipped as a newsroom: computers with word processing, graphic and page layout software; internet access; cameras; telephones; fax machine; portable recorders; references; basic supplies.
- B. When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address.

4. Course Content (Body of knowledge) -

- A. Apply journalistic skills in assigning, editing and placing content for a student media product, such as a newspaper, magazine or website.
 1. Plan and assign stories to peers (content producers and/or fellow editors).
 2. Complete editing assignments by stated deadlines.
- B. Apply leadership skills to assigning stories and other content and overseeing reporters, photographers, and other content contributors.
 1. Research and create assignments appropriate for student media.
 2. Interact with reporters, photographers and other content providers about content, revisions, and deadlines.
 3. Critique and self-critique editing issues in newspapers, magazines, news websites and/or news broadcasts.
- C. Manage content from creation to publication in print or online.
 1. Apply conventions of journalistic and AP Style.
 2. Follow ethical and legal guidelines in editing content for student news media.
 3. Apply software and web skills in placing and posting content.

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Complete one assignment per week which may include creating assignments, editing and placing content for one or more sections of the student newspaper, website or magazine; comply with deadlines.
- B. Demonstrate leadership among peers (reporters, photographers and other content providers) with clear communication on deadlines and revisions.
- C. Read about and react to issues concerning newsroom leadership and editing using critical thinking skills.
- D. Compile a digital or print portfolio of completed work, including a log of activities with descriptions of learning experiences and time spent on assignments.

7. Representative Text(s) -

Examples of Primary Texts and References:

Associated Press Stylebook and Libel Manual. New York: The Associated Press, 2012.

Harrower, Tim. Inside Reporting. 3rd ed. McGraw-Hill, 2013.

The Script Handbook. Latest ed.

Bowles, Dorothy. Creative Editing. 6th ed. Wadsworth, 2010.

Examples of Supporting Texts and References:

Kanigel, Rachele. The Student Newspaper Survival Guide. 2nd ed. Wiley-Blackwell, 2012.

Yopp, Jan Johnson, et al. Reaching Audiences: A Guide to Media Writing. 5th ed. 2010.

Webster's New World College Dictionary. Recent ed. New York: Macmillian.

8. Disciplines -

Communication Studies OR English OR Journalism

9. Method of Instruction -

Laboratory experience which involves students in formal exercises of news gathering and reporting activities.

10. Lab Content -

Production of a regular news or feature non-fiction product with a journalism emphasis by and for students and distributed to a campus or community audience. Must include weekly newsgathering activities, regardless of publication frequency.

- A. Finding and assigning stories, photos, and graphics for sections, such as news, features, sports and opinions
- B. Copy editing and proofreading
- C. Managing a student newspaper or news website
- D. Responding to reader email, letters, and online comments
- E. Demonstrating proper formats to reporters and photographers
- F. Demonstrating software and web tools to peers
- G. Applying standards, including multiple named sources, adequate lead, spelling, grammar, AP Style
- H. Reformatting and placing photos for print or online presentation
 - I. Choosing and using graphic elements
- J. Using page design software
- K. Understanding and applying copyright law
- L. Understanding ethics and media law as they apply to news websites and social media
- M. Using journalistic standards for cropping and editing photos
- N. Exploring careers in news media
- O. Understanding news staff organization
- P. Exploring entrepreneurial opportunities in news media
- Q. Understanding media law as it applies to broadcast and video journalism
- R. Applying canons of journalism

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Complete one assignment per week which may include creating assignments, editing and placing content for one or more sections of the student newspaper, website or magazine; comply with deadlines.
- B. Demonstrate leadership among peers (reporters, photographers and other content providers) with clear communication on deadlines and revisions.
- C. Read about and react to issues concerning newsroom leadership and editing using critical thinking skills.
- D. Compile a digital or print portfolio of completed work, including a log of activities with descriptions of learning experiences and time spent on assignments.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 61

Course Title: REPORTING FOR STUDENT NEWS MEDIA

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Practical experience contributing as a reporter to the college newspaper and/or digital media as a reporter.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE

_____ Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for Foothill student newspaper Online/Print (The Script), authentic learning, vocational training.
--

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Fine Arts and Communication

JRNL 61 REPORTING FOR STUDENT NEWS MEDIA

[Edit Course Outline](#)

JRNL 61

REPORTING FOR STUDENT NEWS MEDIA

Summer 2018

6 hours laboratory.

2 Units

Total Contact Hours: 72

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 0

Lab Hours: 6

Weekly Out of Class Hours: 0

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Non-Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/6/17

Division Dean Information -

Seat Count: 35 Load Factor: .095 FOAP Code: 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course helps to support the creation of student generated news on campus. Additionally, it will be included as a restricted support course for the forthcoming AA degree in Journalism.

1. Description -

Practical experience contributing as a reporter to the college newspaper and/or digital media as a reporter.

Prerequisite: None

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Communicate with one or more editors to obtain assignments.
- B. Produce and contribute appropriate journalistic assignments to the student media.

3. Special Facilities and/or Equipment -

- A. Varies with assignment, but may include computer with internet access, camera or drawing tools.
- B. When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address.

4. Course Content (Body of knowledge) -

- A. Communicate with one or more editors to obtain assignments.
 - 1. Select assignments from assignment list or discussion with editor(s).
 - 2. Suggest assignments to editor(s).
- B. Produce and contribute appropriate journalistic assignments to the student media.
 - 1. Report and write for the student newspaper, magazine, or related website following ethical and journalistic guidelines.
 - 2. Turn in assignments in appropriate format and within stated deadline.

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Assignments evaluated based on adherence to reporting guidelines and deadline timeliness.
- B. Comprehension tests and a final exam requiring students to identify and demonstrate concepts that have been introduced and studied throughout the course.
- C. Evaluation of log report for completeness.

7. Representative Text(s) -

Examples of Primary Texts and References:

The Script Handbook, Latest ed.

Associated Press Stylebook and Libel Manual, New York: The Associated Press, 2012.

Harrower, Tim. Inside Reporting, 3rd ed. McGraw-Hill, 2013.

Examples of Supporting Texts and References:

Kanigel, Rachele. The Student Newspaper Survival Guide, 2nd ed. Wiley-Blackwell, 2011.

8. Disciplines -

Communication Studies OR English OR Journalism

9. Method of Instruction -

Laboratory experiences which involve students in formal exercises of news gathering and reporting.

10. Lab Content -

Production of a regular news or feature product with a journalism emphasis by and for students and distributed to a campus or community audience. Some suggested possible lab activities leading toward publication might be (options):

- A. Finding stories
- B. Reporting and writing news, feature, opinion and sports stories
- C. Using video equipment, editing video
- D. Using a digital camera and photo editing software
- E. Electronically filing stories, photos and other visual media
- F. Proofreading, copyediting and improving stories
- G. Applying standards, including multiple named sources, adequate lead, spelling, grammar, AP Style
- H. Using design software
 - I. Interviewing for news media
- J. Role of student media on campus
- K. Finding college, expert and real person sources using standard methods, websites and social media
- L. Online and multimedia presentation of stories
- M. Utilizing journalism resources, such as textbooks, guides and websites to improve skills
- N. Understanding and applying ethical standards for news reporting and photojournalism
- O. Understanding and applying ethical standards for news reporting
- P. Understanding news staff organization
- Q. Understanding media law as it applies to journalism
- R. Using software and web programs to present stories
- S. Exploring careers in news media
- T. Exploring entrepreneurial opportunities in news media
- U. Using critique and self-critique to improve the product
- V. Understanding the business side of student media, such as advertising, promotions, printing and distribution

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Identify, propose and complete one approved assignment per week; submit by deadline.
- B. Read about and react to journalistic concepts and issues regarding writing and reporting using critical thinking.
- C. Keep a log of activities, learning experiences and time spent on assignments.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 62

Course Title: DIGITAL PRODUCTION FOR STUDENT MEDIA

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Practical experience contributing as a digital content producer to the college news media.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for Foothill student newspaper Online/Print (The Script), authentic learning, vocational training.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Fine Arts and Communication

JRNL 62 DIGITAL PRODUCTION FOR STUDENT MEDIA

[Edit Course Outline](#)

JRNL 62

DIGITAL PRODUCTION FOR STUDENT MEDIA

Summer 2018

6 hours laboratory.

2 Units

Total Contact Hours: 72

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 0

Lab Hours: 6

Weekly Out of Class Hours: 0

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: AA Degree

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/6/17

Division Dean Information -

Seat Count: 35 **Load Factor:** .095 **FOAP Code:** 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course helps to support the creation of student generated news on campus. Additionally, it will be included as a restricted support course for the forthcoming AA degree in Journalism.

1. Description -

Practical experience contributing as a digital content producer to the college news media.

Prerequisite: None

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Communicate with one or more editors to obtain assignments.
- B. Produce and contribute appropriate journalistic assignments to the student media.

3. Special Facilities and/or Equipment -

- A. Computer with internet access, video camera, basic video editing software.
- B. When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address.

4. Course Content (Body of knowledge) -

- A. Communicate with one or more editors to obtain assignments.
 1. Select assignments from assignment list or discussion with editor(s).
 2. Suggest assignments to editor(s).
- B. Produce and contribute appropriate journalistic assignments to the student media.
 1. Produce content for student news website and social media following ethical and journalistic guidelines.
 2. Turn in assignments in appropriate format and within stated deadline.

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Assignments evaluated for adherence to video reporting guidelines and deadline timeliness.
- B. Comprehension tests and a final exam requiring students to identify and demonstrate concepts that have been introduced and studied throughout the course.
- C. Evaluation of log report for completeness.

7. Representative Text(s) -

Examples of primary texts and references:

The Script Handbook, Latest edition.

The Associated Press Stylebook and Libel Manual, New York: Associated Press, 2012.

Harrower, Tim. Inside Reporting, 3rd ed. McGraw-Hill, 2013.

Examples of supporting texts and references:

Kanigel, Rachele. The Student Newspaper Survival Guide, 2nd ed. Wiley-Blackwell, 2011.

Papper, Robert A. Broadcast News Writing Stylebook, 5th ed. Pearson, 2012.

Kobre, Kenneth. Videojournalism: Multimedia Storytelling, Focal Press, 2012.

8. Disciplines -

Communication Studies OR English OR Journalism

9. Method of Instruction -

Laboratory experiences which involve students in formal exercises of news gathering and reporting.

10. Lab Content -

Production of a regular news or feature product with a journalism emphasis by and for students and distributed to a campus or community audience. Some suggested possible lab activities leading toward publication might be (options):

- A. Finding stories
- B. Reporting and writing news, feature, opinion and sports stories
- C. Using video equipment, editing video
- D. Using a digital camera and photo editing software
- E. Electronically filing stories, photos and other visual media
- F. Proofreading, copyediting and improving stories
- G. Applying standards, including multiple named sources, adequate lead, spelling, grammar, AP style
- H. Using design software
 - I. Interviewing for news media
- J. Role of student media on campus
- K. Finding college, expert and real person sources using standard methods, websites and social media
- L. Online and multimedia presentation of stories
- M. Utilizing journalism resources, such as textbooks, guides and websites to improve skills
- N. Understanding and applying ethical standards for news reporting and photojournalism
- O. Understanding and applying ethical standards for news reporting
- P. Understanding news staff organization
- Q. Understanding media law as it applies to journalism
- R. Using software and web programs to present stories
- S. Exploring careers in news media
- T. Exploring entrepreneurial opportunities in news media
- U. Using critique and self-critique to improve the product
- V. Understanding the business side of student media, such as advertising, promotions, printing and distribution

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Identify and complete one approved assignment per week; submit by deadline.
- B. Read about and react to journalistic concepts and issues using critical thinking.
- C. Keep a log of activities, learning experiences and time spent on assignments.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 64

Course Title: PHOTOGRAPHY FOR STUDENT MEDIA

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Practical experience contributing as a photographer to the college newspaper and/or digital media as a reporter.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE

_____ Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for Foothill student newspaper
Online/Print (The Script), authentic learning, vocational training.

Criteria C. Curriculum Standards (please initial as appropriate)

_____ The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis _____ **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson _____ **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17 _____

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Fine Arts and Communication

JRNL 64 PHOTOGRAPHY FOR STUDENT MEDIA

[Edit Course Outline](#)

JRNL 64

PHOTOGRAPHY FOR STUDENT MEDIA

Summer 2018

6 hours laboratory.

2 Units

Total Contact Hours: 72

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 0

Lab Hours: 6

Weekly Out of Class Hours: 0

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Non-Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/6/17

Division Dean Information -

Seat Count: 35 **Load Factor:** .095 **FOAP Code:** 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course helps to support the creation of student generated news on campus. Additionally, it will be included as a restricted support course for the forthcoming AA degree in Journalism.

1. Description -

Practical experience contributing as a photographer to the college newspaper and/or digital media as a reporter.

Prerequisite: None

Co-requisite: None

Advisory: None

2. Course Objectives -

- A. Communicate with one or more editors to obtain photography assignments.
- B. Produce and contribute appropriate photojournalism assignments to the student media.

3. Special Facilities and/or Equipment -

- A. Computer with internet access, camera.
- B. When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address.

4. Course Content (Body of knowledge) -

- A. Communicate with one or more editors to obtain photography assignments.
 - 1. Select assignments from assignment list or discussion with editor(s).
 - 2. Suggest assignments to editor(s).
- B. Produce and contribute appropriate photojournalism assignments to the student media.
 - 1. Complete photo assignments for the student newspaper, magazine, or related website following ethical and journalistic guidelines.
 - 2. Turn in assignments in appropriate format and within stated deadline.

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Assignments evaluated for adherence to photojournalism guidelines and deadline timeliness.
- B. Comprehension tests and a final exam requiring students to identify and demonstrate concepts that have been introduced and studied throughout the course.
- C. Evaluation of log report for completeness.

7. Representative Text(s) -

Examples of Primary Texts and References:

The Script Handbook, Latest ed.

Associated Press Stylebook and Libel Manual, New York: The Associated Press, 2012.

Harrower, Tim. Inside Reporting, 3rd ed. McGraw-Hill, 2013.

Examples of Supporting Texts and References:

Kanigel, Rachele. The Student Newspaper Survival Guide, 2nd ed. Wiley-Blackwell, 2011.

Kobre, Kenneth. Photojournalism: The Professionals' Approach, 6th ed. Taylor & Francis, 2008.

8. Disciplines -

Communication Studies OR English OR Journalism

9. Method of Instruction -

Laboratory experiences which involve students in formal exercises of news gathering and reporting.

10. Lab Content -

Production of a regular news or feature product with a journalism emphasis by and for students and distributed to a campus or community audience. Some suggested possible lab activities leading toward publication might be (options):

- A. Finding stories
- B. Reporting and writing news, feature, opinion and sports stories
- C. Using video equipment, editing video
- D. Using a digital camera and photo editing software
- E. Electronically filing stories, photos and other visual media
- F. Proofreading, copyediting and improving stories
- G. Applying standards, including multiple named sources, adequate lead, spelling, grammar, AP Style
- H. Using design software
 - I. Interviewing for news media
- J. Role of student media on campus
- K. Finding college, expert and real person sources using standard methods, websites and social media
- L. Online and multimedia presentation of stories
- M. Utilizing journalism resources, such as textbooks, guides and websites to improve skills
- N. Understanding and applying ethical standards for news reporting and photojournalism
- O. Understanding and applying ethical standards for news reporting
- P. Understanding news staff organization
- Q. Understanding media law as it applies to journalism
- R. Using software and web programs to present stories
- S. Exploring careers in news media
- T. Exploring entrepreneurial opportunities in news media
- U. Using critique and self-critique to improve the product
- V. Understanding the business side of student media, such as advertising, promotions, printing and distribution

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Identify, propose and complete one approved photography assignment per week; submit by deadline.
- B. Read about and react to journalistic concepts and issues regarding photography, using critical thinking.
- C. Keep a log of activities, learning experiences and time spent on assignments.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: JRNL 70R, 71R, 72R, 73R (series)

Course Title: INDEPENDENT STUDY IN JOURNALISM

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Provides an opportunity for the student to expand their studies in Journalism beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Journalism

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

Workforce/Transfer Plan in Development: Will apply this year (2018) for next (2018-19)

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

Citizenship, community building, provides functional support for Foothill student newspaper
Online/Print (The Script), authentic learning, vocational training.

Criteria C. Curriculum Standards (please initial as appropriate)

- The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Brian Lewis **Date:** 12/26/17

Division Curriculum Representative: Mark Anderson **Date:** 1/10/18

Date of Approval by Division Curriculum Committee: 12/12/17

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Fine Arts and Communication

JRNL 70R INDEPENDENT STUDY IN JOURNALISM

[Edit Course Outline](#)

JRNL 70R

INDEPENDENT STUDY IN JOURNALISM

Summer 2018

3 hours laboratory per week.

1 Unit

Total Contact Hours: 36

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 36

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 0

Lab Hours: 3

Weekly Out of Class Hours: 0

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/6/17

Division Dean Information -

Seat Count: 35 Load Factor: .000 FOAP Code: 114000143131060100

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course provides the student an opportunity to expand on topics beyond the classroom.

1. Description -

Provides an opportunity for the student to expand their studies in Journalism beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

Prerequisite: None

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Plan an independent study project in Journalism.
- B. Conduct the study by means of literature research, fieldwork, or laboratory work, or other means mutually agreed upon in the student-faculty contract as appropriate for the discipline.
- C. Present the results of the study in a written or oral report or by some other means as determined by the contract.

3. Special Facilities and/or Equipment -

Not applicable.

4. Course Content (Body of knowledge) -

This course is based on independent research or course of study related to the topics outlined in the student contract.

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

Evaluation is based on the completion of the scope of work described in the student-faculty contract.

7. Representative Text(s) -

Texts will vary with content.

8. Disciplines -

Communication Studies OR English OR Journalism

9. Method of Instruction -

Independent study as defined in the student-faculty contract.

10. Lab Content - No content

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

This course requires research, analysis, field study, portfolio or other independent assignments of an agreed upon college-level subject.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Credit Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course.

In short, the State wants us to deliberate carefully before adding a course that does not help students complete a degree or certificate. If it doesn't help them complete a State approved program of study, why are we offering the course?

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Course #: LINC 77

Course Title: Design Thinking Overview

Catalog Description:

Students learn an overview of the design thinking methodology and its applications in education, business, industry and government. Focus is on introducing all aspects of the design cycle through inquiry-based facilitation and engaging immersive activities to develop understanding of the design thinking process.

Are you requesting Stand Alone Approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate of achievement, nor to the Foothill GE pattern
- The course will only be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate of achievement that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Makerspace Specialist

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

It is in development and should be submitted by May 15, 2018.

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following five criteria:

Criteria A. Appropriateness to Mission

California Education Code §66010.4 identifies the two primary missions for California Community Colleges, and one secondary mission that pertains to credit coursework:

1. Primary: offer academic and vocational instruction at the lower division level; and
2. Primary: to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous work force improvement.
3. Secondary: provision of remedial instruction for those in need of it and, in conjunction with the school districts, instruction in English as a second language, and support services which help students succeed at the postsecondary level.

Briefly explain how this course is consistent with one (or more) of these missions:

Offers academic and vocational instruction to those interested in working in education, government, business, and/or industry. The best case uses for design thinking include solving complex problems and finding desirable solutions for future clients.

NOTE: Courses must address a valid transfer, occupational or basic skills purpose rather than primarily a vocational or recreational purpose. Courses must not provide only an activity or service without instructional content (e.g., assistive or therapeutic activity, use of college facilities or resources without specific instructional objectives, or assessment testing).

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area.

If you identified your course as intending to meet the CCC mission of preparation for **transfer**, we must demonstrate that the course is transferable. **Please attach the ASSIST documentation** to this application. (Ask the Articulation Officer for assistance if necessary.)

Attachments:

- Academic Research: What is Design Thinking and Why Is It Important? – Rim Razzouk, Valerie Shute, Florida State University
- Article: The Importance of Design Thinking – Aaron Shapland, Business 2 Community
- Job listing: Indeed.com: Design Thinking; Los Altos, CA: Current Openings: 1,731

For courses that are **primarily occupational**, or that respond to economic development interests, need must be demonstrated within the service area of the college. Examples of the types of evidence of occupational need that may be submitted include:

- Statistical projections of growth in specific jobs by county (or labor market area) from the Employment Development Department’s Labor Market Information system
- Employer surveys
- Industry studies
- Regional economic studies
- Letters from employers
- Minutes of industry advisory committee meetings
- Job advertisements, from newspapers or the Internet
- Newspaper or magazine articles on industry or employment trends
- Studies or data from licensing agencies or professional associations

Please attach appropriate evidence to this application form.

Criteria C. Curriculum Standards (please initial as appropriate)

- ld _____ The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5
- _____ This is a non-degree applicable credit course (specify which one, below)
- _____ non-degree applicable basic skills course
- _____ course to enable students to succeed in degree-applicable credit courses (e.g., college orientation and guidance courses, discipline-specific preparatory courses)
- _____ pre-collegiate career technical preparation course to provide foundation skills for students preparing for entry into degree-applicable credit courses

Criteria D. Adequate Resources (please initial as appropriate)

- ld _____ This course will be administered in the same manner as existing courses in terms of funding, faculty, facilities and equipment

Criteria E. Compliance (please initial as appropriate)

- ld _____ The design of the course is not in conflict with any law particularly in regard to enrollment restrictions and licensing or accreditation standards

Faculty Requestor: Lisa DeLapo **Date:** 10/25/17

Division Curriculum Representative: Bill Ziegenhorn **Date:** 12/1/17

Date of Approval by Division Curriculum Committee: 12/1/17

College Curriculum Co-Chairperson: _____ **Date:** _____

See discussions, stats, and author profiles for this publication at:
<https://www.researchgate.net/publication/258183173>

What Is Design Thinking and Why Is It Important?

Article *in* Review of Educational Research · September 2012

DOI: 10.3102/0034654312457429

CITATIONS

92

READS

20,342

2 authors, including:



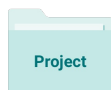
Valerie J. Shute

Florida State University

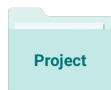
147 PUBLICATIONS **4,677** CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Adaptive assessment and learning environments [View project](#)



Open Student Models [View project](#)

All content following this page was uploaded by [Valerie J. Shute](#) on 20 May 2014.

The user has requested enhancement of the downloaded file.

What Is Design Thinking and Why Is It Important?

Rim Razzouk, Valerie Shute
Florida State University

Design thinking is generally defined as an analytic and creative process that engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign. Several characteristics (e.g., visualization, creativity) that a good design thinker should possess have been identified from the literature. The primary purpose of this article is to summarize and synthesize the research on design thinking to (a) better understand its characteristics and processes, as well as the differences between novice and expert design thinkers, and (b) apply the findings from the literature regarding the application of design thinking to our educational system. The authors' overarching goal is to identify the features and characteristics of design thinking and discuss its importance in promoting students' problem-solving skills in the 21st century.

KEYWORDS: design thinking, design process, expertise, expert and novice.

Being successful in today's highly technological and globally competitive world requires a person to develop and use a different set of skills than were needed before (Shute & Becker, 2010). One of these skills is called design thinking. Design has been widely considered to be the central or distinguishing activity of engineering (Simon, 1996). It has also been said that engineering programs should graduate engineers who can design effective solutions to meet social needs (Evans, McNeill, & Beakley, 1990). Like problem solving, design is a natural and ubiquitous human activity. Needs and dissatisfaction with the current state combined with a determination that some action must be taken to solve the problem is the start of a design process. In this view, many scientists have been designing and acting as designers throughout their careers, albeit often not being aware of or recognizing that they are performing in a design process (Braha & Maimon, 1997).

According to Braha and Maimon (1997), engineering lacks sufficient scientific foundations. Historically, engineering curricula have been based on models that are devoted to basic science, where students apply scientific principles to technological problems. However, this practice produces engineering graduates who were perceived by industry and academia as being unable to practice in industry. This concern caused leaders of engineering departments and colleges to recognize

the intellectual complexities and resources demanded to support good design education (Todd & Magleby, 2004). This awareness has resulted in the improvement of existing courses to include industry-sponsored projects where companies provide real problems along with real-world expertise (Bright, 1994; Dutton, Todd, Magleby, & Sorensen, 1997).

Design thinking has also started to receive increased attention in business settings. This is because the design of products and services is a major component of business competitiveness, to the extent that many known companies have committed themselves to becoming design leaders (Dunne & Martin, 2006). And although design thinking has become an integral part of the design and engineering fields as well as business, it can also have a positive influence on 21st century education across disciplines because it involves creative thinking in generating solutions for problems. That is, in academic environments, students are required to read critically, think and reason logically, and solve complex problems (Rotherham & Willingham, 2009). Thus, to help students succeed in this interconnected, digital world we live in, educators should support students in developing and honing 21st-century skills (e.g., design thinking, systems thinking, and teamwork skills) that enhance their problem-solving skills and prepare them for college and career (Rotherham & Willingham, 2009; Shute & Torres, 2012).

These skills are consistent with the theoretical traditions of situated cognition (Lave & Wenger, 1991), developmental theories (Piaget, 1972), and constructivism (Bruner, 1990). What's new is the growing extent to which individual and collective success is seen as depending on having such skills. In addition to business settings, design thinking has received a lot of attention in engineering, architecture, and design majors in universities because it can change how people learn and solve problems (e.g., Dym, Agogino, Eris, Frey, & Leifer, 2005; Fricke, 1999; Nagai & Nagouchi, 2003). The topic of expertise in design has also been receiving increasing attention in design research. In support of these claims, consider the large number of research articles published on the topic of design thinking (e.g., Do & Gross, 2001; Goldschmidt & Weil, 1998; Owen, 2007; Stempfle & Badke-Schaube, 2002; Tang & Gero, 2001). Among these research papers, there are studies of expert or experienced designers and comparisons of the processes of novice versus expert designers (e.g., Cross & Cross, 1998; Ericsson & Smith, 1991; Ho, 2001). Within this large body of design thinking research, experimental and quasi-experimental studies are lacking. Most, if not all of the studies are qualitative.

Goals and Focus

The dual aims of this article are to (a) summarize findings from the literature of design thinking to gain better understanding of its characteristics, processes, and differences between novice and expert design thinkers and (b) apply the findings from the literature regarding design thinking to our educational system. Our overarching goal is to identify the features and characteristics of design thinking and show its importance in promoting students' problem-solving skills needed to succeed in the 21st century. The major questions addressed in this review include (a) What are the characteristics of design thinking, (b) what are the differences between a novice and an expert design thinker, and (c) why is design thinking important?

TABLE 1*Databases used in searching for articles*

Database and Web sites	Description
ERIC	A database that provides extensive access to education-related literature from the following two printed journals: <i>Resources in Education (RIE)</i> and <i>Current Index to Journals in Education (CIJE)</i> .
JSTOR	A database of back issues of core journals in the humanities, social sciences, and sciences. The gap between the most recently published issue of any journal and the date of the most recent issue available in JSTOR is from 2 to 5 years.
ScienceDirect	One of the largest online collections of published scientific research. It is operated by the publisher Elsevier and contains nearly 10 million articles from over 2,500 journals and over 6,000 e-books, reference works, book series, and handbooks.
IEEE Xplore	A database that indexes, abstracts, and provides full-text for articles and papers on computer science, electrical engineering, and electronics. The database mainly covers material from the Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Engineering and Technology (IET). The IEEE Xplore database contains over 2 million records.
Google Scholar	Google Scholar was employed to search for and acquire specific references. Google Scholar is a Web site providing peer-reviewed papers, theses, books, abstracts, and articles from academic publishers, professional societies, preprint repositories, universities, and other scholarly organizations.

Method

Many articles in the design thinking literature were identified and then collected. Table 1 lists and describes the online databases and Web sites that were employed in this search-collection effort. The focus of the search was to access full-text documents using various search terms or keywords such as *design thinking*, *design cognition*, *design behavior*, *design studying*, *design reasoning*, *design process*, *thinking of design*, *visual thinking*, and *prototyping*. The search was not limited to a particular date range or experimental studies. However, slight preference was given to more recent research. In all, approximately 150 documents were collected. From this set, a total of more than 45 documents met the criteria for inclusion in the literature review. The inclusion criteria consisted of topical relevancy of documents to the research questions in this article (e.g., design thinking characteristics and processes, novice vs. expert design thinker, and the importance of design thinking). Both experimental and nonexperimental studies were included in this article.

Literature Review

Many authors have written about the nature of and different processes underlying the design thinking process (e.g., Liu, 1996; Owen, 2007; Stempfle & Badke-Schaube, 2002). We now present our review of the literature of this area, starting with a description of the nature of design thinking, its characteristics, and processes. Next, we present literature regarding expertise, expert versus novice design thinkers, and expertise in design. We then present our design thinking model adapted from Shute and Torres (2012). Finally, we discuss the findings from the literature, showing the importance of design thinking and providing suggestions for future research.

Nature of Design Thinking

In many fields, knowledge is generated and accumulated through action (i.e., doing something and evaluating the results). That is, knowledge is used to produce work, and work is evaluated to produce knowledge. Creative people tend to work in two different ways: either as finders or as makers (Owen, 2007). Finders demonstrate their creativity through discovery. They are driven to understand and to find explanations for phenomena not well understood. Makers are equally creative, but they are driven to synthesize what they know in new constructions, arrangements, patterns, compositions, and concepts. Given the fundamental process differences between how finders and makers think and work, other factors might similarly reveal differences among professional fields and therefore help to define the nature of design thinking. One such factor is the content with which a field works.

A conceptual map can be drawn to represent both content and process factors (Figure 1). Two axes define the map. Separating the map into left and right halves is an analytic/synthetic axis that classifies fields by process (i.e., the way they work). Fields on the left side of the axis are more concerned with finding or discovering; fields on the right are concerned with making and inventing. A symbolic/real axis divides the map into halves vertically. Fields in the upper half of the map are more concerned with the abstract, symbolic world, as well as the institutions, policies, and language tools that enable people to manipulate information, communicate, and live together. Fields in the lower half are concerned with the real world and the artifacts and systems necessary for managing the physical environment (Owen, 2007).

Four quadrants result from this division. The first is *analytic/symbolic*, which includes fields like science that are heavily analytic in their use of process and their content is more symbolic than real in that subject matter is usually abstracted in its analyses. The second quadrant is *synthetic/symbolic*, which includes fields that are concerned extensively with the symbolic content and synthetic processes. For instance, law falls in this quadrant because it is concerned with the symbolic content of policies and social relationships, and most of its disciplines are concerned with the creation of laws. The third quadrant is *analytic/real*, which on the content scale involves reality and on the process scale is strongly analytic. Medicine, for example, falls into this quadrant because it is highly concerned with real problems of human health and diagnostic processes are its primary focus. The fourth is *synthetic/real*, which involves fields, such as design, that include synthesis processes and real content (Owen, 2007).

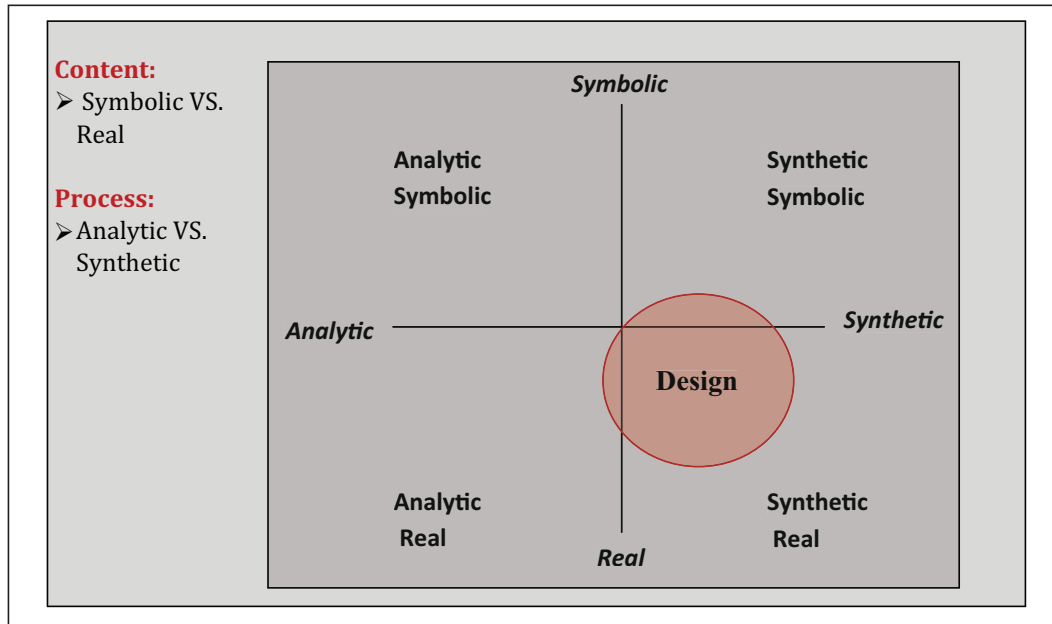


FIGURE 1. *Conceptual representation of content and process factors.*
 Note. Adapted from “Design Thinking: Notes on Its Nature and Use,” by C. Owen, 2007. *Design Research Quarterly*, 2(1), 16–27.

In this mapping (represented by a circle), design falls in the fourth quadrant because it is highly synthetic and strongly concerned with real-world subject matter. However, because disciplines of design deal with communications and symbolism, design has a symbolic component, and because design requires analysis to perform synthesis, there is also an analytic component (Owen, 2007).

It is important to note that a case can be made for the positioning of any field to the left or the right of the map. However, mapping fields is relative and not absolute, which is important because this mapping provides a means for comparing the relationships among different fields with respect to the two dimensions: content and process. Each of the four quadrants in this figure is important in education because we want our students to develop higher-order thinking skills and be able to analyze, synthesize, innovate, and thus readily deal with real-world problems.

According to Hatchuel and Weil (2009), design can be modeled as a relationship between two interdependent spaces with different structures and logic: the space of concepts (C) and the space of knowledge (K). Space K contains all established knowledge available for designers, while Space C includes concepts that are neither true nor false in K about an object. Design proceeds in a step-by-step partitioning of C-sets until a partitioned C-set becomes a K-set, that is, a set of objects, well defined by a true proposition in K. Thus, for Hatchuel and Weil, design is a reasoning activity that starts with a concept about a partially unknown object and attempts to expand it into other concepts and/or new knowledge.

At its core, design thinking refers to how designers *see* and how they consequently *think* (Liu, 1996). It is an iterative and interactive process where designers (a) see what is there in some representation of problem-solving concepts/ideas, (b) draw relations between ideas to solve the problem, and (c) view what has been

drawn as informing further design efforts (Do & Gross, 2001; Lloyd & Scott, 1995). Designing often begins with a diagrammatic depiction that is gradually transformed to more complex graphic representations by adding detail. These design diagrams facilitate the designer's reflection, dialogue, and self-critique and therefore serve the purpose of representing and testing the designer intent. In other words, diagrams serve as a primary vehicle for thinking and solving problems (Do & Gross, 2001; Nagai & Noguchi, 2003).

Braha and Reich (2003) viewed the design process as a generic process where designers modify either the tentative or current design or the requirements and specifications, based on new information that has become available. This ongoing process of modification is performed in order to remove discrepancies and establish a fit between the problem space, expressed through requirements and specifications, and the proposed design solution.

In 2000, Suwa, Gero, and Purcell argued that designing is a situated act, which means that designers invent design issues or requirements in a way that is situated in the environment in which they design. The authors found a strong bidirectional correlation between unexpected discoveries and the invention of issues and requirements. Unexpected discoveries are those instances when a designer perceives something new in a previously drawn element of a solution concept. Not only do unexpected discoveries become the driving force for the invention of issues or requirements, but also the occurrence of invention tends to cause new unexpected discoveries. These results emphasize the importance of rapid alternation between different modes of activity during the design process (e.g., drawing sketches and conceiving of design issues or requirements that are dynamically related to one another). This also explains the opportunistic nature of design activity, as the designer pursues issues and requirements in an evolving solution concept.

According to Dorner (1999), several forms of thinking can be observed in designing. Design starts as a cloudy idea about how the design/product should look like and how it should work. With time, this idea crystallizes and transforms into a clear and complete image of the product. The cloudy idea comes from something that the designer already knows about the product. This knowledge can be a source of analogies. The second form of thinking involves the sketches and models that bring the cloudy idea to a more concrete form. Sketches and models clarify the characteristics of the product, helping to form a specific line of thought that facilitates the development process and forms the basis for the design thinking process. The third form of design thinking is the "picture-word cycle," which involves putting ideas into words that helps the designer clarify and elaborate on ideas. However, whatever the form of thinking, the design thinker should demonstrate specific characteristics in addition to creativity.

Characteristics of a Design Thinker

Table 2 summarizes some of the design thinker characteristics that Owen (2007) described. Although the nature of design thinking and what makes one person a design thinker and another not remain elusive, a number of characteristics have been identified and can be useful in understanding how a design thinker thinks and approaches issues. These characteristics are also helpful in understanding the nature of design thinking. In addition to these characteristics that a design thinker should possess, there are several processes underlying the design thinking process.

TABLE 2
Design-thinker characteristics

Characteristics	Description
Human- and environment-centered concern	Designers must continually consider how what is being created will respond to human needs. They should also consider environmental interests at a level with human interests as primary constraints for the design process.
Ability to visualize	Designers work visually (i.e., depiction of ideas).
Predisposition toward multifunctionality	Designers should look at different/multiple solutions to a problem and keep the big picture of the problem in mind while focusing on its specifics.
Systemic vision	Designers should treat problems as system problems with opportunities for systemic solutions involving different procedures and concepts to create a holistic solution.
Ability to use language as a tool	Designers should be able to verbally explain their creative process forcing invention where detail is lacking and expressing relationships not obvious visually (i.e., explanation should go hand in hand with the creative process).
Affinity for teamwork	Designers need to develop interpersonal skills that allow them to communicate across disciplines and work with other people.
Avoiding the necessity of choice	Designers search competing alternatives before moving to choice making or decision making. They try to find ways to come up with new configurations. This process leads to a solution that avoids decision and combines best possible choices.

Processes in Design Thinking

According to Braha and Reich (2003), the design process is characterized by being iterative, exploratory, and sometimes a chaotic process. It starts from some abstract specifications, or what Hatchuel and Weil (2009, p. 182) call a “brief,” and terminates with the description of a product while gradually refining the product specifications. Intermediate states of the design process might include conflicting specifications and product descriptions. Specifications may change in reaction to proposals or to unexpected problems discovered during the process. In this case, design follows cycles of mutual adjustment between specifications and solutions until a final solution is reached (Hatchuel & Weil, 2009).

During the design process, designers engage in several different cognitive processes. Kolodner and Wills (1996) specified three processes required in design

thinking: (a) preparation, (b) assimilation, and (c) strategic control. In the preparation process, designers need to learn what to focus on and what is relevant. During this phase, the specifications and constraints of the problem, reinterpretation of ideas, visualization, problem reformulation (including situation assessment and elaboration), and others evolve. The assimilation process involves making sense of the proposed solution, data, and observations coming from the design environment, such as feedback from experiments with prototypes. In the strategic control process, designers must make many decisions over the course of a design (e.g., which idea to elaborate or adapt next, which constraints to relax, how to set priorities). They also move among various tasks, subproblems, and design processes in a flexible and highly opportunistic manner.

In 2002, Stempfle and Badke-Schaube examined a theory of what design teams actually do while designing. They looked at theories of creativity and problem solving and cognitive theories of human decision making. The basic elements of design thinking that the authors proposed as cognitive operations to deal with any kind of problem were generation, exploration, comparison, and selection. The first two elements (generation and exploration) widen a problem space whereas the last two (comparison and selection) narrow a problem space. When widening a problem, solutions are generated and then examined in relation to the goal. Then, in an iterative process, solutions may be modified or new solutions may be developed until an optimal solution is found. Narrowing a problem entails comparing two or more ideas and then selecting the solutions based on specific and relevant goal criteria. These elements represent a model that can be applied to understand designers' thinking while working in a team. Designers working in groups have to communicate what they are thinking, thus showing their basic thinking processes.

The researchers applied this model to three mechanical engineering teams consisting of four to six students. The teams were assigned to design a mechanical concept for an optical device to project images of celestial objects. The teams interacted with a simulated customer at three fixed points in time during their one-day working period. Team communication was recorded. Results from protocol analysis revealed that the teams spent only 10% of their time on clarifying the goal and spent the remaining 90% of the time planning a solution.

The Stempfle and Badke-Schaube (2002) findings described differ from those observed by McNeill, Gero, and Warren (1998) in electronics engineers. McNeill and colleagues reported that across the whole design episode, the designers spent most of their time analyzing the problem; synthesizing the solution took the second greatest amount of time, and the remaining time was spent on the evaluation of the solution. The authors concluded that a designer begins a conceptual design session by analyzing the functional aspects of the problem. As the session progresses, the designer focuses on the three aspects—function, behavior, and structure—and then engages in a cycle of analysis, synthesis, and evaluation. Toward the end of the design session, the designer's activity is focused on synthesizing structure and evaluating the structure's behavior. Similarly, in a team of three industrial designers, Goldschmidt and Weil (1998) found that the process of design thinking is nonlinear and that designers follow a forward (breaking down) and backward (validating) reasoning strategy. Although research is not consistent about how time is spent during the design thinking process, findings indicate that there is a learning

progression during the design thinking process that eventually transforms a novice into an expert design thinker.

Expertise

Expertise is the result of a dedicated application to a specific field of interest (Cross, 2004). According to Ericsson, Krampe, and Tesch-Romer (1993), deliberate practice guided toward improvement of performance is necessary to reach high levels of performance and the acquisition of expertise. Ericsson et al. added that the achieved level of performance of an expert is closely related to the accumulated amount of practice. Therefore, the development of expertise passes through different phases. Something happens in the development from being a novice to becoming an expert.

The major difference between experts and novices is that experts have accumulated a large number of examples of problems and solutions in a specific domain of interest. A key competency of an expert is the ability to mentally stand back from the specifics of the accumulated examples and form more abstract conceptualizations related to their domain of expertise (Akin & Akin, 1996; Ho, 2001). Experts are believed to be able to store and access information in larger cognitive chunks than novices can and to recognize underlying principles rather than focusing on the surface features of problems (Dorner, 1999; Nigel, 2004; Purcell & Gero, 1996; Suwa et al., 2000). Therefore, the accumulation of experience is critical in the transformation from a novice to an expert.

In many areas, like sports and music, the benefits of dedicated practice are well known and there are established programs of training for novices to help them gain experience and expertise over time (Cross, 2004). It may be beneficial in other areas as well to focus on the transformational phases (i.e., novice through expert), such as in design thinking. In design education, there are well-established practices that are presumed to help the development from novice to expert, but there is still little understanding of the differences between novice and expert performance in design.

Novice Versus Expert Design Thinker

In general, a good designer should be able to flexibly use different problem-solving strategies and choose the one that best meets the requirements of the situation (Akin & Akin, 1996; Eisentraut, 1999; Weth, 1999). Regardless of the given problem, successful designers clarify requirements, actively search for information (i.e., critically check given requirements and question their own requirements), summarize information of the problem into requirements and partially prioritize them, and do not suppress first solution ideas (Badke-Schaub, 1999; Fricke, 1999).

According to Nigel (2004), novice behavior is usually associated with a depth-first approach to problem solving, that is, identifying and exploring sub-solutions in depth and sequentially. The strategies of experts are usually regarded as being predominantly top-down, breadth-first approaches. The expert designer uses explicit problem decomposing strategies, which the novice designer does not possess. In 2001, Ho examined the search strategies used by expert and novice designers in solving problems in industrial design. Using protocol analysis, the researcher found that the novice participant focused only on the surface level without decomposing the problem, while the expert used explicit problem decomposing

strategies. However, both expert and novice used similar bottom-up (working-backward) problem-solving strategies.

Christiaans and Dorst (1992) conducted protocol studies of junior and senior college students in an industrial design course. They found that some students, mostly the juniors, got trapped gathering information rather than progressing to solution generation, but most of the senior students did not face this difficulty. That is, senior design students did not gather as much information, but they were able to solve the given problem. They asked for less information, processed it directly, and built up an image of the problem. They also prioritized activities early in the process.

A similar finding was reported by Gunther and Ehrlenspiel (1999), who conducted a set of experiments with a total of 20 novice and expert designers of mechanical devices. The researchers found that experts were able to clarify a task in a shorter time, whereas novices had to invest much more time in clarification. These findings (i.e., Christiaans & Dorst, 1992; Gunther & Ehrlenspiel, 1999) corroborate findings from Atman, Chimka, Bursic, and Nachtman (1999), who conducted protocol analysis studies of engineering students. They found that novices (i.e., freshmen with no design experience) spent a large portion of their time defining the problem and did not produce high-quality designs. Therefore, and similar to the industrial design students in the Christiaans and Dorst (1992) study, some of the freshmen engineering students in the Atman et al. study were stuck at the level of defining the problem, which hindered their progress in the design process. However, senior students defined the problem adequately, which in turn resulted in good designs.

Ahmed, Wallace, and Blessing (2003) studied differences between the behaviors of novice and experienced designers in engineering. The authors found clear differences between the behavior of new graduate entrants (i.e., novices) to the engineering design profession and experienced designers. The novices used trial-and-error techniques of generating and implementing a design modification, evaluating it, and then generating another evaluation through several iterations. Experienced engineers, however, made a preliminary evaluation of their tentative design decisions before implementing them and making a final evaluation. In contrast to the novices' trial-and-error approach, the experienced designers employed integrated design strategies.

In 2001, Seitamaa-Hakkarainen and Hakkarainen investigated the relationships between visual and technical designing using qualitative analysis. That is, they examined differences between two novices and two experts in the field of weaving design. Protocol analysis results revealed that the experts integrated the visual elements (e.g., color, size, patterns) and technical elements (e.g., material) of weaving, and generally considered them in a parallel way during the design process. Iteration between the visual and the technical space was a significant aspect of the experts' design process. The experts continuously moved from one design space to another to carry out very detailed processes of search for design solutions. In contrast, the novices organized their process around the composition space and rarely moved to the construction space to explore how visual ideas could be realized in weaving.

Similarly, using data from protocol studies, Kavakli and Gero (2002) compared the cognitive performances/actions (i.e., looking, perceptual and functional

actions, and goals) of a novice and an expert architect. Using protocol analysis, the researchers investigated concurrent cognitive actions of designers and found significant differences in output between novice and expert designers. The protocol was divided into segments. A cognitive segment consisted of cognitive actions that appeared to occur simultaneously. They found that the design protocol of the expert included 2,916 actions (i.e., chunks) and 348 segments, whereas the novice's protocol included 1,027 actions and 122 segments. Each segment consisted of 8 cognitive actions on average. Considering that the same amount of time was given to both participants, the expert's design protocol was 2.8 times as rich as the novice's in terms of actions. There were also 2.8 times as many segments in the expert designer's session as in the novice's. Therefore, the expert had more overall fluency in relation to divergent thinking skills. The expert's cognitive actions continuously rose throughout the activity, while the novice's cognitive activity started at a peak and then declined. The authors also found that the expert seemed to have more control of his cognitive activity compared to the novice. Because the expert's cognitive actions are well organized, he was able to govern his performance more efficiently than the novice.

These findings align with those by Tang and Gero (2001), who found substantial differences between a novice and an expert architect. Using a retrospective protocol analysis, the authors found differences between the novice and expert designers in relation to four design levels: (a) the *physical* level, which refers to the instances that have direct relevance to the external world, comprising drawing and looking actions; (b) the *perceptual* level, which concerns the instances of attending to visual-spatial features/relationships in an automatic perceptual mechanism; (c) the *functional* level, which relates to the instances of functional references mapped between visual-spatial features/relationships and abstract concepts, including meanings and functions; and (d) the *conceptual* level, which represents the instances that process abstract concepts and the instances that process physical and perceptual actions. The expert seemed to create more meaning at the physical and perceptual levels than the novice.

Differences between novices and experts performing design-related problems were also studied by Göker (1997). The author examined novices and experts on a task involving computer-simulated construction of machines. Göker found that the experts, skilled in the use of computer simulations, did not reason toward a design concept in an abstract way, but relied more on their experience and visual information. In contrast, novices depended more on abstract reasoning.

Experts During the Design Process

Expert designers solve complex problems more easily than novices (Cross, 2004). During a conceptual design process, experienced designers do not just synthesize solutions that satisfy given requirements, they also invent design issues or requirements that capture important aspects of a given problem that assist in solving the problem at hand (Liu, 1996). From protocol studies of experienced engineering designers, Lloyd and Scott (1994) found that the manner by which experts approach a problem is related to the degree and type of previous experience. More experienced designers tend to use generative reasoning (i.e., an inductive approach) compared to less experienced designers who employ more deductive reasoning (depth-first approach). In other words, designers with specific experiences related

to the problem type approached the design task through solution assumptions/conjectures instead of problem analysis. This hypothesis suggests that experience in a specific problem type enables designers to perceive the design problem in terms of relevant solutions that they have previously encountered.

Designers also tend to change goals and constraints as they design. They are flexible in selecting and trying different solutions. However, when designers face unexpected difficulties and/or shortcomings in the solution concept, they tend to stick to their principal solution concept as long as possible through the design process. For instance, from case studies of professional architectural designers, Rowe (1987) observed that the designers' choices for problem-solving directions were influenced by their initial design ideas. Furthermore, the designers made every effort to make these ideas work whenever a problem was encountered, rather than adopting a new idea.

And although this fixedness proclivity may sound maladaptive, Ullman, Dietterich, and Stauffer (1988) observed the same phenomenon in their protocol studies of experienced mechanical engineering designers. Ullman and colleagues found that experienced designers typically pursued only one design proposal. And even when major problems had been identified, the designers preferred to modify the initial proposal rather than rejecting it and developing a new one. Likewise, Ball, Evans, and Dennis (1994) drew a similar conclusion from their studies of senior electronic engineers conducting real-world projects. The researchers stated that when the designers generated a less than satisfactory solution, they refused to discard the original solution or spend time and effort coming up with an alternative one. Rather, they tended to improve the solution by developing different versions until a workable solution was achieved. Again, the designers indicated a fixation behavior on initial concepts (Ball et al., 1994). Nonetheless, adherence to initial concepts seems to comprise normal expert design behavior. Finally, in a study of experienced software designers, Guindon (1990) also found that designers came to a solution very early in the session and quickly rejected alternative solutions.

Since a problem cannot be fully understood in isolation, expert designers use conjectures as a means of helping them to explore and understand the formulation of the problem. From protocol studies of experienced industrial designers, Dorst and Cross (2001) asserted that the designers start by exploring the problem and find, discover, or recognize a partial structure. Afterwards, they use this partial structure to generate initial ideas for the form of a design concept, then expand and develop the partial structure. Thus, their goal is to create a matching solution to the problem. Having more than one solution concept should stimulate a more comprehensive evaluation and understanding of the problem (Cross, 2004). From the analysis and synthesis of the literature, it appears that there are a number of competencies that designers should acquire and hone. The more experience a designer builds in these competencies, the more he or she advances along the novice-expert continuum.

Design Thinking Competency Model

As a result of this review of the literature, we have created a design thinking competency model (Figure 2), adapted from Shute and Torres (2012). This model displays a hierarchically arrayed set of variables (or nodes), from general to more specific when viewing from left to right. This competency model represents an

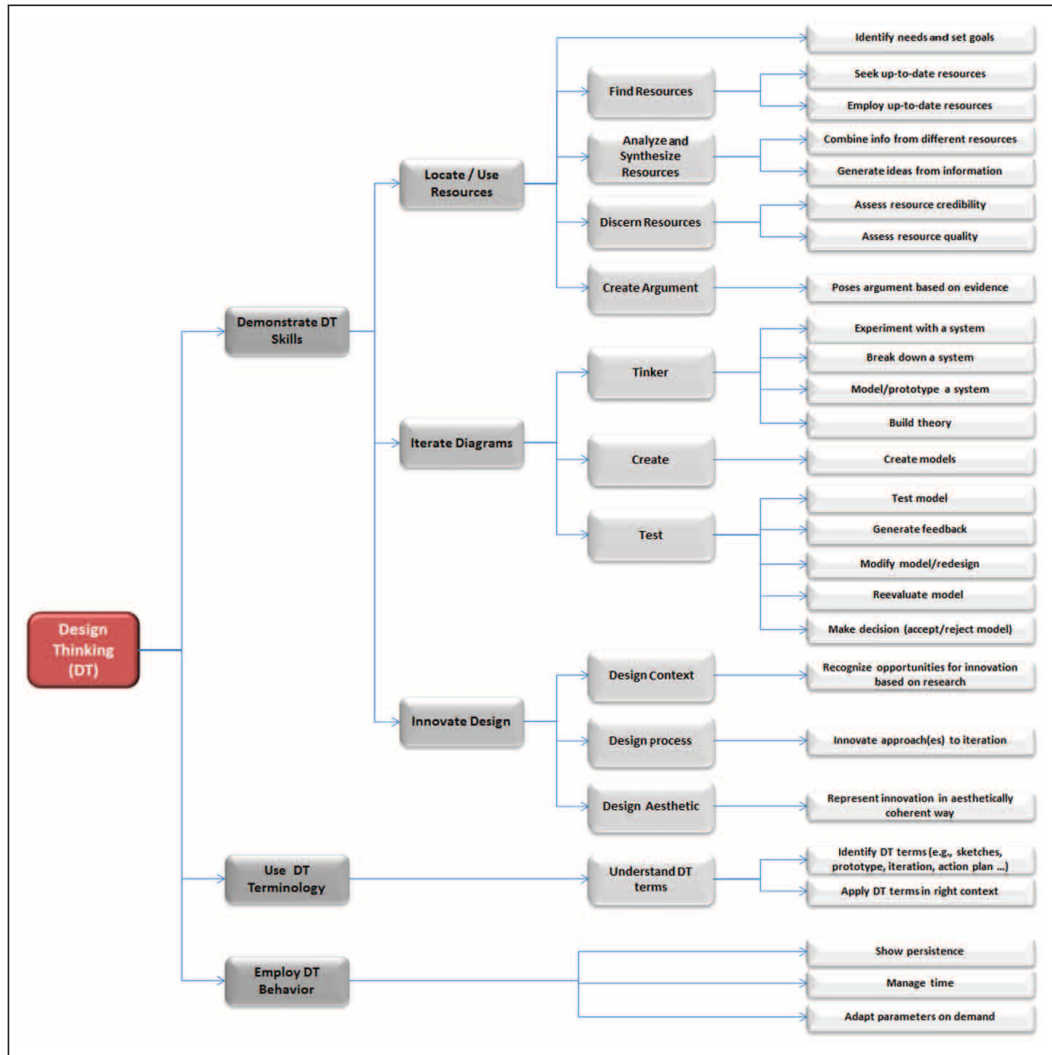


FIGURE 2. *The design thinking competency model.*

Note. Adapted from “Where Streams Converge: Using Evidence-Centered Design to Assess Quest to Learn.” In M. Mayrath, J. Clarke-Midura, & D.H. Robinson (Eds.), *Technology-Based Assessments for 21st Century-Skills: Theoretical and Practical Implications from Modern Research* (pp. 91-124). Charlotte, NC: Information Age Publishing.

operationalization of the design thinking construct and may also help drive the creation of appropriate activities that would allow for the collection of relevant evidence to inform variables in the model. For example, consider the variable “Iterate Diagrams” in Figure 2. Skills associated with this variable include tinkering, creating, and testing ideas via diagrams. Testing, in turn, entails initial testing of the design idea, getting feedback, modifying the design, reevaluating it, and making a decision to accept or reject the modeled idea. To assess students’ competency levels relative to the iterate diagrams variable, we would have to put them in a situation in which those constituent skills could be employed, such as in a game or simulation. Diagnostically, the model could provide the framework for evaluating the degree to which students are demonstrating particular design thinking skills at various times and at various grain sizes relative to the model (for more, see Shute & Torres, 2012).

The design thinking competency model is useful for assessment and diagnostic purposes. That is, once the key knowledge and skills have been identified, then tasks and activities can be developed in line with the model's variables. Another relevant question concerns whether these skills are learnable. With sufficient practice within meaningful environments, along with scaffolded support and formative feedback, we believe that students can learn design thinking skills. Moreover, pedagogical approaches that involve problem-based learning, project-based learning, and inquiry-based learning can be used to enhance students' design thinking skills within the context of evocative and consequential classroom activities (Dym et al., 2005).

Such learner-centered approaches can help to raise students' awareness about good design processes and generally enhance their interest in solving complex problems. Associated activities could be designed in a way that requires students to generate ideas/solutions, receive support for their emergent design thinking skills, as well as ongoing feedback about the feasibility of various solutions. Educators can support their students in developing these skills by providing them with multiple and varied opportunities to design and create prototypes, experiment with different ideas, collaborate with others, reflect on their learning, and repeat the cycle while revising and improving each time.

In summary, the premise is that by improving students' design thinking skills through having them apply processes and methods that designers use to ideate and help them experience how designers approach problems to try to solve them, students will be more ready to face problems, think outside of the box, and come up with innovative solutions. We believe that design thinking is more than just a skill to be acquired and used in limited contexts. Rather, we view it as a way of thinking and being that can potentially enhance the epistemological and ontological nature of schooling.

Summary and Discussion

In this article, we reviewed the literature related to design thinking. Expert designers are solution focused rather than problem focused. This appears to be a feature of design thinking that comes with education and experience in designing (Cross, 2004). Specifically, building experience in a particular domain allows designers to quickly identify the problem and propose a solution. Generating, synthesizing, and evaluating a solution are frequently identified as key features of design expertise. Some research studies (e.g., Dorst & Cross, 2001; Guindon, 1990) have found that creative and productive design behavior seems to be associated with frequent switching of types of cognitive activity (e.g., analysis, synthesis). Designers should be able to assess the conditions of a given situation and quickly adjust their actions depending on the current set of needs (Stempfle & Badke-Schaube, 2002).

Helping students to think like designers may better prepare them to deal with difficult situations and to solve complex problems in school, in their careers, and in life in general. Current educational practices, though, typically adhere to outdated theories of learning and pedagogy, evidenced by a so-called content fetish (Gee, 2005). That is, schools continue to focus on increasing students' proficiency in traditional subjects such as math and reading, via didactic approaches, which leaves many students disengaged. We can and should move beyond that limited

focus and consider new educationally valuable skills (e.g., design thinking, multi-tasking, digital literacy) to value, assess, and support.

As described earlier, enhancing students' design thinking skills may be achieved through incorporating authentic and intriguing tasks into the classroom and providing many opportunities to apply design processes. In our design thinking model shown in Figure 2, imagine tasks that are designed and developed for each of the low-level nodes. As students work on the tasks, evidence is accumulated to evaluate their performance. Such information can help educators monitor the student's performance, infer current states of strength and weakness relative to design thinking variables, and provide targeted feedback to improve the student's performance. Our goal as educators should not focus on preparing our students to perform well on standardized exams, but to equip them with powerful skill sets that can help them succeed both within and outside of school.

This article presented relevant research that has provided the basis for understanding (a) the nature of design thinking, (b) experts' behavior in design, and (c) differences between novice and expert designers. Most of these studies were qualitative and employed protocol analysis, which has some limitations as a research method, especially for investigating design activities. For example, it can be a weak method when researchers aim to capture designers' nonverbal thought processes, which are critical in design thinking. The majority of the studies we reviewed aimed to examine either the differences between novice and expert designers or characterize expert behavior in the designing process. However, experimental evidence is lacking in the field of design research.

Researchers who are interested in measuring and supporting design thinking have great opportunities to conduct a wide range of experimental studies that can lead to important findings. For instance, researchers may examine the effects of the design thinking process on various learning outcomes. They can also investigate the effects of different tasks and their complexity relative to enhancing design thinking skills, which in turn are assumed to increase students' learning outcomes. It would also be interesting to know if design thinking skills mediate the learning process. In other words, design thinking skill may serve as a mediator that clarifies the nature of the relationship between an independent variable (e.g., problem-solving skill) and a dependent variable (e.g., math test scores). So, rather than hypothesizing a direct causal relationship between problem-solving skill and math test scores, we may hypothesize that problem-solving skill enhances design thinking skill, which in turn leads to an increase in math scores. Another important study could examine the domain-specific versus domain-independent nature of design thinking. In other words, can design thinking skill be examined independently of particular domains (e.g., engineering vs. marketing), or is it context bound?

Currently, we have found no valid performance-based assessments of design thinking skills. This lack adversely affects the ability to collect good evidence about the effects of these skills on learning (Rotherham & Willingham, 2009). A major challenge, then, is to design and develop accurate, performance-based measures of these skills. Assessing these types of 21st-century competencies is beyond the capabilities of most traditional assessment formats (e.g., multiple-choice test, self-report survey). Therefore, innovative assessments that aim to reliably measure those skills should be designed and developed to assist researchers in collecting valid and reliable evidence. We suggest employing the evidence centered design

(ECD) framework (Mislevy, Steinberg, & Almond, 2003) for designing valid performance-based assessments for 21st-century skills. ECD is a systematic approach to the design of assessments that focuses on the evidence (i.e., student performance and products) of proficiencies as the basis for constructing assessment tasks and making inferences about competency levels (for more, see Mislevy et al., 2003). ECD is especially suited for assessments that involve complex problems and dynamic, interactive environments—which are exactly the kinds of contexts required for design problems.

There is considerable empirical work to be done to establish a full understanding of design thinking. The studies surveyed in this article show the characteristics of novice and expert designers. Having good design thinking skills can assist in solving really complex problems as well as adjusting to unexpected changes. Although the design process involves in-depth cognitive processes—which may help our students build their critical thinking skills (e.g., reasoning and analysis)—it also involves personality and dispositional traits such as persistence and creativity. If we are serious about preparing students to succeed in the world, we should not require that they memorize facts and repeat them on demand; rather, we should provide them with opportunities to interact with content, think critically about it, and use it to create new information. Preparation for future work situations requires teaching learners to use their minds well. To turn the tide in education that is leaving students “ill-prepared to tackle real-world, complex problems [we must change our course] . . . we cannot directly adjust the wind (the future), but we can adjust

References

- Ahmed, S., Wallace, K. M., & Blessing, L. T. M. (2003). Understanding the differences between how novice and experienced designers approach design tasks. *Research in Engineering Design, 14*, 1–11.
- Akin, Ö., & Akin, C. (1996). Frames of reference in architectural design: Analyzing the hyper-acclamation (aha!). *Design Studies, 17*, 341–361. doi:10.1016/S0142-694X(96)00024-5
- Atman, C. J., Chimka, J. R., Bursic, K. M., & Nachtmann, H. L. (1999). A comparison of freshman and senior engineering design processes. *Design Studies, 20*, 131–152. doi:10.1016/S0142-694X(98)00031-3
- Badke-Schaub, P. (1999). Analysis of design projects. *Design Studies, 20*, 465–480. doi:10.1016/S0142-694X(99)00017-4
- Ball, L. J., Evans, J., & Dennis, I. (1994). Cognitive processes in engineering design: A longitudinal study. *Ergonomics, 37*, 1753–1786. doi:10.1080/00140139408964950
- Braha, D., & Maimon, O. (1997). The design process: Properties, paradigms, and structure. *IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans, 27*, 146–166. doi:10.1109/3468.554679
- Braha, D., & Reich, Y. (2003). Topological structures for modeling engineering design processes. *Research in Engineering Design, 14*, 185–199. doi:10.1007/s00163-003-0035-3
- Bright, A. (1994). Teaching and learning in the engineering clinic program at Harvey Mudd College. *Journal of Engineering Education, 83*, 113–116.
- Bruner, J. S. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Christiaans, H., & Dorst, C. (1992). Cognitive models in industrial design engineering: A protocol study. In D. Taylor & D. Stauer (Eds), *Design theory and methodology—DTM92*. New York, NY: American Society of Mechanical Engineers.

- Cross, N. (2004). Expertise in design: An overview. *Design Studies*, 25, 427–441. doi:10.1016/j.destud.2004.06.002
- Cross, N., & Cross, A. (1998). Expertise in engineering design. *Research in Engineering Design*, 10, 141–149. doi:10.1007/BF01607156
- Do, E. Y-L., & Gross, M. D. (2001). Thinking with diagrams in architectural design. *Artificial Intelligence Review*, 15, 135–149. doi:10.1023/A:1006661524497
- Dorner, D. (1999). Approaching design thinking research. *Design Studies*, 20, 407–415. doi:10.1016/S0142-694X(99)00023-X
- Dorst, K., & Cross, N. (2001). Creativity in the design process: Co-evolution of problem-solution. *Design Studies*, 22, 425–437. doi:10.1016/S0142-694X(01)00009-6
- Dunne, D., & Martin, R. (2006). Design thinking and how it will change management education: An interview and discussion. *Academy of Management Learning & Education*, 5, 512–523. doi:10.5465/AMLE.2006.23473212
- Dutson, A. J., Todd, R. H., Magleby, S. P., & Sorensen, C. D. (1997). A review of literature on teaching design through project-oriented capstone courses. *Journal of Engineering Education*, 76, 17–28.
- Dym, C. L., Agogino, A. M., Eris, O., Frey, D. D., & Leifer, L. J. (2005). Engineering design thinking, teaching, and learning. *Journal of Engineering Education*, 94, 103–120.
- Eisentraut, R. (1999). Styles of problem solving and their influence on the design process. *Design Studies*, 20, 431–437. doi:10.1016/S0142-694X(99)00016-2
- Ericsson, K. A., Krampe, R., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100, 363–406. doi:10.1037/0033-295X.100.3.363
- Ericsson, K. A., & Smith, J. (Eds.). (1991). *Toward a general theory of expertise: Prospects and limits*. Cambridge, UK: Cambridge University Press.
- Evans, D. L., McNeill, B. W., & Beakley, G. C. (1990). Design in engineering education: Past views of future directions. *Journal of Engineering Education*, 79, 517–522.
- Fricke, G. (1999). Successful approaches in dealing with differently precise design problems. *Design Studies*, 20, 417–429. doi:10.1016/S0142-694X(99)00018-6
- Gee, J. P. (2005). What would a state of the art instructional video game look like? *Innovate*, 1(6). Retrieved from <http://www.innovateonline.info/index.php?view=article&id=80>.
- Göker, M. H. (1997). The effects of experience during design problem solving. *Design Studies*, 18, 405–426. doi:10.1016/S0142-694X(97)00009-4
- Goldschmidt, G., & Weil, M. (1998). Contents and structure in design reasoning. *Design Issues*, 14, 85–100. doi:10.2307/1511899
- Guindon, R. (1990). Knowledge exploited by experts during software system design. *International Journal of Man-Machine Studies*, 33, 279–304. doi:10.1016/S0020-7373(05)80120-8
- Gunther, J., & Ehrlenspiel, K. (1999). Comparing designers from practice and designers with systematic design education. *Design Studies*, 20, 439–451. doi:10.1016/S0142-694X(99)00019-8
- Hatchuel, A., & Weil, B. (2009). C-K design theory: An advanced formulation. *Research Engineering Design*, 19, 181–192. doi:10.1007/s00163-008-0043-4
- Ho, C-H. (2001). Some phenomena of problem decomposition strategy for design thinking: Differences between novices and experts. *Design Studies*, 22, 27–45. doi:10.1016/S0142-694X(99)00030-7

- Kavakli, M., & Gero, J. (2002). The structure of concurrent cognitive actions: A case study on novice and expert designers. *Design Studies*, 23, 25–40. doi:10.1016/S0142-694X(01)00021-7
- Kolodner, J., & Wills, L. (1996). Power of observation in creative design. *Design Studies*, 17, 385–416. doi:10.1016/S0142-694X(96)00021-X
- Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge, MA: University of Cambridge Press.
- Liu, Y-T. (1996). Is designing one search or two? A model of design thinking involving symbolism and connectionism. *Design Studies*, 17, 435–449. doi:10.1016/S0142-694X(96)00018-X
- Lloyd, P., & Scott, P. (1994). Discovering the design problem. *Design Studies*, 15, 125–140. doi:10.1016/0142-694X(94)90020-5
- Lloyd, P., & Scott, P. (1995). Difference in similarity: Interpreting the architectural design process. *Planning and Design*, 22, 383–406. doi:10.1068/b220383
- McNeill, T., Gero, J., & Warren, J. (1998). Understanding conceptual electronic design using protocol analysis. *Research in Engineering Design*, 10, 129–140. doi:10.1007/BF01607155
- Mislevy, R. J., Steinberg, L. S., & Almond, R. G. (2003). On the structure of educational assessments. *Measurement: Interdisciplinary Research and Perspectives*, 1, 3–62. doi:10.1207/S15366359MEA0101_02
- Nagai, Y., & Noguchi, H. (2003). An experimental study on the design thinking process started from difficult keywords: Modeling the thinking process of creative design. *Journal of Engineering Design*, 14, 429–437. doi:10.1080/09544820310001606911
- Nigel, C. (2004). Expertise in design: An overview. *Design Studies*, 25, 427–441. doi:10.1016/j.destud.2004.06.002
- Owen, C. (2007). Design thinking: Notes on its nature and use. *Design Research Quarterly*, 2, 16–27.
- Piaget, J. (1972). *The psychology of the child*. New York, NY: Basic Books.
- Purcell, T., & Gero, J. (1996). Design and other types of fixation. *Design Studies*, 17, 363–383. doi:10.1016/S0142-694X(96)00023-3
- Rotherham, A. J., & Willingham, D. (2009). To work, the 21st century skills movement will require keen attention to curriculum, teacher quality, and assessment. *Educational Leadership*, 9, 15–20.
- Rowe, P. (1987). *Design thinking*. Cambridge, MA: MIT Press.
- Seitamaa-Hakkarainen, P., & Hakkarainen, K. (2001). Composition and construction in experts' and novices' weaving design. *Design Studies*, 22, 47–66. doi:10.1016/S0142-694X(99)00038-1
- Shute, V. J., & Becker, B. J. (2010). *Innovative assessment for the 21st century*. New York, NY: Springer-Verlag.
- Shute, V. J., & Torres, R. (2012). Where streams converge: Using evidence-centered design to assess Quest to Learn. In M. Mayrath, J. Clarke-Midura, & D. H. Robinson (Eds.), *Technology-based assessments for 21st century skills: Theoretical and practical implications from modern research* (pp. 91–124). Charlotte, NC: Information Age Publishing.
- Simon, H. A. (1996). *The sciences of the artificial* (3rd ed.). Cambridge, MA: MIT Press.
- Stempfle, J., & Badke-Schaube, P. (2002). Thinking in design teams—an analysis of team communication. *Design Studies*, 23, 473–496. doi:10.1016/S0142-694X(02)00004-2

- Suwa, M., Gero, J., & Purcell, T. (2000). Unexpected discoveries and s-invention of design requirements: Important vehicles for a design process. *Design Studies, 21*, 539–567. doi:10.1016/S0142-694X(99)00034-4
- Tang, H-H., & Gero, J. S. (2001). Sketches as affordances of meanings in the design process. In J. S. Gero, B. Tversky, & T. Purcell (Eds.), *Visual and spatial reasoning in design II* (pp. 271–282). Sydney: University of Sydney, Australia: Key Center of Design Computing and Cognition.
- Todd, R., & Magleby, S. (2004). Evaluation and rewards for faculty involved in engineering design education. *International Journal of Engineering, 20*, 333–340.
- Ullman, D., Dietterich, T., & Stauffer, L. (1988). A model of the mechanical design process based on empirical data. *Artificial Intelligence in Engineering Design and Manufacturing, 2*, 33–52.
- Weth, R., Von der. (1999). Design instinct? The development of individual strategies. *Design Studies, 20*, 453–463. doi:10.1016/S0142-694X(99)00021-6

Authors

RIM RAZZOUK completed her PhD in instructional systems at the Florida State University (FSU), Tallahassee, Florida. She also pursued her master's in instructional systems and obtained a certificate in human performance technology from FSU. Her research interests focus on the application and evaluation of different learner-centered methods and strategies, integration of mobile technology in education, and development of team-shared mental models. Currently, Rim is working as the director of measurement and assessment at Edvation in Seattle, WA; e-mail: rr05e@fsu.edu.

VALERIE SHUTE is a professor at Florida State University. Before coming to FSU in 2007, she was a principal research scientist at Educational Testing Service (2001-2007) where she was involved with basic and applied research projects related to assessment, cognitive diagnosis, and learning from advanced instructional systems. Her general research interests hover around the design, development, and evaluation of advanced systems to support learning, particularly related to twenty-first-century competencies. Her current research involves using immersive games with stealth assessment to support learning of cognitive and noncognitive knowledge and skills.

STRATEGY ([HTTP://WWW.BUSINESS2COMMUNITY.COM/STRATEGY](http://www.business2community.com/strategy))

The Importance of Design Thinking



Aaron Shapland (<http://www.business2community.com/author/aaron-shapland>) – August 2, 2017

👍 141

▲ Interesting 1

▼ Not Interesting



tpsdave (<https://pixabay.com/users/tpsdave/>) / Pixabay

Are you picturing a set of blueprints for a new, hyper-modern skyscraper? A colourful magazine cover? An artist scribbling away at a drafting table?

These are all ways we could use the word design, but “design thinking” is a concept that’s much bigger. A design doesn’t have to be a job title or a finished product. It doesn’t even have to be art. At least, not in the traditional sense.

So, What Is Design Thinking?

How do you create something completely new? Something that’s better, more efficient, or more beautiful than ever before? This requires a way of



Complimentary Gartner Research: Top GDPR Questions Answered (http://cx.quadient.com/68752/2017-10-11/75x3nn?utm_source=BrightInfo) (http://www.brightinfo.com/powered-by-cro-publishers/?utm_source=business2community-14092-1&utm_medium=referral&utm_campaign=PoweredByPublishers)

- Focuses on the needs of the end user
- Encourages new perspectives and examines every angle
- Says that mistakes aren't just okay, they're part of the design process
- Believes that the end product can always be improved

Design thinking is a process that has several distinct, but repeatable steps.

Step 1: Empathy

How do you create something entirely new that focuses on the end user? First, you observe them. Who are they? What makes them tick? What are their goals, desires or fears? To truly understand a target market, you have to focus on the emotions. Fully understanding the emotional context of a user is a vital prerequisite for smart design.

Step 2: Define

After observing and interacting with people, design thinkers can't help but begin to understand their problems. What's missing from their lives? What would make things easier? Why doesn't the solution already exist?

Design thinkers focus on the simplest form of a problem. At Vordik, for example, we know that building a website isn't simply about putting together a folder of website files. We dig deeper by getting to know the *client* and the *end user* (which are rarely the same person). What is the purpose of the website?

Step 3: Ideate

Once design thinkers know *why*, the next step is *how*. Unfortunately, many non-design thinking companies will often skate through this part. They'll find one idea, concept or visual identity that seems to work and will simply go with it. But is it the best idea from a long-term or an end-user perspective?

When one only considers the first idea (or the second), one misses out on the chance to create something truly unique and revolutionary. The first ideas of even the most creative people are often simply regurgitations of existing ideas. Instead, design thinkers like to throw lots of ideas around and see what sticks. We collaborate and develop our ideas together.

Step 4: Prototype

Once we're pretty sure we have the best idea, we create a prototype. If we were in the business of designing running shoes, we'd produce a physical version of the finished shoe. Since we're a strategy, design, and development firm – and not footwear designers – we might create a prototype version of a website or a sample blog post.

Recommended for You

Webcast, November 2nd: How to Get Your Lost Rankings Back in Google (Quickly!) (http://webcasts.business2community.com/events/get-lost-rankings-back-google?utm_source=B2C&utm_medium=Article-Promo&utm_campaign=Webcast11022017)

Step 5: Invest and Test

Once design thinkers are confident about the prototype, it's time to invest the real deal. Running shoes roll out to the market and websites go live.

But design thinking isn't done yet.

Remember Step 1? We go right back to the end users to find out how they're using the product and how they feel about it. Did we solve the problem? Did we solve it in the best way possible? Chances are, there will always be room for improvement and design thinking allows us to continuously grow and learn how to do that.

The Purpose of Design Thinking

So why design thinking? What makes this process better than others?

When you've been in business for a while, it's easy to hit the auto-pilot button and roll out "new" products that are more like their predecessors than we might care to admit. It's easy to experience a success and think, "That's good enough. What's next?" It's easy to believe our apparent limitations and simply live within them. But this is not where creativity and innovation live. They live in design thinking.



consistently create completely unique, well-thought out products that have been distilled to their very best design, then design thinking. Complimentary Gartner Research: Top GDPR Questions Answered ([http://cx.quadient.com/l/68752/2017-10-11/75x3nn?utm_source="](http://cx.quadient.com/l/68752/2017-10-11/75x3nn?utm_source=)

At least, that's our take.

Want to learn more? Contact us today to find out how design thinking can help create and implement the perfect digital strategy for your business.



(<http://www.business2community.com/author/aaron-shapland>)

Author: Aaron Shapland (<http://www.business2community.com/author/aaron-shapland>)

[View full profile](http://www.business2community.com/author/aaron-shapland) (http://www.business2community.com/author/aaron-shapland)

More by this author:

- [To Redesign Or Start Fresh? The Key Question For Corporate Websites](http://www.business2community.com/digital-marketing/to-redesign-or-start-fresh-the-key-question-for-corporate-websites-01240169) (<http://www.business2community.com/digital-marketing/to-redesign-or-start-fresh-the-key-question-for-corporate-websites-01240169>)

Follow Aaron Shapland:

This article originally appeared on Vordik (<http://vordik.com/2017/08/01/the-importance-of-design-thinking/>) and has been republished with permission.
Find out how to syndicate your content with B2C. ([/become-a-contributor](#))



Complimentary Gartner Research: Top GDPR Questions Answered (http://cx.quadient.com/l/68752/2017-10-11/75x3nn?utm_sour)



design thinking jobs in Los Altos, CA

My recent searches

3d design - Los Altos, CA - 10 new

design thinking - Los Altos, CA - 43 new

» clear searches

Sort by: **relevance** - date

Distance:

within 25 miles

Salary Estimate

\$70,000 (1276)
\$85,000 (1058)
\$100,000 (735)
\$110,000 (518)
\$125,000 (252)

Job Type

Full-time (1640)
Contract (88)
Internship (53)
Part-time (22)
Temporary (17)
Commission (6)

Location

San Jose, CA (361)
Santa Clara Valley, CA (189)

what

design thinking

job title, keywords or company

where

Los Altos, CA

city, state, or zip

Find Jobs

Jobs 1 to 10 of 1,742

Upload your resume - Let employers find you

Show: **all jobs** - 43 new jobs

Senior Website and Digital Marketing Strategist

Intrax Cultural Exchange - San Francisco, CA

\$130,000 - \$140,000 a year

Strong project management, problem-solving, & analytical thinking skills. Set standards for design in conjunction with Marketing Communications....

Easily apply

Sponsored - save job

Lead Design Researcher

OpenTable - **★★★★☆** 10 reviews - San Francisco, CA 94103

We strongly believe that our design team should be as diverse as the restaurant industry and the diners we design for...

Sponsored - save job

Senior Interaction Designer

Intuit - **★★★★☆** 787 reviews - Mountain View, CA 94039

Apply strategic thinking to design and deliver. Design, or other relevant field. Ideation, storytelling, prototyping, design frameworks, concept....

Sponsored - save job

Design Thinking Strategist & Facilitator

Adobe - **★★★★☆** 345 reviews - San Jose, CA

A background in facilitation, design, education, or design-led thinking. The Design Thinking Strategist & Facilitator will have a passion for user centered...

28 days ago - save job - more...

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Business and Social Sciences

LINC 77 DESIGN THINKING OVERVIEW

[Edit Course Outline](#)

LINC 77

DESIGN THINKING OVERVIEW

Summer 2018

2 hours lecture.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours:

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/17/17

Division Dean Information -

Seat Count: 25 Load Factor: .044 FOAP Code: 114000143072086000

Cross Listed as:

Related ID:

LINC 77A, 77B, 77C, 77D

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Need/Justification -

This course provides specialized training for strategic partners in college vocational programs, high schools, economic development initiatives, ROP, and capacity development projects for stakeholders in grades K-12. The primary target audience includes educators and students from school districts within the FHDA district service area: Mountain View-Whisman, Palo Alto Unified, Sunnyvale Elementary, Mountain View-Los Altos Union HSD, Los Altos Elementary, Fremont Union HSD, and Cupertino Union. The secondary target audience includes schools and residents throughout San Mateo, Santa Clara, Santa Cruz, and Alameda counties.

1. Description -

Students learn an overview of the design thinking methodology and its applications in education, business, industry and government. Focus is on introducing all aspects of the design cycle through inquiry-based facilitation and engaging immersive activities to develop understanding of the design thinking process.

Prerequisite: None

Co-requisite: None

Advisory: Experience with internet software tools, browsers, hyperlinks, online media resources, and basic skills using a computer.

2. Course Objectives -

The student will be able to:

- A. Define and explain the design thinking process
- B. Analyze the design thinking process for its best case uses in education, business, industry and government
- C. Research the opportunities available to implement design thinking process
- D. Communicate the benefits and drawbacks of the design thinking process
- E. Apply the design thinking process
- F. Develop strategies for effective design thinking activities, based on audience
- G. Create case uses for education, business, industry and/or government audiences

3. Special Facilities and/or Equipment -

- A. When offered on/off campus: Lecture room equipped with LCD projector, whiteboard, and a demonstration computer connected online. Computer laboratories equipped with online PCs and/or Macintosh computers, network server access, and printers.
- B. When taught via the Internet: Students must have current email accounts and/or ongoing access to computers with email software, web browsing capability, and access to the World Wide Web.

4. Course Content (Body of knowledge) -

- A. Design Thinking Process Definition and Explanation
 1. Empathize, define the problem, ideate, prototype, test
 2. Stanford d.school and IDEO connections
- B. Design Thinking Process and Its Best Case Uses
 1. In education
 2. In business
 3. In industry
 4. In government
- C. Opportunities Available to Implement Design Thinking Process
 1. Locally/contextually
 2. Community-based
 3. World-based
- D. Benefits and Drawbacks of the Design Thinking Process
 1. Benefits
 2. Drawbacks
- E. Design Thinking Process Applications
 1. In education
 2. In business
 3. In industry
 4. In government
- F. Strategies for Effective Design Thinking Activities
 1. Partnering/small group

2. Building community
 3. Contextual and empathetic facilitation of activities
- G. Create Case Uses for Education, Business, Industry and/or Government Audiences
1. Use case #1 creation for education, business, industry and/or government
 2. Use case #2 creation for education, business, industry and/or government

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by:

- A. Developing a project utilizing design thinking for the participant's specific purposes, whether educational, business-related or personal.
- B. Presentation of their web-based project to peers.
- C. Making constructive contributions to class discussions.

7. Representative Text(s) -

Martinez, Sylvia Libow, and Gary S. Stager. Invent to Learn: Making, Tinkering, and Engineering in the Classroom. Constructing Modern Knowledge, 2016.
Instructor-assigned notes and materials.

When course is taught online: Additional information, notes, handouts, syllabus, assignments, tests, and other relevant course material will be delivered by email and on the World Wide Web, and discussion may be handled with internet communication tools.

8. Disciplines -

Instructional Design/Technology

9. Method of Instruction -

During periods of instruction the student will be:

- A. Listening actively to lecture presentations delivered in student-centered learning style by taking notes, following demonstrations, or completing an activity
- B. Participating in facilitated discussions of live presentations, readings or video presentations
- C. Presenting in small group and whole class situations

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Each week requires the student to read and analyze selected websites or student projects related to that week's topic.
- B. Each week's topic requires a written response to a prompt that is turned in to the instructor for review. Each prompt is designed to be a draft of a section of the student's completed project. Instructor feedback should be reflected in the final product.
- C. Each week's topic requires the student to participate in a weekly discussion prompt based on that week's readings and assignment. Students are to respond to other students' responses offering support, suggestions, alternative ideas, and resources.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Credit Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course.

In short, the State wants us to deliberate carefully before adding a course that does not help students complete a degree or certificate. If it doesn't help them complete a State approved program of study, why are we offering the course?

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Course #: LINC 84A

Course Title: 3-D Design Concepts

Catalog Description:

Intended for educators, trainers, and others, this course will provide the basics to move designs from concepts to finished learning projects. Throughout the course, there will be a focus on application of finished products to meet a specific need or learning outcome. Within the course, troubleshooting and basic maintenance concepts will be covered to allow educators to operate and manage 3-D printers.

Are you requesting Stand Alone Approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate of achievement, nor to the Foothill GE pattern
- The course will only be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate of achievement that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Makerspace Specialist

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

This certificate is still in development and is anticipated to be submitted in May 2018.

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following five criteria:

Criteria A. Appropriateness to Mission

California Education Code §66010.4 identifies the two primary missions for California Community Colleges, and one secondary mission that pertains to credit coursework:

1. Primary: offer academic and vocational instruction at the lower division level; and
2. Primary: to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous work force improvement.
3. Secondary: provision of remedial instruction for those in need of it and, in conjunction with the school districts, instruction in English as a second language, and support services which help students succeed at the postsecondary level.

Briefly explain how this course is consistent with one (or more) of these missions:

Offers academic and vocational instruction to those interested in working in education, government, business, and/or industry. 3-dimensional design technology improves the design process that, in turn, benefits businesses, education settings, government, and other industries.

NOTE: Courses must address a valid transfer, occupational or basic skills purpose rather than primarily a vocational or recreational purpose. Courses must not provide only an activity or service without instructional content (e.g., assistive or therapeutic activity, use of college facilities or resources without specific instructional objectives, or assessment testing).

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area.

If you identified your course as intending to meet the CCC mission of preparation for **transfer**, we must demonstrate that the course is transferable. **Please attach the ASSIST documentation** to this application. (Ask the Articulation Officer for assistance if necessary.)

Attachments:

- Job advertisements: Indeed.com – 3D Design; 864 available
- Article: Making It Real: A cooperative, multigrade, 3D design project by Shealer; *Technology & Engineering Teacher*
- Report: New 3D Printers Aid STEM & Design Teaching; *Education Journal*

For courses that are **primarily occupational**, or that respond to economic development interests, need must be demonstrated within the service area of the college. Examples of the types of evidence of occupational need that may be submitted include:

- Statistical projections of growth in specific jobs by county (or labor market area) from the Employment Development Department’s Labor Market Information system
- Employer surveys
- Industry studies
- Regional economic studies
- Letters from employers
- Minutes of industry advisory committee meetings
- Job advertisements, from newspapers or the Internet
- Newspaper or magazine articles on industry or employment trends
- Studies or data from licensing agencies or professional associations

Please attach appropriate evidence to this application form.

Criteria C. Curriculum Standards (please initial as appropriate)

- ld _____ The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5
- _____ This is a non-degree applicable credit course (specify which one, below)
- _____ non-degree applicable basic skills course
- _____ course to enable students to succeed in degree-applicable credit courses (e.g., college orientation and guidance courses, discipline-specific preparatory courses)
- _____ pre-collegiate career technical preparation course to provide foundation skills for students preparing for entry into degree-applicable credit courses

Criteria D. Adequate Resources (please initial as appropriate)

- ld _____ This course will be administered in the same manner as existing courses in terms of funding, faculty, facilities and equipment

Criteria E. Compliance (please initial as appropriate)

- ld _____ The design of the course is not in conflict with any law particularly in regard to enrollment restrictions and licensing or accreditation standards

Faculty Requestor: Lisa DeLapo **Date:** 10/25/17

Division Curriculum Representative: Bill Ziegenhorn **Date:** 12/1/17

Date of Approval by Division Curriculum Committee: 12/1/17

College Curriculum Co-Chairperson: _____ **Date:** _____



3d design jobs in Los Altos, CA

My recent searches

[design thinking - Los Altos, CA](#) - 42 new

» [clear searches](#)

Sort by: **relevance** - date

Distance:

within 25 miles

Salary Estimate

\$70,000 (647)
\$80,000 (560)
\$90,000 (450)
\$100,000 (297)
\$110,000 (166)

Job Type

Full-time (816)
Internship (39)
Temporary (24)
Contract (23)
Part-time (11)
Commission (1)

Location

San Jose, CA (142)
Sunnyvale, CA (123)
Santa Clara, CA (80)

what

3d design

job title, keywords or company

where

Los Altos, CA

city, state, or zip

[Upload your resume](#) - Let employers find you

Jobs 1 to 10 of 864

Show: **all jobs** - 10 new jobs

Entry Level Creative Inventor

LTA Research - Mountain View, CA 94043

Experience in design and fabrication of assembly jigs, fixtures and tooling for large structures. You will work within a dynamic engineering and design team to...

Easily apply

[Sponsored](#) - [save job](#)

Architectural Designer

McMahon Architects and Builders Inc. - San Francisco, CA 94114

Revit and 3D software, graphic design skills would be exceptional. Design and Drafting:.. Builders, residential homeowners, and commercial developers truly...

Easily apply

[Sponsored](#) - [save job](#)

Senior Product Design Engineer

A2Z Development Center, Inc. - Sunnyvale, CA

Proficiency with Design for Cost and Design for Manufacture for consumer products.

Experience with 3D CAD skills, ProEngineer....

[Sponsored by Amazon.com](#) - [save job](#)

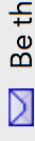
UI Designer

Toyota Research Institute - Los Altos, CA

Experience with 3D design software (e.g. Experience creating designs in VR. Experience working within a user-centered design process....

[30+ days ago](#) - [save job](#) - [more...](#)

Advanced Job



Be th

Los A

My email:



Also g

just for me

Activate



making it real:

A COOPERATIVE, MULTIGRADE, 3D DESIGN PROJECT

BY
RON AND
MICHELLE
SHEALER



I witnessed a transformation as the older students took on the role of teacher or mentor, working diligently with their junior counterparts.

I had been well over 20 years since I spent any amount of time working with students in a primary school setting. Despite that, for this project, I found myself, along with my group of eighth grade Tech Ed students, standing amid a classroom of first-grade students. The eighth graders were quick to point out the miniature desks and chairs they would soon fill—or should I say overflow. Smiles aside, it was still obvious that both groups were nervous about meeting and working with their new friends. I witnessed a transformation as the older students took on the role of teacher or mentor, working diligently with their junior counterparts.

Three weeks prior, both classes were introduced to a new cooperative project, an idea that culminated while my wife, a first grade teacher, and I, a middle school Tech Ed teacher, talked about our upcoming lessons. The first graders were getting ready to begin their unit entitled “Going Green in the Neighborhood.” My eighth grade Tech Ed class had just received two MakerBot 3D printers, a welcome addition to our program.

Always willing to try something new in the classroom, we started tossing around some ideas and questions. What if the first-grade students sketched home designs on paper to make a model community? Could the eighth-grade students take those drawings and make them into 3D computer models and print them out as true 3D models in plastic? The “Going Green” theme sounded like a unique opportunity to utilize STEM skills at both levels. How well would the two different

age groups work together? What sort of grouping made the most sense? With several miles between the schools, how could we get the groups together? It wasn’t long before I sent off an email to my principal, Dr. Karen Wisler, sharing the idea and asking if transportation might be available. She had recently allocated the funds necessary to purchase the 3D printers. With that in mind, I had a good feeling we would get two thumbs up to proceed with planning.

As the first-grade class started a few short lessons on sketching and home design, the eighth graders were finishing up learning the basics of the free drawing program, Google SketchUp. We decided to pair two first graders and two eighth graders together, forming a group of four. Each group had to sketch, design, and print a home for a model family that would then become a component of their ideal community. My wife smiled and announced, “Remember, these are first graders” as she presented me with a stack of sketches from her class. My reply, “This is going to be a very interesting project!”

Each of the eighth-grade student groups received a sketch from a first-grade counterpart. I asked them to evaluate the sketches and record any questions that arose. After developing the lists of questions, we did some brainstorming on how best to communicate over distance with our partners for clarity in the designs. Email and phone calls were ruled out, and traveling just to ask a few questions wasn’t feasible. It wasn’t long before the idea of Skype was mentioned.



First graders proudly show off Cougarland.

The next class period found the groups huddled around laptop computers, sharing the drawings through the computer camera and asking questions of their partners. I recall one of the eighth graders whispering to me, "They are really small!" I heard questions like, "Do you really want that many doors?" and "Is that an arched window?" "Is this a hot tub?" and a question regarding a very unique feature on a home, "Um, what is this large pole coming out of the roof?" A shocking reply from the first graders, "Oh, that's a lightning attractor to power our house." Creativity and imagination were definitely not lacking. The eighth graders were impressed.

After the Skype session, my class was given three class periods to develop a 3D drawing. We discussed scale and proportion, reviewing a math topic from seventh grade. I had some concerns that my students might not put forth their best effort, risking the disappointment of their younger partners. These thoughts quickly dissipated. The Skype session had given them faces to go with the names, and I witnessed my students taking extra steps to make their projects special; they were no longer just answering to their teacher. While drawing, we talked about different types of careers where they might use technology skills

to fill the needs of a client. It was made clear that their elementary counterpart was taking on that role—they were the client.

The following week we loaded up on the bus, laptops in hand, Makerbot printer in tow, and headed off to meet our first-grade clients. Even though the groups had met electronically, there was still an air of uncharacteristic shyness in the classroom. The students started working together in whispers, but by the end of their hour-and-a-half block of time, we were asking them to quiet down. Their goal was to review the initial computer design, make any necessary changes and additions, and then begin the process of painting and selecting materials. They had to have a completed design by the end of the meeting. While they worked, I set up the MakerBot and began printing a model home. Each group came up to the printer, and the eighth graders explained how the machine operated and what it was doing. Ninety minutes proved to be more time than needed, so we had each group present their design to the class via the projector. After a quick snack together, goodbyes and hugs were shared, and the eighth graders boarded the bus again and headed back to the middle school.



First-grade students experiment with the solar panels that will power Cougarland.

Back in our middle school Tech Ed lab, we warmed up our two 3D printers and started printing out the fifteen plastic houses for the first graders. We wanted each student to get a model to keep. With the printers buzzing in the background, we started talking about other additions we could design for the “Going Green” model community. Our school building has two full-size wind turbines on the roof, along with a large photovoltaic solar panel, all of which are wired into the Tech Ed lab. The eighth graders have been exposed to those technologies, so that was the main area of interest. How could we develop a working turbine that the first graders could experiment with and add to their project? Did something already exist, or would we need to start from scratch? Where could we find some small photovoltaic panels?

The research and part-scrounging began. In our science department, we found a few small PV cells, but they needed a stand or base. It didn’t take long to come up with a drawing on the computer to print a 3D stand in plastic. It would hold the cells in

a realistic, angled fashion. After printing the necessary stands, we began wind-turbine work.

A nice three-blade turbine was found on the Thingiverse.com website. With a quick alteration of the hub, we were able to make it fit on an inexpensive electric motor. The turbine also needed a realistic and functional stand, as one could not be found. While we developed computer drawings for those parts, we began experimenting and testing. With a voltage ohm meter in hand, we discovered that the inexpensive DC motors generated a marginal amount of measurable electricity. With more digging, we found an upgraded DC motor we had used for solar car races the previous year. A package with fifteen houses, two PV panels, a wind turbine, battery, variety pack of LEDs, test leads with alligator clips, and a VOM were passed on to the elementary school. We knew they would be discussing recycling and refuse handling, so we designed and printed out miniature trash cans and recycling bins to go with each house. Street signs were also thrown into the mix.

Needless to say, our young counterparts were thrilled with the package. They started first by examining their 3D homes and placing one from each group in their newly named community, “Cougarland.” After a few demonstrations from the first-grade teacher, the students began experimenting with the wind turbine. First, they took turns spinning the turbine by hand to see who could get the largest reading on the VOM. They discovered that spinning in one direction would bring up a negative number, while the other direction did not—DC discovered. They hooked a battery to the motor and saw how the device now became a fan of sorts. Alternating the battery connections changed the fan direction. VOM readings were a bit on the abstract side for the



Eighth graders and first graders meet to refine final designs before printing.

younger learners. The LEDs were introduced, and students saw that they could spin the turbine and create light. “Cougarland” now had electricity!

The PV panels and VOM went outside with them at recess. They tested different angles and watched how shadows impacted the output. It wasn’t long before they were asking if they could connect the LEDs to the PV panels—aha, another source of power for “Cougarland”!

As “Cougarland” evolved, it received numerous visits and tours from administrators, parents, teachers, and other students. The first-grade students were more than happy to show off their creation, demonstrate its features (especially the wind turbine), and share how it came to be. Several emails were received about the project including the following from the parent of a first-grade student: “[My son] was talking about the solar panel yesterday. Definitely made an impact, as he was discussing how much electricity it was creating based upon the meter readings. Appreciate you introducing these topics, maybe these students will move us toward more sustainable, diversified, and efficient energy policies in the future.”

THE NEXT STEP

How will the project evolve for future offerings? After the project, both groups provided ideas and feedback for future designs. A small, key-chain-sized, solar-charged flashlight was recently discovered. It won’t take much hacking to change that into a solar-charged home with LED lighting.

Another discussion of improvements brought up the idea of working street lights for the community. A third idea, still within the realm of middle-level abilities, would be to design a working model of a hydroelectric power plant. If none of that works, we could always go back to the idea the first graders had...lightning!

ACADEMIC STANDARDS

This project addressed a variety of Pennsylvania elementary and middle-level standards, particularly in the area of Science and Technology.

The content standards in ITEEA’s *Standards for Technological Literacy* (ITEA/ITEEA, 2000, 2002, 2007) include:

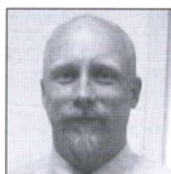
- STL3:** The relationships among technologies and the connections between technology and other fields.
- STL8:** The attributes of design.



First graders testing the wind turbine.

STL10: The role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

STL16: Energy and Power Technologies.



Ron and Michelle Shealer both teach in the State College Area School District, State College, PA. They can be reached at mIs39@scasd.org.



Reprinted with permission from the Technology and Engineering Educators of Pennsylvania Journal.

New 3D printers aid STEM and design teaching

A 3D printer programme aimed at boosting science, technology, engineering, maths, and design and technology teaching is to be extended by Education Secretary Michael Gove. While 3D printing is already an established industrial technology, it is a new concept in schools and in 2012 the Department for Education funded a project to allow 21 secondaries to trial the use of the printers in STEM and design and technology classes.

A £500,000 fund will now be set up to enable 60 schools to buy 3D printers and train teachers to use them effectively. A report into the pilot revealed that so far in the UK, the technology had been restricted largely to design and technology classes but that there was considerable potential for them to be used within a range of STEM subjects. The pilot schools reported that early work with the printer had often been limited to demonstrations and printing of small files such as 3D shapes. This had highlighted the need for teachers to receive training. Examples of how the printers were used included:

- Science departments used the 3D printer as a context to discuss the properties of plastics, to build models for teaching science such as molecules, eyeballs, cells and sine waves, and to build components for working equipment such as rockets
- At Watford Grammar School for Boys the printer was used to demonstrate a 3D graph for various algebraic equations as well as producing examples of regular shapes (dodecahedron)
- Honeywood Community Science School in Essex designed an advanced 3D development learning tool, enabling pupils to create 3D objects using typed code in POV-Ray3. This enabled pupils to practise writing and debugging code and also supported studying algebra and understanding 3D/2D space

Help change the face of community learning

Following the conclusion of a six month pilot of the eReading Rooms project, a scheme which involved a small group of UK online centres trialling a new approach to community elearning, the Tinder Foundation has been funded to find centres that wanted to be involved.

The eReading Rooms pilot engaged people in activities ranging from baking to jewellery making, composting to composing, word search to jobsearch, all of which were enabled or enhanced by technology. The project engaged with almost 1,500 learners from hard-to-reach groups, who were excluded by a range of factors including age, disability, education, lack of employment or language skills.

The project was funded by the Department for Business Innovation and Skills. The Tinder Foundation is inviting centres to tell them about content they have developed that they would be happy to share, which could be on any non-formal learning and, which was not necessarily limited to digital skills.

Thousands of pupils to visit First World War battlefields

More than 1,000 schools have already signed up to give their pupils the chance to visit the First World War battlefields under a centenary scheme set up by Education Secretary Michael Gove. Each participating school will send at least 2 pupils and a teacher on a 4-day tour to see some of the great battlefields and other notable sites, and to take part in remembrance ceremonies on the western front. The tours will start in spring 2014 and will run until 2019.

Copyright of Education Journal is the property of Education Publishing Worldwide Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Business and Social Sciences

LINC 84A 3-D DESIGN CONCEPTS

[Edit Course Outline](#)

LINC 84A

3-D DESIGN CONCEPTS

Summer 2018

2 hours lecture.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours:

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 6/21/17

Division Dean Information -

Seat Count: 35 **Load Factor:** .044 **FOAP Code:** 114000151011086000

Cross Listed as:

Related ID:

LINC 84B

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course provides specialized training for strategic partners in college vocational programs, high schools, economic development initiatives, ROP, and capacity development projects for stakeholders in grades K-12. The primary target audience includes educators and students from school districts within the FHDA district service area: Mountain View-Whisman, Palo Alto Unified, Sunnyvale Elementary, Mountain View-Los Altos Union HSD, Los Altos Elementary, Fremont Union HSD, and Cupertino Union. The secondary target audience includes schools and residents throughout San Mateo, Santa Clara, Santa Cruz, and Alameda counties.

1. Description -

Intended for educators and others, this course will provide the basics to move designs from concepts to finished learning projects. Throughout the course, there will be a focus on application of finished products to meet a specific need or learning outcome. Within the course, troubleshooting and basic maintenance concepts will be covered to allow educators to operate and manage 3-D printers in their schools.

Prerequisite: None

Co-requisite: None

Advisory: Experience with internet software tools, browsers, hyperlinks, online media resources, and basic skills using a computer.

2. Course Objectives -

The student will be able to:

- A. Define and identify the types of 3-D design and their uses.
- B. Identify how 3-D design can be used to replicate, improve and reduce the costs of producing items.
- C. Identify and employ the parts of the design process from 2-D image to 3-D solid.
- D. Design and produce basic items quickly and easily.
- E. Prototype and test items to develop iterative designs.
- F. Identify potential uses for independent 3-D design in education, business, and/or government audiences.

3. Special Facilities and/or Equipment -

- A. When offered on/off campus: Lecture room equipped with LCD projector, whiteboard, and a demonstration computer connected online. Computer laboratories equipped with online PCs and/or Macintosh computers, network server access, and printers.
- B. When taught via the Internet: Students must have current email accounts and/or ongoing access to computers with email software, web browsing capability, and access to the World Wide Web.

4. Course Content (Body of knowledge) -

- A. Introduction to 3-D Design Possibilities and Uses
 1. Reinventing existing objects
 2. Combination of design and artistic genres
 3. Prototyping new products
 4. Additive/ancillary items to existing items
- B. Design Techniques in 3-D Printing
 1. Creating 2-D sketches to visualize items
 2. Using online databases as models to improve designs
 3. Reverse engineering models to understand design and process
 4. Combining design processes from multiple models
- C. Using 3-D Design Software
 1. Developing basic shapes (cube, cylinder, sphere, cone)
 2. Combining multiple shapes within one project
 3. Understanding scale and its applications within the specific software application
 4. Understanding the types of 3-D design software, their features and uses within industry, business, education and other applications
- D. 3-D Production Process
 1. Creating solid objects
 2. Creating hollow objects
 3. Duplicating objects to ensure scale and interoperability
 4. Slicing objects to ensure interoperability
- E. Design Guidelines for Successful 3-D Printing

1. Material types and uses
 2. Build orientation
 3. Object thickness considerations (strength/weight)
 4. Designing connected parts and custom features/designs)
- F. Potential Applications for 3-D Design within Society
1. Educational applications
 2. Business applications
 3. Government applications
 4. How does 3-D design reduce costs and time in the product production cycle

5. **Repeatability** - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by:

- A. Developing a project utilizing 3-D design software for the participant's specific purposes, whether educational, business-related or personal.
- B. Presentation of their web-based/3-D printed project to peers.
- C. Making constructive contributions to class discussions.

7. Representative Text(s) -

Instructor-assigned notes and materials.

Example textbook: Micallef, Joe. Beginning Design for 3-D Printing. Apress Media, 2015. Print.

When course is taught online: Additional information, notes, handouts, syllabus, assignments, tests, and other relevant course material will be delivered by email and on the World Wide Web, and discussion may be handled with internet communication tools.

8. Disciplines -

Instructional Design/Technology

9. Method of Instruction -

During periods of instruction the student will be:

- A. Listening actively to lecture presentations delivered in student-centered learning style by taking notes, following demonstrations, or completing an activity
- B. Participating in facilitated discussions of live presentations, readings or video presentations
- C. Presenting in small group and whole class situations

10. Lab Content -

Not applicable.

11. **Honors Description** - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Each week requires the student to read and analyze selected websites or student projects related to that week's topic.
- B. Each week's topic requires a written response to a prompt that is turned in to the instructor for review. Each prompt is designed to be a draft of a section of the student's completed project. Instructor feedback should be reflected in the final product.
- C. Each week's topic requires the student to participate in a weekly discussion prompt based on that week's readings and assignment. Students are to respond to other students' responses offering support, suggestions, alternative ideas, and resources.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Credit Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course.

In short, the State wants us to deliberate carefully before adding a course that does not help students complete a degree or certificate. If it doesn't help them complete a State approved program of study, why are we offering the course?

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Course #: LINC 84B

Course Title: 3-D Design & Fabrication

Catalog Description:

Intended for educators and others, this course will provide the fundamentals of 3D design and fabrication concepts. The use of basic design software and online libraries will be used to assist in developing and designing 3D projects for learning projects by students in grades K-12, business, industry, and/or government. An emphasis will be placed on design concepts to meet a specific educational/instructional/project need.

Are you requesting Stand Alone Approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate of achievement, nor to the Foothill GE pattern
- The course will only be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate of achievement that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Makerspace Specialist

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

This certificate is in development with an anticipated submission date of May 2018.

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following five criteria:

Criteria A. Appropriateness to Mission

California Education Code §66010.4 identifies the two primary missions for California Community Colleges, and one secondary mission that pertains to credit coursework:

1. **Primary:** offer academic and vocational instruction at the lower division level; and
2. **Primary:** to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous work force improvement.
3. **Secondary:** provision of remedial instruction for those in need of it and, in conjunction with the school districts, instruction in English as a second language, and support services which help students succeed at the postsecondary level.

Briefly explain how this course is consistent with one (or more) of these missions:

Knowing design concepts and applying them to the fabrication process results in better prototypes and products. This course offers academic and vocational instruction to those interested in working in

education, government, business, and/or industry. 3-dimensional design technology and fabrication improve the processes that, in turn, benefits businesses, education settings, government, and other industries.

NOTE: Courses must address a valid transfer, occupational or basic skills purpose rather than primarily a vocational or recreational purpose. Courses must not provide only an activity or service without instructional content (e.g., assistive or therapeutic activity, use of college facilities or resources without specific instructional objectives, or assessment testing).

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area.

If you identified your course as intending to meet the CCC mission of preparation for **transfer**, we must demonstrate that the course is transferable. **Please attach the ASSIST documentation** to this application. (Ask the Articulation Officer for assistance if necessary.)

Attachments:

- Who's Afraid of Fabrication? Why teach digital fabrication now? By Brennan Buck in *Negotiating Design & Making*
- Indeed.com job search: 767 fabrication jobs available within 25 mile radius of Los Altos, CA
- "Digital Fabrication and 'Making' in Education: The Democratization of Invention" by Paulo Blikstein – Stanford

For courses that are **primarily occupational**, or that respond to economic development interests, need must be demonstrated within the service area of the college. Examples of the types of evidence of occupational need that may be submitted include:

- Statistical projections of growth in specific jobs by county (or labor market area) from the Employment Development Department's Labor Market Information system
- Employer surveys
- Industry studies
- Regional economic studies
- Letters from employers
- Minutes of industry advisory committee meetings
- Job advertisements, from newspapers or the Internet
- Newspaper or magazine articles on industry or employment trends
- Studies or data from licensing agencies or professional associations

Please attach appropriate evidence to this application form.

Criteria C. Curriculum Standards (please initial as appropriate)

ld The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

_____ This is a non-degree applicable credit course (specify which one, below)

_____ non-degree applicable basic skills course

_____ course to enable students to succeed in degree-applicable credit courses (e.g., college orientation and guidance courses, discipline-specific preparatory courses)

_____ pre-collegiate career technical preparation course to provide foundation skills for students preparing for entry into degree-applicable credit courses

Criteria D. Adequate Resources (please initial as appropriate)

ld This course will be administered in the same manner as existing courses in terms of funding, faculty, facilities and equipment

Criteria E. Compliance (please initial as appropriate)

ld The design of the course is not in conflict with any law particularly in regard to enrollment restrictions and licensing or accreditation standards

Faculty Requestor: Lisa DeLapo

Date: 10/25/17

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

Division Curriculum Representative: Bill Ziegenhorn _____ **Date:** 12/1/17

Date of Approval by Division Curriculum Committee: 12/1/17

College Curriculum Co-Chairperson: _____ **Date:** _____

Chapter Title: WHO'S AFRAID OF FABRICATION? WHY TEACH DIGITAL FABRICATION NOW?

Chapter Author(s): BRENNAN BUCK

Book Title: Fabricate 2014

Book Subtitle: Negotiating Design & Making

Book Author(s): Fabio Gramazio, Matthias Kohler and Silke Langenberg

Published by: UCL Press. (2017)

Stable URL: <http://www.jstor.org/stable/j.ctt1tp3c5w.7>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://about.jstor.org/terms>



This book is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.



UCL Press is collaborating with JSTOR to digitize, preserve and extend access to *Fabricate 2014*

Fig. 1: Assembly One
Pavilion. Reflected light
at night.



WHO'S AFRAID OF FABRICATION? WHY TEACH DIGITAL FABRICATION NOW?

BRENNAN BUCK

Much of the intellect and capital invested in architectural education over the last ten years has gone into digital fabrication. Schools have acquired laser cutters, CNC mills, 3D printers, plasma cutters, water jets and robotic arms, and faculty and students have used them to produce experimental objects, surfaces, interiors and small structures. The arguments made by Bernard Cache, Greg Lynn and Mario Carpo that have inspired much of this work have become implicit for many instructors and some students. Always practice-driven, these ideas have seeped into the profession, enabling an expanding array of pavilion projects and fabrication competitions. In fact, CNC processes continue to revolutionise the building industry at all scales, but their potential in academia seems to have plateaued, isolated on the periphery as under-theorised electives and rarely playing a significant role in design studios.

There is always value for students in working with current technology at full scale with architectural materials, but is there still a relevant project to be found in teaching fabrication beyond the general benefits of craft? Is there a new argument to be made, following up on those about mass-customisation and consumer culture from Lynn or aesthetic notions of sameness and repetition from Carpo? Can or should fabrication play a more central role in design education?

The Assembly One pavilion, designed, fabricated and erected by Yale School of Architecture students in 2012, exposes some potential answers. The project evolved in the shadow of the Yale Building Project: a 40-year tradition in which first-year graduate students design and build a house using common residential construction techniques. But unlike the Building Project, which has always been defined through the lens of craft, the Assembly project was geared toward exploiting Yale's extensive CNC technology, and that focus on technology transformed not only the students' means of production, but redefined their approach to the project from the beginning. An alternate way of realising the project forced the students to rethink their roles as designers and ultimately uncovered an inversion of some basic assumptions about working digitally.

EXPLICIT, SEQUENTIAL PROCESS

Since nearly the initial introduction of digital techniques to architecture, they have been associated with Peter Eisenman's project of explicit process and indexical form. The autonomous programming languages that underlie software evoke Eisenman's vision of an intrinsic grammar for architecture's own internalised language. His strategic use of explicit, often sequential formal manipulations lent themselves to the distinct and numeric nature of digital transformations such as translation, rotation and scaling. As they proliferated, digital techniques have also been read repeatedly as a foreground process, indexicality, and the apparent 'difficulty' of design.¹ What the Assembly course revealed and made clear to the participating students, however, was the opposite – that the integral nature of the digital model absorbs individual design decisions and specific manipulations, rendering them indistinguishable. The integration of fabrication into the project forced the group of designers to work systematically rather than sequentially. In addition to larger scale factors like size and orientation on the site, a number of detail parameters were determined early on to suit the available fabrication technologies, including the use of sheet material, extruded geometry and applied colour. As a result, rather than moving down in scale from site to massing,



Fig. 2: Assembly One Pavilion on the New Haven Green during the International Festival of Arts & Ideas. (Photos: Chris Morgan Photography.)



Fig. 3: The structure is suited to a performance festival. Solid and massive from one angle, lightweight and almost entirely porous from another, it alternately hides and reveals its contents.

to structure, material and detail, responses had to be adapted to each constraint simultaneously and incorporated into a single design. The interdependence of each factor forced a process of trial-and-error integration and negotiation. The result was a completed project that cannot be easily read as indexical, i.e. as a record of a process or series of events.

But if the link between the architectural index and digital technique can indeed be broken, Eisenman's deeper interest in mediated authorship might still be preserved.

Explicit process gave Eisenman an alternative to architecture's humanist focus, dominant since the Renaissance, a way to challenge his own intuitive authorship. Alejandro Zaera-Polo, writing an introduction to Eisenman's work in *El Croquis* in 1997, describes this critical tactic: 'By replacing the origins, the presence and the author by arbitrariness, absence and machinic behaviour, he has found the recipe for a non-conservative resistance.'² Zaera-Polo cites the Arnoff Center in Cincinnati as the best example to date of this machinic process. Zaera-Polo's extensive description of each successive formal manipulation, sequential 'displacements', 're-orientations', 'asymptotic tilts' and 'exponential overlaps', is supplemented by a 'flow chart' placing each move in a rationalised, if still arbitrary sequence.³



Fig. 4: Constructed from thin aluminium sheets, the pavilion opens up on two sides for ventilation and security, focusing the view toward the festival's main stage. (Photo: Chris Morgan Photography.)



Fig. 5: From one particular point, the pavilion is entirely porous, nearly disappearing.

At the time, it appeared that emerging software would allow Eisenman to extend this trajectory, rendering each step in the sequence even more explicit and partitioned from the vagaries of intuition. A version of Zaera-Polo's flow chart can be seen in every published Grasshopper screenshot: a segmented and rationalised sequence of geometric and data translation. However, this sequence is an abstraction of the temporal process involved, one where input parameters, transformations and resulting geometry are constantly being adapted and re-linked. As Patrik Schumacher maintains, the digital model can now easily become so information-rich that it becomes circular, looping back to incorporate ever more constraints simultaneously. In fact, the digital design model may open up an alternate model of mediated authorship, one that 'produces results far beyond the architect's "natural" range.'⁴

SYNTHETIC AND SIMULTANEOUS PROCESS

At a small scale, the Yale Assembly project cast the differences between a project developed in models and drawings and one developed for fabrication in stark contrast. Both Assembly One and the Yale Building Project entail an elaborate design, mobilisation and construction process that involves both collaboration and delegation. In the case of the Building Project,

stick frame construction and some form of contextual deference are assumed, leaving the students to work out the massing and interior organisation first before developing strategies for windows and doors, materials and the landscape. Later, once a specific design is chosen, the class tackles the specifics of structure, detailing, furnishing and material sourcing. As they work, their models and drawings shift from small studies of masses on the site to larger iterations of rooms and details. The entire sequence is a cascade of development that generally moves from the large scale to the small, from the apparently important concerns of site and program to the less consequential questions of character and environment.

The group of 13 students designing the Assembly One pavilion was initially drawn to a similar sequence, diving into the site and potential massing shapes initially before realising that the potential of material, detail and structure were actually the central questions to consider. Their process jumped between considering the size and shape of the project on the Green, to the rigidity of multiple materials in different configurations, the visual and environmental effects of those forms and the limits of the project budget. Clearly, any design project rendered in any medium will incorporate at least this many decisions, but what became clear during assembly was a complete loss of scalar or temporal sequence. The massing of the project was reinvented countless times as the material, detailing or even the paint scheme changed.

This state of unstable interdependence was mandated by the digital model. This consisted of a two-dimensional structural pattern, a single point the pattern was extruded toward, and an inner and outer envelope used to trim away the extruded surfaces. Sketching or imagining any of the three in isolation was meaningless. What followed was a constant game of adaptation that took the students far from what they initially imagined.

DIGITAL DESIGN AUTHORSHIP

This synthetic structure affects the design process in several specific ways. First, the moment of inspiration is drawn out. Design conception no longer has the purity or immediacy of a momentary idea or quick sketch but emerges in unexpected ways over the course of the project. Second, the hierarchy of constraints is levelled. Fabrication projects privilege a different set of questions than building design projects that are developed through representation. Program and urban or site constraints are generally simplified in favour of material properties and perceptual effects, raising the elements of the

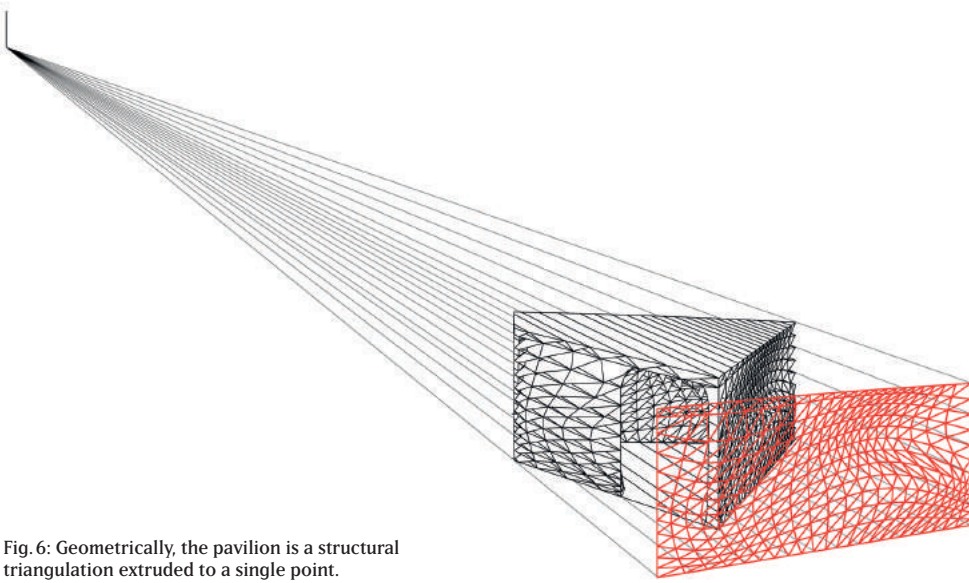


Fig. 6: Geometrically, the pavilion is a structural triangulation extruded to a single point.



Fig. 10: The aluminium was folded and riveted into corrugated layers.

Fig. 9: Twenty-three 'bricks' were fabricated at the architecture school and assembled on site.



Fig. 7: 300 sheets of aluminum were cut and painted at the Yale fabrication lab.

Fig. 8: Cut and painted sheets.

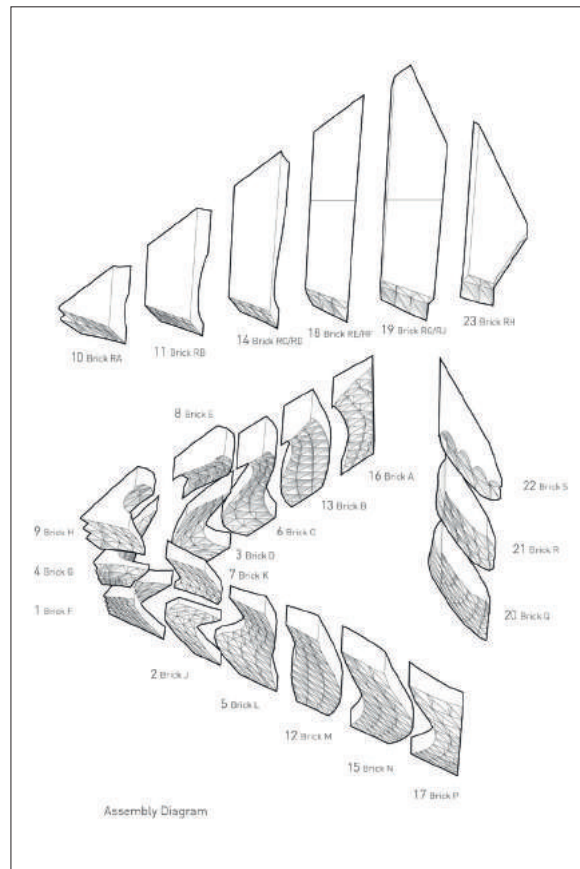


Fig. 11: One 'brick' partially completed.

Fig. 12: Despite the large scale of the structure, the pavilion remained very lightweight.



physical environment to the same status as site and program. Allowing this alternate structure for design to invade the design studio might raise alternatives to the still-prevalent sequence that begins with site analysis and massing sketches and ends with choices about material, detail and finish.

Eisenman posed mediated authorship as a way to free himself from his own intuition, but he also hoped to escape the constraints of dominant modes of production. The arbitrariness of the design process allowed him to temporarily ignore and potentially reinvent the way his own buildings are built.



Fig. 13: View through the structure on the New Haven central green.

Assembly suggested the reverse: that the imposed structure of digital fabrication enables its own form of mediated authorship. An expanded set of production techniques allows architects and students to transform the way they design. Even without rendering the design process explicit, digital modes of design and production may help students transcend the assumptions and brackets they bring to their work and reframe the way they make architecture.

CREDITS

The Assembly One pavilion was designed and built by Yale School of Architecture students.

PROJECT FOUNDERS: David Bench, Zac Heaps, Jacqueline Ho, Eric Zahn

PROJECT MANAGERS: Jacqueline Ho, Amy Mielke

DESIGN & FABRICATION: John Taylor Bachman, Nicholas Hunt, Seema Kairam, John Lacy, Veer Nanavatty

DESIGN: Rob Bundy, Raven Hardison, Matt Hettler

FACULTY ADVISOR: Brennan Buck

ASSISTANT: Teoman Ayas

CONSULTANT: Matthew Clark of Arup, New York

Photos by Chris Morgan Photography

NOTES

1 Greg Lynn's early experiments with alias software tracked the iterative deformation of primitive solids; Lars Spruybroek's vivisection structures, including his H₂O Pavilion, were defined by sequential ribs; Robert Somol has criticised digital technique for producing inaccessible, difficult architecture.

2 Alejandro Zaera-Polo, 'Eisenman's Machine of Infinite Resistance', *El Croquis*, 83 (1997), pp. 50–63.

3 Ibid.

4 Patrik Schumacher, *The Autopoiesis of Architecture. Volume II: A New Agenda for Architecture* (Chichester: Wiley, 2012), p. 338.



what

fabrication

job title, keywords or company

where

Los Altos, CA

city, state, or zip

Find Jobs

Advanced Job t

fabrication jobs in Los Altos, CA

My recent searches

design thinking - Los Altos, CA - 118 new

3d design - Los Altos, CA - 57 new

» clear searches

Sort by: **relevance** - date

Distance:

within 25 miles

Salary Estimate

\$35,000 (609)

\$50,000 (486)

\$70,000 (372)

\$80,000 (290)

\$95,000 (132)

Job Type

Full-time (716)

Contract (29)

Part-time (23)

Internship (14)

Temporary (13)

Commission (3)

Location

Fremont, CA (131)

[Upload your resume](#) - Let employers find you

Jobs 1 to 10 of 767

Show: **all jobs** - 45 new jobs

SMT Operator - new

Lenthor Engineering, Inc. - Milpitas, CA 95035

\$15 - \$18 an hour

Is the leader in Flex and Rigid-Flex PWB design, fabrication and assembly with over 30 years of experience meeting and exceeding our customer's expectations...

[Easily apply](#)

Sponsored - 8 hours ago - [save job](#)

Shop and Fabrication Specialist

Elephant Racing LLC - Santa Clara, CA 95054

The Shop and Fabrication Specialist is responsible for light welding, machining, fabrication and assembly of our products.The successful candidate will have...

[Easily apply](#)

Sponsored - [save job](#)

SMT Quality Inspector - new

Lenthor Engineering, Inc. - Milpitas, CA 95035

\$15 - \$18 an hour

Is the leader in Flex and Rigid-Flex PWB design, fabrication and assembly with over 30 years of experience meeting and exceeding our customer's expectations...

[Easily apply](#)

Sponsored - 8 hours ago - [save job](#)

Manufacturing Engineer, PCB and PCBA

Google - ★★★★★ 1,802 reviews - Mountain View, CA

[Be the in Los](#)

My email:

Also get just for me

[Activate](#)

LINC84Bfab.pdf

Digital Fabrication and 'Making' in Education: The Democratization of Invention

Paulo Blikstein (paulob@stanford.edu)

Assistant Professor, Graduate School of Education and (by courtesy) Computer Science Department

Stanford University

1. The Democratization of Invention

1.1 Digital Fabrication: Logo for Atoms

A quote often attributed to Seymour Papert states that if a teacher from the 16th century would time-travel to the present, he or she would have no problem entering a school and teaching a class. Historical documents from that time show that he could not be more accurate. The Treviso Arithmetic, from 1478, teaches students how to do multiplication and division using 'exactly' the same paper-based algorithms we use today. Several descriptions of 16th century schools and their curricula look strikingly similar to today's mathematics classes, such as a well-known school in Florence run by Master Francesco Ghaligai in 1519 which had a "...heavy emphasis on memorization and procedures" and a curriculum comprised of units on "multiplication, practice in the use of algorithms, division, fractions, and the rule of three" (Swetz & Smith, 1987).

A thriving 15th century Venice saw the appearance of the Treviso Arithmetic in a time of great need for a new type of mathematics. The Indo-Arabic system was proving itself to be faster and more practical than the abacus, and soon Venetians realized that it was also easier to learn. All the pieces were falling into place: a new set of societal needs, new technologies, new ways of using knowledge, and the recognition that a task previously monopolized by experts was potentially accessible to the masses ('restructurations,' Wilensky & Papert, 2010).

Every few decades or centuries, a new set of skills and intellectual activities become crucial for work, conviviality, and citizenship—often democratizing tasks and skills previously only accessible to experts. Fast forward to the early seventies: computer programming was becoming one of those new activities (Papert, 1991). But computers in those years were large, expensive, awkward machines, and the idea of using them as a medium for personal expression and learning was inconceivable—in the same way that the abacus establishment derided the Treviso techniques. The educational establishment put down the idea of programming as a fundamental pedagogical goal: it was too difficult for children to learn, and

unlikely to improve learning in math and science.

However, since the seventies, researchers have been hard at work creating tools to make programming easier to learn. Programming tools such as Scratch (Resnick et al., 2009) and NetLogo (Wilensky, 1999) have achieved unprecedented popularity and made coding accessible to millions of students and teachers. The world caught up with the idea that not only computational media could be a vehicle for powerful ideas in mathematics, engineering, and science—an important new kind of literacy—but it was an approachable activity in schools.

Digital fabrication and ‘making’ could be a new and major chapter in this process of bringing powerful ideas, literacies, and expressive tools to children. Today, the range of accepted disciplinary knowledge has expanded to include not only programming, but also engineering and design (Astrachan, Hambrusch, Peckham, & Settle, 2009; Yasar & Landau, 2003). In addition, there are calls everywhere for educational approaches that foster creativity and inventiveness.

The analogy with the development of Logo is clear: simultaneously, digital fabrication technology became better and more accessible, and the intellectual activities enabled by the new technology became more valued and important. What Logo did for geometry and programming – bringing complex mathematics within the reach of schoolchildren – fabrication labs can do for design and engineering. Digital fabrication is Logo for atoms.

In this chapter, I will first briefly review the history of engineering education to show the rise and fall then rise again of the making and building as curricular foci. I then discuss the theoretical underpinnings of project-based, student-centered, constructionist learning, showing that much of what digital fabrication labs can enact was already predicted and advocated in the theories and writings of John Dewey, Seymour Papert, and Paulo Freire. The following section approaches the educational benefits of digital fabrication and how it could be a unique tool in the hands of progressive educators. In the final part of the chapter I present not only four prototypical episodes that exemplify the advantages and perils of FabLabs in schools, but also some guidelines for the design of learning environments incorporating these types of technologies.

1.2 Technological Knowledge: From Skills to Literacy

In 1999, the National Research Council issued a landmark report stating that technology was changing too fast for the ‘skill-based’ approach to be effective and instead called for a ‘fluency’ approach. They suggested technological education to include the development of adaptive, foundational skills in technology and computation, in particular “[intellectual] capabilities [to] empower people to manipulate the medium to their advantage and to handle unintended and unexpected problems when they arise” (National Research Council, 1999).

The same concerns were echoed in the later report, “Technically Speaking: Why All Americans Need to Know More About Technology,” which confirmed the demise of the “computer skills” approach and recognized that decades had been lost teaching dated skills to millions of students. It called for a move

from ‘computer skills’ towards ‘computational fluency’ or ‘literacy’ (diSessa, 2000) and broadening technological literacy to include basic engineering knowledge, and the nature and limitations of the engineering design process (National Research Council, 2002).

The report also introduced an important distinction, which resonated with the concerns of educational theorists such as Seymour Papert and Andrea diSessa: the recognition of a difference between ‘technological literacy’ (a general set of skills and intellectual dispositions for all citizens) and ‘technical competence’ (in-depth knowledge that professional engineers and scientists need to know to perform their work). The distinction identifies fluency with technology as no longer a vocational skill or a way to train future science, technology, engineering and mathematics (STEM) workers, but knowledge valuable for every citizen. Since the publication of the 2002 “Technically Speaking” report, several other developments in research, technology and policy have further supported this need: the acceleration of technological innovation, further automation of routine jobs (Levy & Murnane, 2004), ubiquity of open-source hardware and software, and the development of low-cost digital fabrication tools (Gershenfeld, 2007). These national reports and societal developments are noteworthy because they signal the mainstream acceptance of Papert’s once controversial vision. Taken together, the once dismissed idea of children programming computers was not only embraced, but developed into a much larger vision of students participating in sophisticated activities that were previously restricted to specialized professionals, such as robotics, environmental sensing, data analysis, advanced science, and engineering design.

1.3 The Demise of the Shop Class and the Rise of the Digital Fabrication Lab

Notwithstanding the natural content overlaps amongst science and engineering disciplines, they are fundamentally different. While a scientific investigation is typically concerned with finding the one law to explain many natural phenomena, a technological investigation typically finds many solutions for the same problem (Atkin, 1990). A typical school science lab is designed for rigorous, disciplined, and scripted experiences in which students are guided towards the re-discovery of a unifying principle. School science labs are architected to facilitate and optimize such a process—but would those spaces be appropriate for engineering and design?

Despite engineers’ dependence on basic scientific knowledge to do their work, their epistemology even precedes science; humans have been creating tools and altering their environment much before the inception of the scientific method. In fact, engineers’ ‘ethos’ as inventors and tinkerers, in both K-12 and college education, survived up to the fifties and sixties, after which there was a significant push towards analysis and mathematics, and away from traditional “shop work,” (Grinter, 1955), which was overwhelmingly present in curricula during the first half of the 20th century (Dym, 1999). The ‘professional engineer’ of the first half of the 20th century was replaced by the ‘scientific engineer’ of the second half (Tryggvason & Apelian, 2006), mostly motivated by the end of the abundant Apollo-era funding—less expensive theoretical classes prevailed over engineering labs or design work (Feisel & Rosa, 2005). Over time, this resulted in the removal of the engineering design experience from not only college curriculum, but also from K-12 education. Shop class became “vocational education” for those

who supposedly could not handle ‘serious’ math or science.

Two independent processes started to reverse this trend. First, around the eighties, faculty and employers started to feel that the design-deprived engineering graduates were not well prepared do to any real engineering design work, which had started to become more important (Sheppard & Jenison, 1997). Second, in the early 2000s, prototyping equipment, such as laser cutters and 3D printers, dramatically dropped in price, and Open Source hardware further popularized these technologies. Suddenly, corporate product development moved towards a “studio” model in which groups of engineers and industrial designers could create prototypes in days instead of months: consequently the nature of product engineering was radically transformed. Gershenfeld and colleagues (Gershenfeld, 2007; Mikhak et al., 2002) at MIT were the first to package such equipment in a standardized low-cost lab and deploy it in both community centers and universities around the globe: the FabLab was born. Gershenfeld’s network of FabLabs quickly spread in all five continents, and spurred a vibrant global movement. Four years later, in 2005, the MAKE Magazine, a monthly publication dedicated to DIY enthusiasts and tinkerers was created, and soon after the Maker Faire, a large science and engineering fair in California, launched with great success.

2. Dewey, Papert, and Freire: Theoretical Pillars for Digital Fabrication and ‘Making’ in Education

Toward the end of the 2000s, researchers and educators started to consider the use of digital fabrication in education. In 2008 Stanford University launched the FabLab@School project, and started building FabLabs in K-12 schools around the world. In 2009 the MC2STEM High School in Ohio (USA) opened its first digital fabrication lab. In 2011 the Maker Media launched the MakerSpace project with DARPA funding. In 2011 and 2012 alone countless museums, schools, community centers, and libraries announced plans to build digital fabrication and ‘making’ facilities—it became mainstream. Despite this resurgence of fabrication labs and “making” in formal and informal settings, the ideas behind this movement are at least a century old. Digital fabrication and “making” are based on three theoretical and pedagogical pillars: experiential education, constructionism, and critical pedagogy.

Since Rousseau’s invention of childhood (Rousseau, 1961), progressive education theorists have been questioning the prevalent assumptions of their time regarding the project of education, and have been prescribing more experiential, student-centered approaches. The idea that education should be more experiential and connected to real-world objects is originally attributed to John Dewey but also to many other scholars and innovators (Dewey, 1902; Freudenthal, 1973; Fröbel & Hailmann, 1901; Montessori, 1964, 1965; von Glasersfeld, 1984).

Critical pedagogy scholars (Freire, 1974; Illich, 1970), Freire in particular, criticized school’s “banking education” approach and the decontextualization of curriculum. Freire introduced the idea of culturally meaningful curriculum construction, in which designers get inspiration from the local culture toward creating “generative themes” with members of these cultures. Freire was also an advocate for education

as a form of empowerment, and argued that learners should go from the “consciousness of the real” to the “consciousness of the possible” as they perceive the “viable new alternatives” beyond “limiting-situations” (Freire, 1974). Therefore, students’ projects should be deeply connected with meaningful problems, either at a personal or community level, and designing solutions to those problems would become both educational and empowering (Blikstein, 2008; Cavallo, 2000).

Seymour Papert shares Paulo Freire’s enthusiasm for unleashing the latent learning potential of students by providing environments in which their passions and interests thrive. A mathematician by training, who then worked with Jean Piaget for many years, Papert pioneered the use of digital technologies in education. Yet Papert’s reasons for advocating the use of computers in education are far from technocentric (Papert, 1987)—some of his motivations are very similar to Freire’s. Papert’s Constructionism builds upon Piaget’s Constructivism and claims that the construction of knowledge happens remarkably well when students build, make, and publicly share objects. His theory is at the very core of what “making” and digital fabrication mean for education, and underlie what many enthusiasts of the “maker movement” propose—even if many are not aware of it. Papert’s words describe precisely the relationship between making and learning: “Construction that takes place ‘in the head’ often happens especially felicitously when it is supported by construction of a more public sort “in the world” – a sand castle or a cake, a Lego house or a corporation, a computer program, a poem, or a theory of the universe. Part of what I mean by ‘in the world’ is that the product can be shown, discussed, examined, probed, and admired [...] It attaches special importance to the role of constructions in the world as a support for those in the head, thereby becoming less of a purely mentalist doctrine.” (Papert, 1980, p. 142).

Papert advocates technology in schools not as a way to optimize traditional education, but rather as an emancipatory tool that puts the most powerful construction materials in the hands of children—again, another idea that inspired the resurgence of the ‘maker’ sensibilities. These protean machines which would enable students to design, engineer, and construct would cater to many forms of working, expressing, and building. This chameleonesque adaptivity, which is embedded in technology, permits the acknowledgement and embracing of different learning styles and epistemologies, engendering a convivial environment in which students can concretize their ideas and projects with intense personal engagement. In a typical Constructionist learning environment, there is rarely a fixed curriculum. Children use technology to build projects, and teachers act as facilitators of the process.

The Logo programming language was the first attempt in education to demonstrate that the computer is not only an information and communication device, but also an expressive tool for construction and self-expression. In the early nineties, Papert, Mitchel Resnick and Fred Martin extended the powerful ideas of Logo to the physical world by making robotics accessible to children through the Lego Mindstorms kit and the Cricket (Martin, 1994; Martin & Resnick, 1993), and together with collaborators did extensive work on robotics and ‘making’ workshops using microcontrollers and sensors (Resnick, Berg, & Eisenberg, 2000). Sipitakiat and Blikstein extended this work to developing countries and low-income communities by working with low-cost hardware as well as repurposed materials (Blikstein, 2008; Sipitakiat, 2000; Sipitakiat, Blikstein, & Cavallo, 2002, 2004). More recently, new developments are putting cutting-edge hardware and software in the hands of children to conduct advanced scientific

explorations (Blikstein, 2010; Blikstein, Fuhrmann, Greene, & Salehi, 2012), create interactive textiles (Buechley, 2006; Buechley & Eisenberg, 2008; Buechley, Eisenberg, Catchen, & Crockett, 2008), build electronic jewelry (Perner-Wilson, Buechley, & Satomi, 2011; Sylvan, 2005), design participatory simulations and games (Wilensky & Stroup, 1999), program videogames (Millner & Resnick, 2005; Kafai, 1995), design virtual robotic systems (Berland, 2008; Berland & Wilensky, 2006), create sophisticated 3D worlds and games through programming (Cooper, Dann, & Pausch, 2000), build new types of cybernetic creatures (Raffle, Parkes, & Ishii, 2004; Schweikardt & Gross, 2006) and explore environmental science and geographical information systems (Edelson, 2000).

These toolkits and technologies prepared the ground for the popularity of the ‘maker’ movement and digital fabrication. They showed that it was possible to engage children in complex uses of technology, that those same children could actively construct with technology rather than just consume technological products. They revealed how the ideas and intellectual passions of children could be powerful and generative, and that the perceived difficulties of many of those tasks were due to deficient design rather than learners’ cognitive deficiencies. Rather than random developments, these new technologies, materials, and toolkits were deeply influenced by the theoretical constructs put forth by Dewey, Papert, and Freire, around constructive uses of technology, culturally-aware education, experiential learning, and interest-driven curricula.

3. Why Do We Need Digital Fabrication Labs in Schools?

The plethora of constructionist toolkits created and deployed in the 2000s, with improved and friendlier designs, coincided with the development of the FabLab concept by Neil Gershefeld at MIT and the popularity of the Maker Faire—the perfect storm was in place. At that time, after having conducted tens of robotics and ‘invention’ workshops in schools, I was disappointed by the fact that students did not have a place to continue and deepen their projects—and projects would die after the workshop or the final expo. Schools manifest how they value a particular activity by building a space for it. If sports are important, schools build a gym and a basketball court. If music education is in demand, schools set up music rooms. Only then can likeminded students gather together, hang out, do projects, talk about them, and create a productive subculture in schools. Unfortunately, I realized that there was no such space for engineering and invention. Even when schools had robotics labs, they were highly gender-biased and not inviting for most students. Robotics labs and science labs were not disruptive spaces anymore. Therefore in 2008 I started to work with schools around the world to establish digital fabrication labs—the FabLab@School project was born.

I realized that digital fabrication had the potential to be the ultimate construction kit, a disruptive place in schools where students could safely make, build, and share their creations. I designed those spaces to be inviting and gender-neutral, in order to attract both the high-end engineering types, but also students who just wanted to try a project with technology, or enhance something that they were already doing with digital fabrication.

Both programming and educational robotics enhanced an existing activity with a powerful new

expressive medium. Logo programming reinvented differential geometry by adding computer algorithms to children's everyday bodily movements – forward, turn right, turn left. Robotics kits added computational behaviors to familiar materials – crafts, Legos, wheels – and behaviors – “light up if dark,” “bounce off the walls,” “follow the dark line.” Each one of them made possible for new forms of expressiveness by adding a carefully designed technological layer to everyday, familiar materials and practices.

Digital fabrication is a new chapter in this story. Especially in low-income schools, students would often tell me that they used to ‘make’ and build things with their parents and friends, and often had jobs in garages, construction companies, or carpentry shops. However that experience was disconnected from their school life, since they did not see a link between the intellectual work in the classroom and the manual labor in the wood shop. Because of bias inherit within the educational system their own forms of engineering and tinkering, stripped down of any form of mathematical or scientific content, were looked down upon by society and by themselves.

Enhancing existing practices and expertise. One of the first and most striking results of the initial workshops in digital fabrication is that students reported have gained a new appreciation for the ‘manual’ labor they used to do, and also for the occupation of their parents. In the lab, students had to first design their creations on a computer, often after several types of measurements and calculations. However, they were still constructing, building, and using their hands, but all the work was permeated with two socially valued practices: computation and mathematics. Again, the familiar practices of building and making were augmented with computational tools, which generated not only more refined and sophisticated projects, but also empowerment and increased self-esteem. This proved to be a crucial Freirean principle for the design of digital fabrication experiences. By building onto students’ familiar practices and adding a layer of expressive technologies, a digital fabrication lab, which merges computation, tinkering and engineering, has the potential to augment rather than replace familiar and powerful practices that students already possess, therefore they can recognize their own previous expertise in what they accomplish in the lab, rather than acquiring a new identity altogether.

Accelerate invention and design cycles. An additional benefit of digital fabrication is that it accelerates the processes of ideation and invention. It eliminates manual dexterity as the “middleman” in transforming an idea into a product, so students can focus their attention on improving the design rather than taking care of mundane issues with the materials—and many more cycles of redesign are possible in the same time interval. Moreover, as I consistently observed, the fact that the products generated in the laser cutter and the 3D printer were aesthetically pleasing had a strong impact in students’ self-esteem—instead of taking home asymmetric and fragile cardboard prototypes, they were building functional 3D objects with a near-professional finish—it wasn’t ‘school stuff,’ it was the ‘real thing.’

Long term projects and deep collaboration. We also observed that the establishment of this new space in schools allowed students to engage in intellectual activities and practices that would not be possible anywhere else, and experience new ways of work and novel levels of team collaboration. A real engineering project takes several cycles of design and redesign. It does not fit the one-size-fits all 50-minute format. The digital fabrication lab provided a ‘safe space’ for long-term projects, which in turn

enabled students to face (alone or in groups) a new and intense experience: failure. Learning how to manage failure—something rarely taught in schools—ended up being another crucial educational benefit of the lab work. As we will see in many of the vignettes, through several cycles of failure and redesign, students not only achieved incredibly original and complex designs, but also became more persistent, learned to work in heterogeneous teams, and became better at managing intellectual diversity.

4. Four Vignettes and Many Lessons About Digital Fabrication in Education

In the following four vignettes, I will discuss positive and negative scenarios of the implementation of digital fabrication in education based on the categories I just described. I will exemplify some of the learning outcomes, and offer recommendations for the design and management of such spaces. Each vignette will illustrate one or two important principles, and in particular I will discuss (a) the dangers of trivialization, (b) the potential for deep engagement in projects of unprecedented complexity, (c) the power of interdisciplinary work; (d) Contextualized learning in STEM, and (e) intellectualization and re-evaluation of familiar practices.

4.1. The ‘Keychain Syndrome’, or the Temptations of Trivialization

For the first digital fabrication workshops we held in 2009, I designed introductory activities to get students acquainted with the machines: semi-structured short projects such as creating a keychain, a nametag, or an acrylic sign for a sports team. On a technical level these projects required students to learn how to cut and engrave using the laser cutter, use vector drawing software to create and combine geometric shapes, and import/manipulate bitmapped images from the web.

I assumed that by asking them to create highly-personal objects, such as keychains and nametags, students would get excited about the technologies not only because they would create objects for everyday use, but they would ‘decorate’ their rooms, school materials, and clothes with them, attracting the attention of family members and other students in the school. They would feel proud of their creations and associate their newly acquired engineering skill to the production of socially valued artifacts.

Students engaged with enthusiasm in the creation of their keychains. The plan worked. For the second session, they came back even more excited about their objects – parents, friends, even teachers wanted an acrylic keychain. Students lined up by the laser cutter to make more keychains. Excitement was in the air. Digital fabrication was succeeding, and students – both girls and boys – were very excited about “making stuff.”

By the third session, my team had decided that it was time to move on to new activities – in particular, I wanted to introduce robotics and electronics. I rounded up students at the beginning of the session and ran a short robotics tutorial, teaching them how to hook up sensors and motors, and write simple

programs. At the end of the workshop, some students came to talk to me and asked permission to use the laser cutter for some new keychains. I postponed robotics for another day. By the fourth session, I knew something was wrong. The workshop became a keychain factory, and students would not engage in anything else. The plan worked too well – it backfired. Students found an activity that was personally meaningful, produced professional looking products that were admired and envied, and used a high-tech device. However, as much as it was a very effective solution to engage them in digital fabrication, it offered a too big reward for a relatively small effort, to produce an object that did not include any computation or complex constructive challenges. Ironically, it is as if students had discovered exactly what manufacturing is about – mass-producing with little effort – and were making the best of it. Students “cracked” digital fabrication and were using the lab as a fabrication facility, rather than a place for invention.

The following dialogue, which took place several days into the workshop, illustrates the seductions of the “keychain syndrome”:

Facilitator: What would you do if you had a laser cutter at home?

Megan: I would make keychains.

Nancy: Yeah, and sell 'em.

Facilitator: Keychains? What kind?

Megan: Like, these (she takes out a collection of keychains that she had recently printed)

Facilitator: Anything else?

Megan: No, just keychains.

But there was a more systemic issue at play – “friends and family” were focusing on the only values that they know, not coincidentally values which schools have traditionally focused on: valuing ‘product’ over ‘process.’ In that sense, digital fabrication is a type of Trojan horse: it introduces in schools a “genre” of tools that have the very special property of easily generating aesthetically pleasing, almost magical products. Therefore, for the student-creator, there is a conflicting incentive: (i) obfuscate the simplicity of the process (“I used this laser cutter machine, it’s science fiction, it’s really complicated”), and enhance the value of the product to others, or (ii) make the process transparent (“I used the laser cutter, it’s actually not so hard to do keychains, the machine did most of the work!”), and reveal the triviality of the product.

For the educational designer and facilitator, it is fundamental to understand this incentive system to avoid this potentially harmful aspect of this ‘genre’ of machines. The feedback loop that the first incentive (obfuscating the simplicity of production) generates is that students get engrossed in the production of the same type of simple products. In the case of the second incentive, students are led to “un-trivialize” the product given the new level of product complexity that digital fabrication enables them to achieve. In the first case, despite appearances, we ‘schoolify’ and trivialize the lab, in the second, we make it a place for excellence and inquiry. The solution, however, is not inconsequential – while the product-over-process conundrum does not resolve itself, there will always be an incentive for simple,

well-polished products, as opposed to messy, complex, and potentially ‘ugly’ projects. Unless educational designers unveil the real incentive systems at play in the classroom, teachers who reward students based on quick completion times, quality of solution, and efficiency, might actually be fostering classrooms in which students rarely venture outside of what they already know (Abrahamson, Blikstein, & Wilensky, 2007).

The “keychain syndrome,” therefore, revealed two of the crucial elements of learning environments based on digital fabrication. First, the equipment is capable of easily generating aesthetically attractive objects and products. Second, this generates an incentive system in which there is a disproportionate payoff in staying a ‘local minimum’ where the projects are very simple but at the same time very admired by external observers. Settling for simple projects is a temptation that educators have to avoid at all cost. The non-triviality of navigating these new incentive systems was one of the important lessons learned in these early workshops.

4.2. The Upside-down Roller Coaster, or the Power of Despair

Before coming to one of the digital fabrication workshops, John, Tyler, and Bob found themselves brainstorming about what to build. One of their oddest ideas was to build a roller coaster in their backyard. After the first few days of the workshop they decided to tackle it—but clearly more as a playful thing to do, without much hope of actually building it. Their first step was to scale down the project from a backyard to a ‘tabletop’ rollercoaster. They then imagined that the process would be quite straightforward: designing the tracks on a vector-drawing software, “printing” using the laser cutter, and assembling everything.

When they started the design, the first problem came about: how to make curved tracks with uniform width? They realized that they could not just use any type of lines to curve the track, as an uneven track would cause the car to get stuck. Their first challenge was to solve a geometrical puzzle: Should they make tracks using the freehand tool? Bezier curves? Other kinds of curves? Should they create two perfect arcs? Should the arcs have the same radii?

In such an environment, there are no right answers, so these debates take a long time. After a day of discussions and experimentation, they ended up using arcs to create the smoothest possible curve while retaining the width of the track, and printed them out on the laser cutter. However, they realized that they had another problem in hands: the sharpness of the turns, which would make the car “lose most of its speed.” After much bending and warping of the track, they eventually decided to scrap this design and start from scratch. Tyler worked on the new design, now with much wider turns, which seemed to work better (see Figure 1).

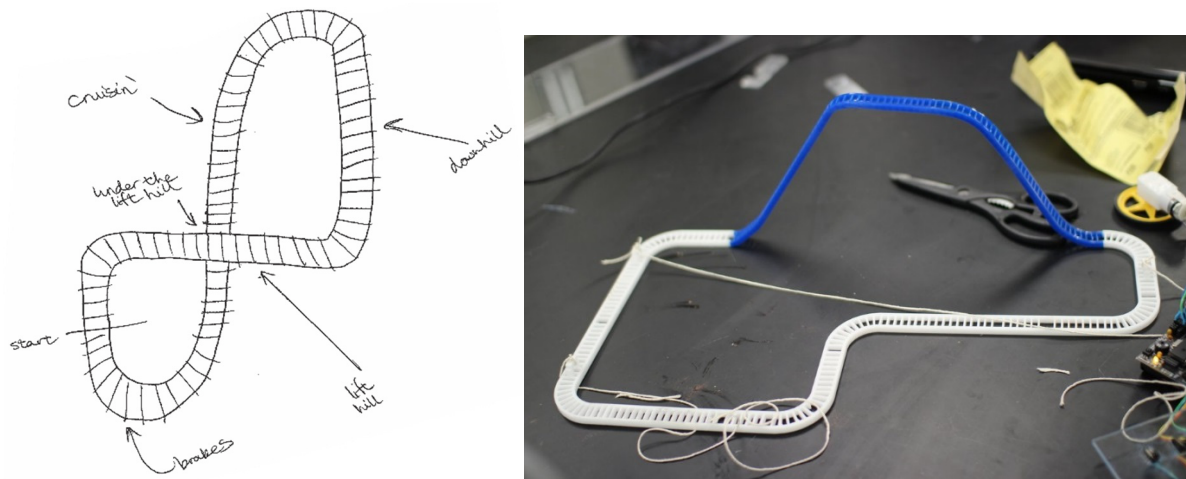


Figure 1. The initial plan for the rollercoaster track (left), and the second design (right)

Another problem that presented itself was the car. Several ideas were proposed for its design. Initially students were considering a normal rollercoaster car that would just roll on top of the track. They tried several designs, with and without wheels, but soon realized that friction was again making the car lose speed. After much brainstorming, they came up with a new idea: a hanging car under the track, which would have much less contact area and thus minimize friction. The group then designed the hanging car and printed it on the 3D printer. However, another problem arose: students realized they would have to suspend the track so that the car would not touch the table, and could not think of a reasonable way to accomplish it and maintain balance. They went back to the car-on-top idea, now with a better design for the wheels. After a day of hard work, they thought they had the final design, and printed everything. The first test was a disaster: the car did not have enough power to make it around the entire track. The original idea was to rig a device to bring the car to the top of the big hill, and let gravity do the rest. Students attempted several methods to bring the car to the top of the hill, from using magnets to attempt to pull the car up the track, to using a string towrope to pull it up the hill. After hours of failed experiments, they came to an even more devastating realization. Gravity would not provide enough energy to make the car go around the entire track—too much momentum was lost in turns and due to friction, and the plastic car was too light to accumulate enough potential energy. They gave up on gravity, and started considering other options. Their next idea was to rig a sail up on the car and use a battery-powered propeller to provide wind. But they again ran into problems, first with attaching the sail, then with the issue that the force applied to the sail pushed the nose of the car down without moving it. They realized this was due to one of two elements: either the fact that they were using a central wheel system, thus not providing stability in the front or back, or that the wheel system was not providing enough grip, thus the car was not stable enough. Students threw the design out the window, and one team member gave up on the project.

At this point, the rest of the team was desperate, asking everyone in the lab for ideas and help. They had spent almost two weeks on the project and nothing seemed to work – frustration was in the air. Some facilitators volunteered to help and come up with new ideas, and when just about everything seemed to

be a failure, one revolutionary idea emerged: instead of having the car go around the track, why not make the track go around the car? The main problems arose from the fact that it was too difficult to power a tiny car without any motors, since the car was too small for that. So what about turning the problem on its head, and move the track instead? The suggested a design would treat the track as a puppet, with strings attached to each of its corners, and motors pulling them up and down – then they could easily use gravity again. Students took on the challenge, printed another track, created an acrylic frame, attached motors and programmed the GoGo Board (Sipitakiat et al., 2004), and in a few hours had a working prototype (Figure 2.)

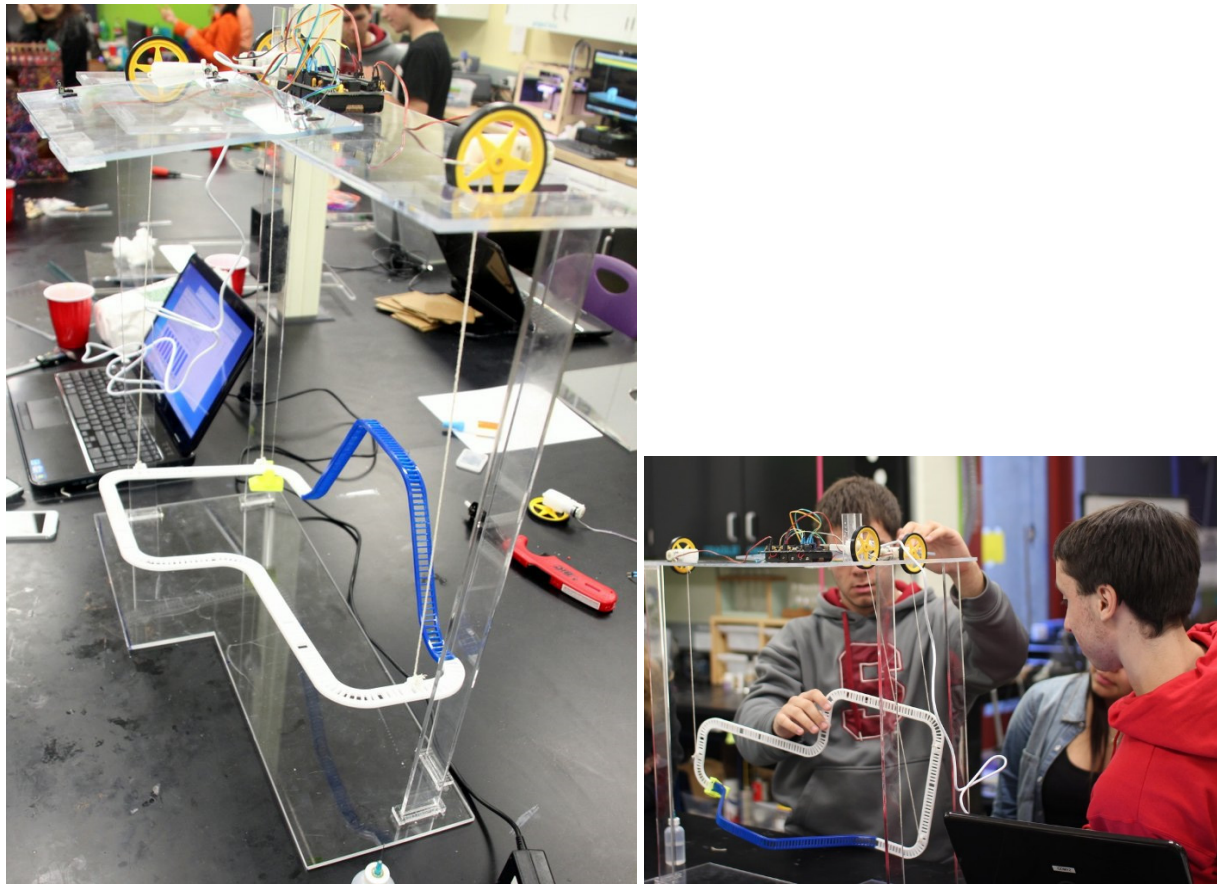


Figure 2. The upside-down rollercoaster

This episode illustrates the working dynamics in a digital fabrication lab or ‘maker space’ along many dimensions. First, it promoted contextualized encounter with scientific knowledge and lexicon. During the two weeks of the project, students struggled with several physics problems, some of which they knew about but had never seen in real life. Their dialogue, which initially was about the “losing speed,” became increasingly complex, rigorous, and compliant with the lexicon of physics: for example, “speed” became “momentum,” and the generic statement that the car was “losing speed” was later decoupled into friction, number of turns, angle of turns, and lack of initial potential energy. They also identified several causes for friction, and discussed ways to minimize it by reducing the surface area, the friction

coefficient, or making the car hang from the track. Physics, engineering, and problem solving were organically connected a part of a seamless process, which is what happens when professional engineers work on projects.

Second, the space was flexible with students' contrasting attitudes towards failure. The narrative of this episode is as baffling and meandering as the project development was. There were no easy answers for the problems that students were facing. The group went through a complex process, filled with frustration, failure, but also exhilarating success in the end. While Tyler, Bob, and John worked together for almost the entire program, they had very different styles in going about their projects. As a team, Tyler's optimism in the face of adversity worked as a great balance to John's aptitude for ideating. While John often drove the start of projects, it was Tyler who would use the inevitable failures to advance their goal. Tyler would often tell John "Things never work the first time, and that's okay." Almost every day they hit a fundamental problem with their design, and consistently came up with means to work through it. While Tyler took the constant setbacks in stride, accepting them as part of the engineering process, John considered them instead as embarrassing failures. Despite these differences, the team showed remarkable perseverance throughout in the project, and was able to use their different approaches to failure as a feature of their collective strategy of problem solving, rather than a difficulty. These students were able to experience realistic engineering design because they had the space and time to fail and try again, and a strong motivation to pursue their own idea. In short-term projects, scripted construction challenges, or time-constrained competitions, the class dynamics would have been radically different, and students would never have been able to experience these dramatic levels of failure and reward. Ultimately, their deep sense of achievement was a consequence of their visceral involvement in the construction of the rollercoaster, and the originality of their design was only possible because of the technical and emotional support that they had in order to withstand extended frustration, shake it up, and go back to the drawing board.

4.3. "The Most Math I Have Ever Learned in a History Class," or the Power of Interdisciplinary Projects

Digital fabrication is typically associated with the learning and practice of STEM disciplines. Laser cutters and 3D printer are "hard sciences" territory, and supposedly math and science teachers should be the ones primarily involved. In one of the projects in the Lincoln school, however, we had an unlikely scenario: Heather, a history teacher with many years of experience, wanted to bring her four 8th grade classes to the lab. She was not a typical early adopter of a digital prototyping lab – in one of our surveys, she rated herself at the bottom of the scale in knowledge about robotics, mechanical engineering, and computer programming. But Heather was not concerned in training future STEM workers. Her main goal fell within the disciplinary boundaries of History: she wanted her students to learn about great female characters in American history by building historical monuments for them, using 3D printing and laser cutting.

Heather's project illustrates two aspects of the implementation of digital fabrication in classrooms. First, I will show how she prepared herself for, and structured the activity. Second, I will narrate how a

complex and productive “division of labor” emerged from the project as a result of the interactions between the technical lab teacher and Heather.

She had gone through the digital fabrication training workshop and had basic understanding of how most of the equipment worked. Initially, she was not comfortable using the laser cutter by herself, though. However, we had set up the lab with a full time technical lab person that could help teachers and students to operate and learn the machines. Thus Heather did not feel she had to master all the tools before starting to work with her students, or that she would be alone with the students exploring all of the unfamiliar territory of the lab.

Even though Heather was not well versed in programming or engineering, she was comfortable using unfamiliar technologies in her classroom. Part of her method was to experiment with the technology ‘as a learner’ before even starting working with students. Therefore, two days before the start of the digital fabrication activity, she created her own historical monument using the digital fabrication equipment. She went through the entire process herself and understood the challenges and difficulties in building it. Thus when she started working with students, she not only felt more comfortable facilitating the activity, but could also predict bottlenecks and difficulties. She became aware of how much technical expertise was needed to facilitate the project, and realized that the help of the lab’s technical coordinator, David, would be crucial. As the activity unfolded, Heather’s role evolved to be a project manager, and David’s to be a design helper and an equipment operator. Heather set class goals, checked in on the groups, volunteered to laser cut pieces for them in her spare time, and kept track of time. David would sit by the laser cutter most of the time, not interfering with the girls’ designs, and acting mostly as a facilitator and consultant. His help was instrumental in moving many groups forward. When the students had a very difficult technical challenge to solve, David had the ability to envision how the entire system should work and give life-saving suggestions. Most students did not have the ability to look at their work as a system, but on interactions between one or two parts at most. David would guide them throughout the process, not taking over or undermining their ideas, but co-designing. The work dynamics that Heather and David put in place was different from a traditional classroom, of course, but it was also a departure from many technology-based after school programs where there is no space for a person with Heather’s profile.

In a robotics workshop, each group has its own equipment and work autonomously. In a digital fabrication environment, however, the work is centralized in just one or two machines. The question, then, is deciding on the side of efficiency (one specialist operating the machine for everyone), or equity (everyone operating the machine). In Heather and David’s model, the workflow was faster, but there was doubt if the girls were actually learning while watching David work through problems, or if they were simply relieved to have something done for them, and if they could come up with elegant solutions without him.

This assembly-line division of labor made it possible for students to get their parts cut in 50-minute periods. However, there were unintended consequences to this scheme. Some students may have prematurely aborted design elements that they deemed too difficult to do on their own, given the time constraint. In addition, the amount of experience Heather’s students had with fabrication varied from

group to group. It seemed like there was a place for every student on the spectrum to fit in. Some groups required more technical (and mathematical) help than others, but the students all seemed to be in charge of the creative part of their designs. However, it was unclear whether David was being helpful by doing some of the more complex calculations for the students or simply passing the information along to the students. At this point the aim was efficiency; and it could have undermined students' willingness to persist through difficult problems.

Heather also made changes to her own activity design. Instead of a completely open-ended project, she introduced some structure: the wooden base of the historical monuments would be standardized (a 15x15 square grid with a 3/16":1 ft scale, see Figure 3, left).

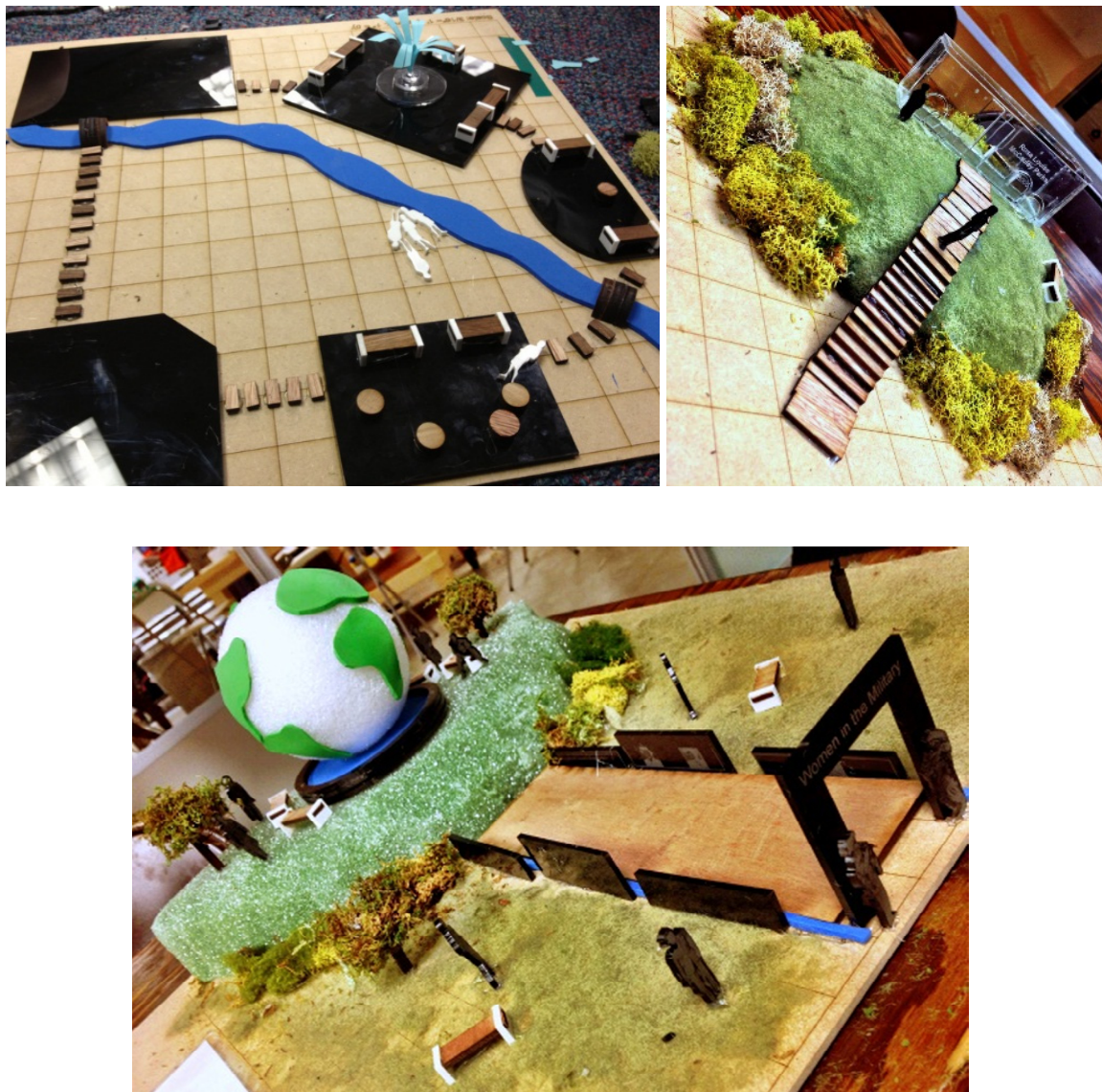


Figure 3. One in-progress project with the grid clearly visible (left), and some of the projects done by students (right, bottom)

Heather's activity design, which was intended to give students a safe starting point for their projects, had an unexpected consequence as well. The activity, which was originally a history project, suddenly became a sophisticated mathematics project. When Heather standardized the base and assigned strict dimensions to it, she foregrounded one aspect of the activity that would have been overlooked by many students: measurement. All of a sudden, the objects had to fit the base and their relative sizes had to be exact. Students did not want to have a park bench be the same size as a person, and they knew they could not tinker with the dimensions of objects after the fact. In the post-interviews, students were very surprised with how much math they had to learn and use to accomplish the history project.

The History Monuments project unwittingly illustrated some additional principles of digital fabrication in schools. First, digital fabrication introduces a new type of 'workflow.' Differently from a science lab or a robotics workshop, in which each group works autonomously with one kit, in a FabLab there is just one laser cutter. This generates pressure for productivity and division of labor that could be either productive or disempowering. In Heather's case, the scheme was mostly productive in which it enabled students to focus on the creative part of the project, not having to deal with the specifics of the software and the laser cutter. In fact, the division of labor was also a crucial enabler for the project to happen within the four 50-minute time slots that she had. However, we also observed that this scheme could easily turn into a disempowering arrangement when students realize that they are too dependent on the facilitators and cannot create the more complex designs by themselves—all the hard work is done by eager facilitators racing against the school bell.

Second, the environment was conducive to unlikely interdisciplinary projects: The making of a physical project will always entail some engineering work. Despite the fact that students were working on a history-themed project, they ended up having to explore multiple topics in mathematics such as measurement, scale, and proportion, both in two and three dimensions. In the same way that the rollercoaster students encountered physics in authentic ways, the 'Monuments' students were seeing mathematics everywhere in their projects.

4.4. The Robotic Flute Player, or the Demise of Constant Airflow

Max, a high school student in Moscow, was not an engineering type. He was passionate about music—Bach in particular. In one of our first meetings, he told the facilitators his childhood dream was to build a robot that could play Bach—thus his interest in digital fabrication, although he had no idea where to start. After a week, he had learned how to laser cut, program, control motors and sensors, and had an incredible prototype of the flute. It was not yet good enough for him. The workshop was over, but now finishing the flute was his personal project, so he kept coming to the lab for two months, several times a week. In the end, he built a flute with 12 servomotors (Figure 4), a highly complex control mechanism, and was able to play some simple Bach melodies by programming the microcontroller board. He took this project to the National Science Exhibition, a very competitive event in Russia with hundreds of students from all over the country, and won 3rd place. It seems like a success, but the competition was not the most important part of the story.

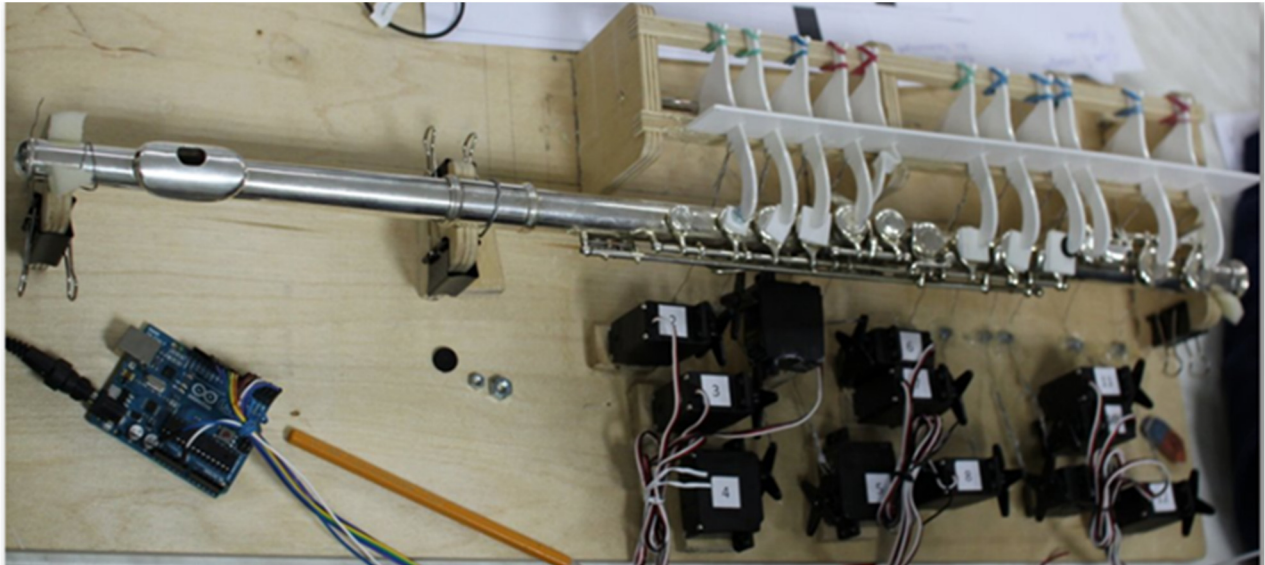


Figure 4. The robotic flute.

Apart from controlling the robotic “fingers,” Max also wanted a machine to blow air into the flute. For several weeks, he tried many solutions—foleys, pumps, vacuum cleaners, and even complex piping systems. After countless experiments and redesigns, he finally found a way to blow a consistent amount of air at just the right angle to produce sound. He decided to use an inverted vacuum cleaner with a series of polymer-cast pipes which he made himself. Max turned the system on, started the servo motor system, and waited for the contraption to play Bach—when something remarkable happened. Even though the system was working as planned, it did not sound like a Bach piece. Something was off: the movements were correct, the air was flowing steadily, but it was not what he expected. After much reflection with the facilitators, Max finally understood the problem. No human flute player would have a steady flow of air – regulating the airflow is exactly the craft of musicians, who interpret the melody in their own way, emphasizing and highlighting different parts. Bach pieces sound weird when played by a robot because there is no interpretation, just an automatic execution with constant airflow.

Max was disappointed but also extremely happy, too – by building a robotic flute, he had learned a lot about engineering, but the main lesson was about music interpretation, and the true craft of a musician. His episode illustrates, again, the integrated nature of projects in the lab, where there is no real boundary between disciplines. But even more importantly, it shows a crucial component of the lab’s success: attracting students who would not traditionally see themselves as engineers or scientists. Since the lab was architected (and advertised) as a place for invention—and not for “building robots” or making lights blink—even students like Max felt compelled to try something. His contribution, as a musician/engineer, made the environment more diverse and intellectually rich, attracted even more students, and infused unexpected ideas into other students’ work.

5. Digital Fabrication and ‘Making:’ the Ultimate Construction Kit

In this chapter, I first told the story of the rise and fall then rise again of the making and building in education, discussed the theoretical underpinnings of project-based, student-centered learning, and presented the work of John Dewey, Seymour Papert, and Paulo Freire. I discussed how digital fabrication brings unique tools to progressive educators, and presented four prototypical episodes that exemplify the advantages and perils of FabLabs in schools. These examples highlight five important design principles:

- (a) **The “Keychain Syndrome:”** since digital fabrication machines might generate aesthetically-pleasing products with little effort, educators should shy away from quick demonstration projects and push students towards more complex endeavors;
- (b) **The power of despair and visceral involvement:** FabLabs provide an environment for unprecedented visceral design experiences, multiple cycles of design, and new levels for both frustration and excitement, which students normally do not experience in their normal school experience;
- (c) **Powerful interdisciplinary projects:** the artificial boundaries between disciplines are completely reconfigured in the lab. History and mathematics become closely related, and so do music and robotics, and this richness results in a more diverse and accepting intellectual environment;
- (d) **Contextualized learning in STEM:** students have the opportunity to come across several concepts in engineering and science in a highly meaningful, engaging, and contextualized fashion. Abstract ideas such as friction and momentum become meaningful and concrete when they are needed to accomplish a task within a project; math becomes a necessity in a history project.
- (e) **Intellectualization and re-evaluation of familiar practices, rather than the replacement of existing ones (Blikstein, 2008):** Students bring their own familiar practices to the lab (craft, construction, carpentry), and those practices get augmented using socially-valued tools such as computational and mathematics. The malleability of the equipment and the pedagogical space in the lab makes the augmentation and embracement of such practices feasible, generating an environment that values multiple ways of working.

Despite the potential of digital fabrication labs and ‘making’ in education, educators and scholars must remember that, as Seymour Papert would say, the real power of any technology is not in the technique itself or in the allure it generates, but in the new ways of personal expression it enables, the new forms of human interaction it facilitates, and the powerful ideas it makes accessible to children.

6. Acknowledgements

Special thanks to all the students and their incredible work. This was a truly collaborative work of many people: the Stanford team, Marcelo Worsley, Shima Salehi, Engin Bumbacher, Claire Rosenbaum, Kathryn Papadopoulos; the Castilleja School team, Angi Chau, Diego Fonstad, and Heather Pang; the MPEI 1502 school team (Moscow), Irina Krasnova, Anton Vasiliev, and Nadezhda Alekseeva; the East Palo Alto Academy High School team, Derek Ang, Guy Mathews; the Darunsikkhalai School for Innovative Learning team (Bangkok), Nalin Tutiyaengprasert, Arnan Sipitakiat, and all the students and their incredible work. This work was funded by the NSF CAREER award #1055130, Schlumberger Excellence in Educational Development Foundation, Euan Baird, the Levin Fund, the Lemann Foundation, and the Suksapattana Foundation.

7. References

- Abrahamson, D., Blikstein, P., & Wilensky, U. (2007). *Classroom model, model classroom: computer-supported methodology for investigating collaborative-learning pedagogy*. Paper presented at the Proceedings of the 8th International Conference on Computer Supported Collaborative Learning, NJ: Rutgers University.
- Astrachan, O., Hambruch, S., Peckham, J., & Settle, A. (2009). *The present and future of computational thinking*. Paper presented at the Proceedings of the 40th ACM technical symposium on Computer science education, Chattanooga, TN, USA.
- Atkin, J. (1990). Teach science for science's sake: For Global Competitiveness, try technology. *Education Week*, 10, 32.
- Berland, M. (2008). *VBOT: Motivating Computational and Complex Systems Fluencies with Constructionist Virtual/Physical Robotics*. PhD., Northwestern University, Evanston.
- Berland, M., & Wilensky, U. (2006). *Constructionist collaborative engineering: Results from an implementation of PVBOT*. Paper presented at the Annual meeting of the American Educational Research Association, San Francisco, CA.
- Blikstein, P. (2008). Travels in Troy with Freire: Technology as an Agent for Emancipation. In P. Noguera & C. A. Torres (Eds.), *Social Justice Education for Teachers: Paulo Freire and the possible dream* (pp. 205-244). Rotterdam, Netherlands: Sense.
- Blikstein, P. (2010). *Connecting the science classroom and tangible interfaces: the bifocal modeling framework*. Paper presented at the Proceedings of the 9th International Conference of the Learning Sciences - Volume 2, Chicago, Illinois.
- Blikstein, P., Fuhrmann, T., Greene, D., & Salehi, S. (2012). *Bifocal modeling: mixing real and virtual labs for advanced science learning*. Paper presented at the Proceedings of the 11th International Conference on Interaction Design and Children, Bremen, Germany.
- Buechley, L. (2006). *A Construction Kit for Electronic Textiles*. Paper presented at the IEEE International Symposium on Wearable Computers (ISWC), Montreux, Switzerland.

- Buechley, L., & Eisenberg, M. (2008). The LilyPad Arduino: toward wearable engineering for everyone. *IEEE Pervasive Computing*, 7(2), 12-15.
- Buechley, L., Eisenberg, M., Catchen, J., & Crockett, A. (2008). *The LilyPad Arduino: using computational textiles to investigate engagement, aesthetics, and diversity in computer science education*.
- Cavallo, D. (2000). Emergent Design and learning environments: Building on indigenous knowledge. *IBM System Journal*, 39(3&4), 768-781.
- Cooper, S., Dann, W., & Pausch, R. (2000). *Alice: a 3-D tool for introductory programming concepts*. Paper presented at the Journal of Computing Sciences in Colleges.
- Dewey, J. (1902). *The Child and Curriculum*. Chicago, IL: University of Chicago Press.
- diSessa, A. A. (2000). *Changing minds: computers, learning, and literacy*. Cambridge, MA: MIT Press.
- Dym, C. L. (1999). Learning Engineering: Design, Languages, and Experiences. *Journal of Engineering Education*, 145-148.
- Edelson, D. (2000). My World GIS. Evanston, IL: PASCO Scientific.
- Feisel, L. D., & Rosa, A. J. (2005). The Role of the Laboratory in Undergraduate Engineering Education. *Journal of Engineering Education*, 94(1), 121-130.
- Freire, P. (1974). *Pedagogy of the oppressed*. New York,: Seabury Press.
- Freudenthal, H. (1973). *Mathematics as an educational task*. Dordrecht,: Reidel.
- Fröbel, F., & Hailmann, W. N. (1901). *The education of man*. New York: D. Appleton.
- Gershenfeld, N. (2007). *Fab: the coming revolution on your desktop--from personal computers to personal fabrication*: Basic Books (AZ).
- Grinter, L. E. (1955). Report on Evaluation of Engineering Education. Washington, DC: ASEE.
- Illich, I. (1970). *Deschooling society*. New York: Harper & Row.
- Kafai, Y. (1995). *Minds in Play. Computer Game Design as a Context for Children's Learning*. Norwood: Lawrence Erlbaum Associates
- Levy, F., & Murnane, R. J. (2004). *The new division of labor: How computers are creating the next job market*: Princeton University Press.
- Martin, F. (1994). *Circuits to Control: Learning Engineering by Designing LEGO Robots*. MIT, Cambridge, MA.
- Martin, F., & Resnick, M. (1993). Lego/Logo and electronic bricks: Creating a scienceland for children. In D. L. Ferguson (Ed.), *Advanced educational technologies for mathematics and science*. Berlin, Heidelberg: Springer-Verlag.
- Mikhak, B., Lyon, C., Gorton, T., Gershenfeld, N., McEnnis, C., & Taylor, J. (2002). Fab Lab: An Alternative Model of ICT for Development. "development by design"(dyd02). *Bangalore: ThinkCycle*.
- Millner, A., & Resnick, M. (2005). *Tools for Creating Custom Physical Computer Interfaces*. Paper presented at the 4th International Conference for Interaction Desing for Children, Boulder, CO.
- Montessori, M. (1964). *The advanced Montessori method*. Cambridge, Mass.,: R. Bentley.
- Montessori, M. (1965). *Spontaneous activity in education*. New York,: Schocken Books.
- National Research Council. (1999). *Being Fluent with Information Technology*: The National Academies

- Press.
- National Research Council. (2002). *Technically Speaking: Why All Americans Need to Know More About Technology*: The National Academies Press.
- Papert, S. (1980). *Mindstorms : children, computers, and powerful ideas*. New York: Basic Books.
- Papert, S. (1987). Computer Criticism vs. Technocentric Thinking. *Educational Researcher*, 16(1).
- Papert, S. (1991). Situating Constructionism. In S. Papert & I. Harel (Eds.), *Constructionism*. Cambridge, MA: MIT Press.
- Perner-Wilson, H., Buechley, L., & Satomi, M. (2011). *Handcrafting textile interfaces from a kit-of-no-parts*. Paper presented at the Proceedings of the fifth international conference on Tangible, embedded, and embodied interaction.
- Raffle, H. S., Parkes, A. J., & Ishii, H. (2004). *Topobo: a constructive assembly system with kinetic memory*. Paper presented at the Proceedings of the SIGCHI conference on Human factors in computing systems.
- Resnick, M., Berg, R., & Eisenberg, M. (2000). Beyond black boxes: Bringing transparency and aesthetics back to scientific investigation. *Journal of the Learning Sciences*, 9(1), 7-30.
- Resnick, M., Maloney, J., Monroy-Hernández, A., Rusk, N., Eastmond, E., Brennan, K., . . . Silverman, B. (2009). Scratch: programming for all. *Communications of the ACM*, 52(11), 60-67.
- Rousseau, J.-J. (1961). *Emile*. New York: Dutton.
- Schweikardt, E., & Gross, M. D. (2006). *roBlocks: a robotic construction kit for mathematics and science education*. Paper presented at the Proceedings of the 8th international conference on Multimodal interfaces, Banff, Alberta, Canada.
- Sheppard, S., & Jenison, R. (1997). Examples of Freshman Design Education. *International Journal of Engineering Education*, 13(4), 248-261.
- Sipitakiat, A. (2000). *Digital Technology for Conviviality: making the most of learners' energy and imagination*. MSc. thesis, Massachusetts Institute of Technology, Cambridge.
- Sipitakiat, A., Blikstein, P., & Cavallo, D. P. (2002). *The GoGo Board: Moving towards highly available computational tools in learning environments*. Paper presented at the Interactive Computer Aided Learning International Workshop, Villach, Austria.
- Sipitakiat, A., Blikstein, P., & Cavallo, D. P. (2004). *GoGo Board: Augmenting Programmable Bricks for Economically Challenged Audiences*. Paper presented at the International Conference of the Learning Sciences, Los Angeles, USA.
- Swetz, F., & Smith, D. (1987). *Capitalism and arithmetic: The new math of the 15th century*: Open Court.
- Sylvan, E. (2005). *Integrating Aesthetic, Engineering, and Scientific Understanding in a Hands-on Design Activity*. Paper presented at the Interaction Design for Children, Boulder, CO.
- Tryggvason, G., & Apelian, D. (2006). Re-engineering engineering education for the challenges of the 21 st century. *JOM*, 58(10), 14-17.
- von Glasersfeld, E. (1984). An Introduction to Radical Constructivism. In P. Watzlawick (Ed.), *The Invented Reality*. New York: Norton.
- Wilensky, U. (1999). NetLogo. Evanston, IL: Center for Connected Learning and Computer-Based Modeling. <http://ccl.northwestern.edu/netlogo>.

- Wilensky, U., & Papert, S. (2010). *Restructurations: Reformulating knowledge disciplines through new representational forms*. Paper presented at the Constructionism 2010, Paris, France.
- Wilensky, U., & Stroup, W. (1999). *Learning Through Participatory Simulations: Network-Based Design for Systems Learning in Classrooms*. Paper presented at the Computer Supported Collaborative Learning Conference, Stanford University, California.
- Yasar, O., & Landau, R. H. (2003). Elements of computational science and engineering education. *SIAM review*, 787-805.

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Business and Social Sciences

LINC 84B 3-D DESIGN & FABRICATION

[Edit Course Outline](#)

LINC 84B

3-D DESIGN & FABRICATION

Summer 2018

2 hours lecture.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours: 0

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 35 **Load Factor:** .044 **FOAP Code:** 114000151011086000

Cross Listed as:

Related ID:

LINC 84A

Instruction Office Information -

FSA Code:

Distance Learning: yes

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Need/Justification -

This course provides specialized training for strategic partners in college vocational programs, high schools, economic development initiatives, ROP, and capacity development projects for stakeholders in grades K-12. The primary target audience includes educators and students from school districts within the FHDA district service area: Mountain View-Whisman, Palo Alto Unified, Sunnyvale Elementary, Mountain View-Los Altos Union HSD, Los Altos Elementary, Fremont Union HSD, and Cupertino Union. The secondary target audience includes schools and residents throughout San Mateo, Santa Clara, Santa Cruz, and Alameda counties.

1. Description -

Intended for educators and others, this course will provide the fundamentals of 3-D design and fabrication concepts. The use of basic design software and online libraries will be used to assist in developing and designing 3-D projects for learning projects by students in grades K-12, business, industry, and/or governmental. An emphasis will be placed on design concepts to meet a specific educational/instructional/project need.

Prerequisite: None

Co-requisite: None

Advisory: Experience with internet software tools, browsers, hyperlinks, online media resources, and basic skills using a computer.

2. Course Objectives -

The student will be able to:

- A. Identify different types of 3-D fabrication techniques
- B. Access, download and modify 3-D printing files from online collections
- C. Evaluate the best media for the 3-D print job based upon the use requirements
- D. Establishing design criteria and scale to maintain interoperability for multiple part projects
- E. Develop and submit a finished 3-D fabricated item

3. Special Facilities and/or Equipment -

- A. When offered on/off campus: Lecture room equipped with LCD projector, whiteboard, and a demonstration computer connected online. Computer laboratories equipped with online PCs and/or Macintosh computers, network server access, and 3-D printer(s).
- B. When taught via the internet: Students must have current email accounts and/or ongoing access to computers with email software, web browsing capability, and access to the World Wide Web.

4. Course Content (Body of knowledge) -

- A. 3-D Fabrication Techniques
 1. 3-D Printing--Filament Based (PLA/ABS)
 2. 3-D Printing--Resin Based
 3. 3-D Printing--CNC
 4. Laser Cutting
- B. Online 3-D Printing Collections
 1. Thingiverse
 2. Tinkercad
 3. Inventables
- C. Types of Media Used in 3-D Fabrication
 1. Filament (PLA/ABS)
 2. Resin
 3. Wood
 4. Plastic Sheeting
- D. Design Criteria
 1. Material
 2. Size
 3. Strength
 4. Weight
 5. Accuracy
- E. Finishing and Assembly
 1. Techniques to Remove Excess Material
 2. Dry Fitting Multiple Piece Projects to Ensure Proper Fit

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by:

- A. Developing a project utilizing 3-D design and fabrication technologies for the participant's specific purposes, whether educational, business-related or personal.
- B. Presentation of their web-based design and 3-D printed/fabricated project to peers.
- C. Making constructive contributions to class discussions.

7. Representative Text(s) -

Instructor-assigned notes and materials.

Example textbook:

Horvath, Joan. Mastering 3-D Printing. Apress Media, 2014. Print.

Additional information, notes, handouts, syllabus, assignments, tests, and other relevant course material will be delivered by email and on the World Wide Web, and discussion may be handled with internet communication tools.

8. Disciplines -

Instructional Design/Technology

9. Method of Instruction -

During periods of instruction the student will be:

- A. Listening actively to lecture presentations delivered in student-centered learning style by taking notes, following demonstrations, or completing an activity
- B. Participating in facilitated discussions of live presentations, readings or video presentations
- C. Presenting in small group and whole class situations

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Each week requires the student to read and analyze selected websites or student projects related to that week's topic.
- B. Each week's topic requires a written response to a prompt that is turned in to the instructor for review. Each prompt is designed to be a draft of a section of the student's completed project. Instructor feedback should be reflected in the final product.
- C. Each week's topic requires the student to participate in a weekly discussion prompt based on that week's readings and assignment. Students are to respond to other students' responses offering support, suggestions, alternative ideas, and resources.

FOOTHILL COLLEGE
College Curriculum Committee
Exception Process for Starting Courses Prior to Catalog Publication

Background

To help student educational planning, Foothill College's normal practice has been to not offer a course prior to publication in the college catalog. However, there are cases in which it would be beneficial to students to run a course prior to publication; for example, the availability of noncredit courses to support student success, prerequisite changes based on C-ID, changes in workforce needs, permanently Stand Alone CTE courses, programmatic accreditation changes, etc. In order to provide flexibility to best serve students, this process allows for an exception to the current practice.

Note our current practice that **new programs** approved by the CCCCCO become active immediately, as long as the program courses have previously been published in the catalog.

Process

The following process should be followed to request an exception:

- A. Course outline of record (COR) must be created/updated in C3MS, approved by the division, and moved to Review1 status in C3MS.
 - a. Information on COR must be complete and accurate.
 - b. Course SLOs must be entered in TracDat.
 - c. Any necessary supplemental forms must be approved by the division and forwarded to the Office of Instruction. Forms may include: Content Review for Requisites, Cross-Listed Course Approval Request, Distance Learning Application, Foothill GE Application, Stand Alone Approval Request.
- B. The Division Curriculum Reps would email the request to the Office of Instruction.
- C. Request must include the course number(s) as well as the specific reason for the request. If applicable, documentation from the outside entity regarding the change must be attached to the request.
- D. The Office of Instruction reviews the request, which includes determining a timeline for activation.
- E. If approved, the request is reported to CCC.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 50A

Course Title: Current Topics in Veterinary Technology I

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

This course is the first in a series of three courses that orient the advanced veterinary assisting apprentice to the workplace. Different aspects of the veterinary health care team will be discussed, as well as the various roles available in the organization. Different departments will present their interests, core values, and structure for integrating veterinary assistants into the team. Students will develop an appreciation of the broad scope of careers within the field. An acculturation process of the student to the facility begins in this course.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow “much faster than average for all occupations.” (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 50A CURRENT TOPICS IN VETERINARY TECHNOLOGY I [Edit Course Outline](#)

APAV 50A

CURRENT TOPICS IN VETERINARY TECHNOLOGY I

Spring 2018

1 hour lecture.

1 Unit

Total Contact Hours: 12

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 36

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 1

Lab Hours:

Weekly Out of Class Hours: 2

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 11-21-17

Division Dean Information -

Seat Count: 50

Load Factor:

FOAP Code:

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is the first in a series of three courses that orient the advanced veterinary assisting apprentice to the culture of the workplace. The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. The veterinary assisting apprentice, upon completion of the program, may choose to follow a career path to veterinary technology and licensure as a Registered Veterinary Technician.

1. Description -

This course is the first in a series of three courses that orient the advanced veterinary assisting apprentice to the workplace. Different aspects of the veterinary health care team will be discussed, as well as the various roles available in the organization. Different departments will present their interests, core values, and structure for integrating veterinary assistants into the team. Students will develop an appreciation of the broad scope of careers within the field. An acculturation process of the student to the facility begins in this course.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Investigate a variety of pertinent topics that directly relate to successful socialization to the workplace.
- B. Explain the role of each member of the veterinary health care team.
- C. Evaluate how the information presented may help them broaden their scope of practice as a veterinary nurse.
- D. Describe the role of humane education in promoting animal welfare.
- E. Predict how the philosophy of volunteering can be used to create and support effective volunteer services in a large humane organization.
- F. Examine how dogs and cats learn and apply learning theory to behavior and training.
- G. Describe the rationale for and effectiveness of animal assisted therapy.
- H. Explain the role of veterinary professionals in community outreach for targeted populations and homeless animals.

3. Special Facilities and/or Equipment -

Classroom equipped with multimedia presentation and projection capabilities. Computers with Internet access.

4. Course Content (Body of knowledge) -

- A. Various departments present their role within the workplace
 1. Department presentations
 2. Volunteer Services
- B. Veterinary health care team
 1. Receptionist
 2. Animal care attendant
 3. Veterinary assistants, levels
 4. Veterinary technicians (RVT)
 5. Veterinarian (DVM, VMD)
- C. Practice of veterinary nursing
 1. Self care for the veterinary nurse
- D. The role of humane education in promoting animal welfare
 1. Humane education
 2. Animal welfare
 3. Advocacy
 4. Adoptions philosophy
- E. Volunteer services
 1. Philosophy of volunteering
 2. Working with volunteers
- F. Learning theory
 1. Behavior and training
 2. Different approaches to behavior and training
 3. Training demo: enrichment and/or body language
- G. Animal assisted therapy
 1. Definitions and examples
 2. History of animal assisted therapy – supporting research

3. Current programs in animal assisted therapy
- H. Community outreach
 1. Role of neutering in managing overpopulation of dogs and cats
 2. Vaccine clinics
 3. Feral Cat Program
 4. Other opportunities

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

Evaluation methods may include but are not limited to:

- A. Reflection essays
- B. Participation in planned activities
- C. Writing a journal
- D. Group discussions
- E. Surveys or tests

7. Representative Text(s) -

No required textbook. Instructor and presenter materials.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction the student will be:

- A. Participating in interactive lectures and presentations
- B. Attending small group discussions and activities
- C. Performing hands-on experiences as appropriate for individual topics

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Handout material and online resources will be provided by the instructor and/or guest presenters, as needed
- B. Reflection papers
- C. Written assignments

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 50B

Course Title: Current Topics in Veterinary Technology II

Credit Status:

Credit course
 Noncredit course

Catalog Description:

Provides enrichment of the core curriculum to the veterinary assisting apprentice student. Presenters will include veterinarians, veterinary technicians, and animal care and management professionals involved in behavior and training of dogs and cats. Course will focus on learning theory, animal welfare, making the veterinary hospital experience less stressful and more pleasurable, decrease learned procedure aversion and fear of veterinary offices, and decrease of injuries to professionals.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 50B CURRENT TOPICS IN VETERINARY TECHNOLOGY II

[Edit Course Outline](#)

APAV 50B

CURRENT TOPICS IN VETERINARY TECHNOLOGY II

Summer 2018

1 hour lecture.

1 Unit

Total Contact Hours: 12

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 36

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 1

Lab Hours:

Weekly Out of Class Hours: 2

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 **Load Factor:** 0.022 **FOAP Code:** 11500014222710210

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

One of the three reasons animals enter shelters is due to behavior problems. By focusing on proper behavior practices in dogs and cats, the student will demonstrate successful animal handling resulting in a better response to care; this in turn supports human-animal bond. The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. The veterinary assisting apprentice, upon completion of the program, may choose to follow a career path to veterinary technology and licensure as a Registered Veterinary Technician.

1. Description -

Provides enrichment of the core curriculum to the veterinary assisting apprentice student. Presenters will include veterinarians, veterinary technicians, and animal care and management professionals involved in behavior and training of dogs and cats. Course will focus on learning theory, animal welfare, making the veterinary hospital experience less stressful and more pleasurable, decrease learned procedure aversion and fear of veterinary offices, and decrease of injuries to professionals.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Recognize body language in dogs and cats
- B. Describe the role of environment in creating fear, anxiety and stress in patients and clients
- C. Describe learning theory in dogs and cats
- D. Recognize aggressive behavior and describe how to de-escalate that behavior in dogs and cats
- E. Demonstrate competence in talking about dog and cat learning and behavior with clients
- F. Describe desensitization and counterconditioning as techniques to help manage problems in pets

3. Special Facilities and/or Equipment -

Classroom equipped with multimedia presentation and projection capabilities. Computers with Internet access.

4. Course Content (Body of knowledge) -

- A. Body language
 1. Canine development and communication
 2. Canine body language
 3. Preventing problems
 4. Feline development and communication
 5. Feline body language
 6. Preventing problems
- B. The veterinary and shelter environment
 1. Feline and canine sensory perception
 2. Stress in pets
 3. Veterinary nurse's role in environmental control
 4. Talking to clients
- C. Learning theory in dogs and in cats
 1. Associative learning
 2. Application of learning theory
 3. Reinforcement
 4. Punishment
 5. Habituation
- D. Aggressive behavior in dogs and cats
 1. Body language of aggression
 2. Contributing factors
 3. Role of fear
 4. De-escalation techniques in dogs
 5. De-escalation techniques in cats
- E. Client education in dog and cat behavior
 1. Pet socialization
 2. Positive training techniques
 - a. Lure, reward
 3. Taking a behavior history

4. Role of the technician
- F. Desensitization and counter-conditioning
 1. Indications
 2. Terminology
 3. Case examples

5. **Repeatability** - Moved to header area.

6. Methods of Evaluation -

Various methods of evaluation may be used:

- A. Reflection papers for each topic presented
- B. Active participation in planned activities
- C. Team or individual projects
- D. Tests or other assessments

7. Representative Text(s) -

Canine and Feline Behavior for Veterinary Technicians and Nurses, edited by Shaw and Martin. Wiley, 2015.
Yin. Low Stress Handling, Restraint and Behavior Modification of Dogs and Cats, 1st ed. Cattledog Publishing, 2009.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction, the student will be in:

- A. Interactive lecture/presentations
- B. Small group discussions and activities
- C. Hands-on experiences as appropriate for individual topics
- D. Video presentations

10. Lab Content -

Not applicable.

11. **Honors Description** - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Assignments may include but are not limited to:

- A. Writing assignments:
 1. Reflection essays
 2. Surveys
 3. Journal
- B. Reading assignments:
 1. Textbook: 15-30 pages per week
 2. Handout and online resources provided by instructor or guest lecturer

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 50C

Course Title: Current Topics in Veterinary Technology III

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Provides enrichment of the core curriculum to the advanced veterinary assisting apprentice. Presenters will include veterinarians, veterinary technicians, business professionals, and educators. Lectures, lecture-demonstrations, multimedia presentations, live demonstrations, or hands-on workshops presented by the instructor or professionals in veterinary medicine. Content consists of relevant topics related to the workplace and concurrent coursework in the program curriculum, with an emphasis on clinical pharmacology and client education topics.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 50C CURRENT TOPICS IN VETERINARY TECHNOLOGY III

[Edit Course Outline](#)

APAV 50C

CURRENT TOPICS IN VETERINARY TECHNOLOGY III

Summer 2018

1 hour lecture.

1 Unit

Total Contact Hours: 12

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 36

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 1

Lab Hours:

Weekly Out of Class Hours: 2

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.022 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. The veterinary assisting apprentice, upon completion of the program, may choose to follow a career path to veterinary technology and licensure as a Registered Veterinary Technician.

1. Description -

Provides enrichment of the core curriculum to the advanced veterinary assisting apprentice. Presenters will include veterinarians, veterinary technicians, business professionals, and educators. Lectures, lecture-demonstrations, multimedia presentations, live demonstrations, or hands-on workshops presented by the instructor or professionals in veterinary medicine. Content consists of relevant topics related to the workplace and concurrent coursework in the program curriculum, with an emphasis on clinical pharmacology and client education topics.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Collect information and experience a variety of pertinent topics not covered elsewhere in the Advanced Veterinary Assisting Apprenticeship that directly relate to the fundamentals in the program.
- B. Interpret presentations on various topics and write reflections based on application of topics to fundamentals from courses (continuing education model).
- C. Recognize, appraise, and evaluate the various career opportunities available to them in the veterinary field.
- D. Practice communication skills in talking with clients about their pets, during triage, intake, and release.
- E. Implement the "five rights" in interpreting, filling, and explaining prescriptions to clients.

3. Special Facilities and/or Equipment -

Classroom equipped with multimedia presentation and projection capabilities. Computers with Internet access.

4. Course Content (Body of knowledge) -

- A. Fundamentals of veterinary technology (topics relevant to some of the following)
 1. Anatomy and physiology
 2. Behavior
 3. Nursing techniques
 4. Diagnostic skills
 5. Pharmacology
 6. Interprofessional communication
- B. Continuing education in veterinary technology (topics relevant to some of the following)
 1. Medical nursing
 2. Surgical nursing
 3. Topics in infectious disease
 4. Shelter medicine
 5. Client communication and triage
- C. Various career opportunities in the veterinary field
 1. Veterinary technician specialties
 2. Management
- D. Client communication
 1. History
 2. Medical discharge
 3. Surgical discharge
- E. Pharmacology
 1. Five rights of pharmacology
 2. Interpreting drug labels
 3. Filling drug labels
 4. Client education and pet medications
 - a. Following directions
 - b. Side effects
 - c. Tips for success
 - d. Owner compliance

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

Methods may include but are not limited to:

- A. Two-page reflection paper for each topic presented
- B. Active participation in planned activities
- C. Group projects
- D. Tests

7. Representative Text(s) -

Bassert, Joanna M. Clinical Textbook For Veterinary Technicians. 9th ed. W. B. Saunders Co., 2017.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction the student will be in:

- A. Interactive lecture/presentations
- B. Small group discussions and activities
- C. Hands-on experiences as appropriate for individual topics

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading assignments may include:
 - 1. Weekly reading assignments from text
 - 2. Supplemental reading from web source relevant to content material
 - 3. Supplemental reading from handouts provided by speaker
- B. Writing assignments may include:
 - 1. Weekly reflection paper
 - 2. Analysis

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 51

Course Title: Introduction to Veterinary Technology

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Introduction to the profession of veterinary technology. Orientation to the program requirements and curriculum. Overview of program structure and student services. Review and practice of library skills. Prerequisite course for several courses in veterinary technology program. Survey of the role of the veterinary assistant and registered veterinary technician in the workplace. Survey of employment opportunities and areas of specialization. Ethics and professionalism pertaining to veterinary medicine. Laws and regulations governing veterinary technicians. Introduction to basic animal care skills and clinical procedures.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 51 INTRODUCTION TO VETERINARY TECHNOLOGY

[Edit Course Outline](#)

APAV 51

INTRODUCTION TO VETERINARY TECHNOLOGY

Spring 2018

24 total hours.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours:

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.044 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. Introduction to veterinary technology presents the various aspects of veterinary medicine and orients the student to the career.

1. Description -

Introduction to the profession of veterinary technology. Orientation to the program requirements and curriculum. Overview of program structure and student services. Review and practice of library skills. Survey of the role of the veterinary assistant and registered veterinary technician in the workplace. Survey of employment opportunities and areas of specialization. Ethics and professionalism pertaining to veterinary medicine. Laws and regulations governing veterinary technicians. Introduction to basic animal care skills and clinical procedures.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Explain the program structure and policy guidelines.
- B. Discuss the scope of veterinary medical practice.
- C. Define program accreditation, licensure and regulations.
- D. Describe the roles of the various members of the veterinary team.
- E. Describe the basic elements of patient care in a veterinary clinic.
- F. Explain the appropriate methods of restraint and handling of companion animals.
- G. Explain the basic concepts of preventive medicine for companion animals.
- H. Apply introductory concepts in medical terminology.
 - I. Read and evaluate examples of the professional periodical literature.
 - J. Discuss professional behavior and ethics as it relates to the role of the veterinary technician.
- K. List the basic principles of safety in the veterinary workplace.

3. Special Facilities and/or Equipment -

Housing and handling facilities for live animals. Classroom with projection, internet and audiovisual capabilities.

4. Course Content (Body of knowledge) -

- A. Orientation to the Foothill Veterinary Technology Program
 1. Prerequisites
 2. Application process
 3. Course requirements
 4. Expectations for student performance
 - a. Qualities of a good student
 - b. Effective study habits
- B. Overview of the scope of veterinary medical practice
 1. Types of practice and career ladder
 2. Variety of employment opportunities and fields of study
 3. Opportunities for professional development and career advancement
- C. Laws and regulations
 1. Veterinary Medical Board
 2. CA RVT Examining Committee
 3. The California Veterinary Practice Act and specific regulations governing veterinary technicians
 4. VTNE: veterinary technician national examination
 5. Program accreditation and essential skills
 - a. Responsibility of student
- D. The Veterinary Medical Team
 1. Role and responsibilities of the Veterinary Assistant
 2. Role and responsibilities of the Veterinary Technician
 3. Role and responsibilities of the Veterinarian
 4. Interrelationships and delegation of tasks
- E. The animal patient and client
 1. The responsibilities of the Veterinary Medical Team
 2. Needs and expectations of the client and the practice
 3. Clinical history taking

- a. Purpose and format
 - b. Medical record keeping
- 4. Physical examination
 - a. Basic technique
 - b. Medical record keeping
- F. Restraint and handling
 - 1. Dog
 - 2. Cat
- G. Preventive medicine
 - 1. Basic immunology and principles of immunization
 - a. Vaccination principles
 - b. Vaccination types and schedules
 - 2. Parasite control
 - 3. Regular examination
- H. Basic medical terminology
 - 1. Word roots
 - 2. Combining forms
 - 3. Terms of position and direction
- I. Orientation to the professional periodical literature
 - 1. Tour of library (when course is offered on campus)
 - 2. Use of reference materials and databases
 - 3. Introduction to computer search techniques
- J. Professional ethics
 - 1. Professional appearance
 - 2. Professional conduct
 - 3. Professional communication
 - 4. Professional ethics, laws and regulations
- K. Hospital safety
 - 1. OSHA
 - 2. Workplace hazards
 - 3. Hazardous chemicals
 - 4. Medical and animal related hazards

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

Evaluation methods may include but are not limited to:

- A. Field work assignment.
- B. Class participation; for example, group presentations.
- C. Written midterm and written final exam.
- D. Written periodical review assignment.
- E. Research paper or project.

7. Representative Text(s) -

Bassert, Joanna M. Clinical Textbook For Veterinary Technicians. 9th ed. W. B. Saunders Co., 2017.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

- A. Lecture presentations and classroom discussion
- B. Reflection activities
- C. Role playing
- D. Group presentations of major topic areas
- E. Review games

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Weekly reading assignments from text, class handouts, and outside sources of 30 to 60 pages per week.
- B. Written multiple choice, short answer and essay questions.
- C. One or both of the following assignments may be required: written periodical review paper, written research project.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 53A

Course Title: Medical Terminology

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Focus on basic word parts and rules of word construction to learn the language of medicine. Translation of common medical terms pertaining to the different body systems, with emphasis on those terms particular to veterinary medicine. Application of language to clinical situations.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE

_____ Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow “much faster than average for all occupations.” (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

_____ The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 53A MEDICAL TERMINOLOGY

[Edit Course Outline](#)

APAV 53A

MEDICAL TERMINOLOGY

Summer 2018

24 hours total.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours:

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.044 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

Introduction to veterinary technology presents the various aspects of veterinary medicine and orients the student to the career. Medical terminology is the language of medicine. The veterinary nurse must communicate with others on the veterinary team to provide excellent care to patients, perform research, and explain and discuss patient conditions.

1. Description -

Focus on basic word parts and rules of word construction to learn the language of medicine. Translation of common medical terms pertaining to the different body systems, with emphasis on those terms particular to veterinary medicine. Application of language to clinical situations.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: Not open to students with credit in V T 53A.

2. Course Objectives -

The student will be able to:

- A. Identify and recognize the types of word parts that make up a word term.
- B. Define commonly used prefixes, roots, combining forms, and suffixes.
- C. Recognize and apply proper medical terminology to clinical scenarios presented during class and on written quizzes.
- D. Interpret the meaning of unfamiliar medical terms.
- E. Utilize proper medical terminology in classroom discussions of selected areas of veterinary practice.
- F. Discuss the role of medical terminology in record keeping and in communication with other veterinary health professionals.

3. Special Facilities and/or Equipment -

Multimedia equipped classroom, internet access.

4. Course Content (Body of knowledge) -

- A. Word parts in terminology
 1. Word anatomy
 2. Prefixes
 3. Roots
 4. Combining vowels
 5. Combining forms
 6. Suffixes
- B. Common prefixes, roots, combining forms, and suffixes
 1. Positional terms
 2. Musculoskeletal system
 3. Comparative species' terms
 4. Gastrointestinal system
 5. Urinary system
 6. Cardiovascular system
 7. Respiratory system
 8. Integumentary system
 9. Endocrine system
 10. Reproductive system
 11. Nervous system
- C. Clinical application of terminology
 1. Hematologic system and immunology
 2. Physical examination terminology
 3. Application to various species and common conditions
- D. Interpret the meaning of unfamiliar medical terms
 1. Analysis of new words
- E. Application of terminology to various areas of veterinary practice
- F. Medical records and terminology
 1. Problem oriented veterinary medical record system
 2. Clinical applications

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency through some or all of the following:

- A. Weekly written quizzes
- B. Midterm and final
- C. Quizlets
- D. Definitions and decoding of words from peer reviewed journal articles

7. Representative Text(s) -

Romich, Janet A. An Illustrated Guide to Veterinary Medical Terminology. 4th ed. Delmar Cengage Learning, 2015.
Blood, Douglas C., Virginia P. Studdert, and Clive C. Gay. Comprehensive Veterinary Dictionary. 4th ed. Saunders Ltd., 2012.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

- A. Lecture presentation
- B. Discussion
- C. Review activities
- D. Case discussion

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Assignments may include some or all of the following:

- A. Reading assignments
 1. Weekly reading assignments from text and class handouts ranging from 30 to 60 pages per week.
 2. Online or other sources as required by instructor.
- B. Writing assignments
 1. Completion of textbook self-study workbook exercises

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 53B

Course Title: Medical Calculations

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Applied mathematics as a fundamental communication and technical skill. Review of calculations involving fractions, decimals, ratios and proportions, unit conversions, and algebraic equations. Clinical medical calculations utilized in preparation and administration of drugs, dosage determinations, intravenous fluid infusion, and prescription dispensing.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer

Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 53B MEDICAL CALCULATIONS

[Edit Course Outline](#)

APAV 53B

MEDICAL CALCULATIONS

Summer 2018

24 total hours.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours:

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.044 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Applied mathematics as a fundamental communication and technical skill. Review of calculations involving fractions, decimals, ratios and proportions, unit conversions, and algebraic equations. Clinical medical calculations utilized in preparation and administration of drugs, dosage determinations, intravenous fluid infusion, and prescription dispensing.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: MATH 230 or high school pre-algebra at a minimum to increase student success; this course is not open to students with credit in V T 53B.

2. Course Objectives -

The student will be able to:

- A. Perform calculations involving ratios, proportions, and ratio fractions.
- B. Perform conversions between decimals, fractions, ratios, and percentages.
- C. Perform conversions between metric and household systems of measure.
- D. Interpret oral and parenteral medication labels involving capsule and tablet strength dosages, oral solution concentrations, international units, milliequivalents, and weight-to-volume percentage concentrations.
- E. Perform calculations relating percentage, ratio strength, and concentrations of solutions.
- F. Perform calculations of dosages of drugs, and dispensing of drug quantities from dosage calculations.
- G. Record drug administration information in medical records, such as patient records, controlled substances logs, anesthesia logs, and prescription labels.
- H. Perform calculations involving intravenous preparations, including consideration of isotonicity, milliequivalents, percentage solutions, flow (drip) rates, and constant infusions.

3. Special Facilities and/or Equipment -

Classroom with computer, internet, and visualizer. Software for auto-tutorial and interactive exercises in medical calculations. Various example drug products and dosage forms for demonstration. Fluid infusion equipment for demonstration purposes.

4. Course Content (Body of knowledge) -

- A. Review of basic mathematics
 1. Mathematics of decimals and fractions
 2. Solving simple algebraic equations
 3. Ratios and proportions
- B. Mathematic conversions
 1. Decimals
 2. Fractions
 3. Ratios
 4. Percentages
- C. Systems of drug measure and unit conversions
 1. Metric international system
 2. Household system
 3. Apothecary system no longer used, but may mention
- D. Interpreting drug labels
 1. Reading oral and parenteral medication labels
 - a. Strength dosage
 - b. Solution concentration
 2. Hypodermic syringe measurement
 3. Reconstitution of powdered drugs
- E. Calculating solution dosages
 1. Ratio and proportion method
 2. Formula method
 3. Insulin and heparin dosing
 4. Solutions and dilutions
- F. Following medication administration orders (drug dispensing)

1. Calculating drug dosages
2. Dispensing drugs based on interpretation and calculation of orders
- G. Documentation
 1. Patient records
 2. Inventory
 3. Logs
 - a. Anesthesia
 - b. Controlled substance
 4. Prescription labels
- H. Intravenous fluid therapy and critical care calculations
 1. Intravenous fluid therapy principles and equipment
 - a. Tonicity
 2. Intravenous flow rate calculations
 3. Calculating constant rate infusions and infusion times

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by:

- A. Written examinations
- B. Completion of self-study exercises
- C. Midterm and final examinations

7. Representative Text(s) -

Williams, Lindsey. Clinical Mathematics for Veterinary Technicians. San Bernardino, CA: 2017. ISBN 978-15454-10462.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction, the student will be in:

- A. Lecture
- B. Discussion
- C. Cooperative learning exercises
- D. Demonstration

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading assignments
 1. Weekly reading assignments from text and class handouts ranging from 30 to 60 pages per week
- B. Writing assignments
 1. Textbook and instructor created exercises for medical math calculations
 2. Written short answer questions

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 54A

Course Title: Comparative Veterinary Anatomy & Physiology For The Veterinary Technician

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

The first of two courses in comparative veterinary anatomy and physiology for veterinary technicians. Clinically relevant veterinary anatomy and physiology. Discussion of the similarities and differences among the major domestic species. The first course introduces basics of chemistry to help the student interpret the physical and chemical basis of life. Systems included in the first course are: integumentary, muscles, skeletal, and cardiovascular. Emphasis is placed on the normal structure and function of the major organ systems as the foundation for understanding normal physiology and the pathophysiology of disease.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 54A COMPARATIVE VETERINARY ANATOMY & PHYSIOLOGY FOR THE VETERINARY TECHNICIAN

[Edit Course Outline](#)

APAV 54A COMPARATIVE VETERINARY ANATOMY & PHYSIOLOGY FOR THE VETERINARY TECHNICIAN Summer 2018
84 total hours. 5 Units

Total Contact Hours: 84 *(Total of All Lecture and Lab hours X 12)*

Total Student Learning Hours: 180 *(Total of All Lecture, Lab and Out of Class hours X 12)*

Lecture Hours: 4 Lab Hours: 3 Weekly Out of Class Hours: 8

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement: Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.154 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review

Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

The first of two courses in comparative veterinary anatomy and physiology for veterinary technicians. Clinically relevant veterinary anatomy and physiology. Discussion of the similarities and differences among the major domestic species. The first course introduces basics of chemistry to help the student interpret the physical and chemical basis of life. Systems included in the first course are: integumentary, muscles, skeletal, and cardiovascular. Emphasis is placed on the normal structure and function of the major organ systems as the foundation for understanding normal physiology and the pathophysiology of disease.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: Not open to students with credit in V T 54A.

2. Course Objectives -

The student will be able to:

- A. Recognize, compare, and contrast the chemical basis of life, and how these elements combine to form the biochemical molecules that make up the various cells and tissues that comprise organs and body systems.
- B. Apply the scientific method.
- C. Describe the functions of various cells and tissues.
- D. Describe the structure and function of the integumentary system in various species.
- E. Describe the structure and function of the skeletal system in various species.
- F. Describe the structure and function of the muscular system in various species.
- G. Describe the structure and function of the cardiovascular system in various species.

3. Special Facilities and/or Equipment -

Lecture and laboratory facility with high-quality overhead projector, instructor computer with internet access, microscope, visualizer, and DVD. Student computers, bench space, anatomy and physiology models, microscopes, prepared microscope slides, preserved specimens, images and video captured from Anatomage model on Foothill campus.

4. Course Content (Body of knowledge) -

- A. Chemical basis of life
 1. Periodic table of the elements
 2. Atoms
 - a. Protons
 - b. Electrons
 - c. Neutrons
 - d. Isotopes
 3. Molecules
 - a. Nomenclature
 - b. Types of bonding
 - c. Biological molecules
 - d. Macromolecules
 1. Sugars
 2. Fats
 3. Proteins
 - a. Structural proteins
 - b. Enzymes
 - c. Nucleic acids
 - e. Salts
 - f. Acids and bases

- 1. Buffer systems
 - g. Energy
- B. Scientific Method
 - 1. Ask a question
 - 2. Form hypothesis
 - 3. Create an experiment or follow a protocol
 - a. Variables
 - 4. Make observations
 - 5. Draw conclusions
 - 6. Write the research
- C. Cells and tissues
 - 1. Cell structure
 - 2. Life cycle of the cell
 - 3. Cell physiology
 - a. Control of cell division
 - b. Protein synthesis
 - 4. Cell differentiation
 - 5. Tissues
 - a. Epithelial
 - b. Connective
 - c. Muscle
 - d. Nervous
 - e. Tissue healing and repair
- D. Integumentary system
 - 1. Terminology and structure
 - 2. Functions
 - 3. Related structures
 - 4. Applications in clinical setting
 - a. Physical examination
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
- E. Skeletal system
 - 1. Terminology and structure
 - 2. Functions
 - a. Axial
 - b. Appendicular
 - c. Visceral
 - d. Joints
 - 3. Applications in clinical setting
 - a. Physical examination
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
 - e. Radiology
- F. Muscles
 - 1. Terminology and structure
 - 2. Functions
 - 3. Applications in clinical setting
 - a. Physical examination
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
- G. Cardiovascular system
 - 1. Terminology and structure
 - 2. Functions
 - a. Cardiac conduction system
 - b. Cardiac output
 - c. Blood vessels
 - d. Fetal circulation
 - 3. Applications in clinical setting
 - a. Physical examination
 - 1. Perfusion
 - 2. Arteries vs. veins
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
 - e. Radiology

5. **Repeatability** - Moved to header area.

6. Methods of Evaluation -

Methods may include but are not limited to the following:

- A. Two written midterm exams
- B. Written final exam
- C. Laboratory evaluations: quizzes and practical exams
- D. Additional in-class or in-laboratory evaluations

7. Representative Text(s) -

Colville, Thomas, and Joanna M. Bassert. Clinical Anatomy and Physiology for Veterinary Technicians. 3rd ed. MO: Mosby Elsevier Publishers, 2016.

Colville, Thomas, and Joanna M. Bassert. Clinical Anatomy and Physiology Laboratory Manual for Veterinary Technicians. MO: Mosby Elsevier Publishers, 2016.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction the student will be in:

- 1. Lecture
- 2. Discussion
- 3. Laboratory demonstration using models, slides, Anatomage model or other lab materials
- 4. Cooperative learning laboratory exercises

10. Lab Content -

- A. Laboratory topics
 - 1. Anatomical terminology of systems covered
 - 2. Applied chemistry: homeostasis
 - 3. Cell and tissue identification
 - 4. Bone taxonomy; survey of axial bones, appendicular bones and markings
 - 5. Muscle taxonomy; survey of major muscles, origins, insertions and actions
 - 6. Arthrology; survey of joint classification and actions
 - 7. Cardiovascular system; flow of blood, perfusion, cardiac cycle, clinical applications
- B. Laboratory skills
 - 1. Identification of major cell and tissue types on prepared histology slides of systems covered
 - 2. Use of laboratory materials such as general laboratory equipment, models and microscopes
 - 3. Ability to follow a protocol, make experimental observations and draw conclusions for experiments involving topics such as homeostasis of cells
 - 4. Define and use all directional terms
 - 5. Identification of three different types of muscles and their characteristics

11. **Honors Description** - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Assignments may include:

- A. Reading assignments
 - 1. Weekly reading assignments in the lecture text and other instructional materials, such as lecture notes, online readings, study guides of approximately 30-60 pages/week
 - 2. Weekly reading assignments in the lab manual and corresponding instructional materials
 - B. Online content and writing assignments
 - 1. Viewing of DVDs or online movies with written summaries
 - 2. Self quizzes
-

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 54B

Course Title: Comparative Veterinary Anatomy & Physiology For The Veterinary Technician

Credit Status:

Credit course
 Noncredit course

Catalog Description:

The second of two courses in comparative veterinary anatomy and physiology for veterinary technicians. Clinically relevant veterinary anatomy and physiology. Discussion of the similarities and differences among the major domestic species. Systems included in this course are: respiratory, gastrointestinal, neurologic, endocrine, reproductive, and urinary. The differences between avian and mammalian anatomy and physiology is discussed. Emphasis is placed on the normal structure and function of the major organ systems as the foundation for understanding normal physiology and the pathophysiology of disease.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

The second of two courses in comparative veterinary anatomy and physiology for veterinary technicians. Clinically relevant veterinary anatomy and physiology. Discussion of the similarities and differences among the major domestic species. Systems included in this course are: respiratory, gastrointestinal, neurologic, endocrine, reproductive, and urinary. The differences between avian and mammalian anatomy and physiology is discussed. Emphasis is placed on the normal structure and function of the major organ systems as the foundation for understanding normal physiology and the pathophysiology of disease.

Prerequisite: APAV 54A; per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: Not open to students with credit in V T 54B.

2. Course Objectives -

The student will be able to:

- A. Describe the structure and function of the respiratory system in various species
- B. Describe the structure and function of the digestive system in various species
- C. Describe the structure and function of the nervous system in various species
- D. Describe the structure and function of the endocrine system in various species
- E. Describe the structure and function of the urinary system in various species
- F. Describe the structure and function of the reproductive system in various species
- G. Describe the anatomical structure and physiology of avian species
- H. Compare and contrast some of the basic differences between birds and mammals in anatomy and physiology

3. Special Facilities and/or Equipment -

Classroom equipped with multimedia presentation and projection capabilities. Computers with Internet access. Student computers, bench space, anatomy and physiology models, microscopes, microscope slides (cytology and histology), preserved specimens, images from Anatomage model at Foothill.

4. Course Content (Body of knowledge) -

- A. Respiratory system
 - 1. Terminology
 - 2. Structure
 - a. Upper respiratory tract
 - 1. Nose
 - 2. Pharynx
 - 3. Larynx
 - 4. Trachea
 - b. Lower respiratory tract
 - 1. Bronchial tree
 - 2. Alveoli
 - 3. Lungs
 - 3. Functions
 - a. Inspiration
 - b. Expiration
 - c. Respiratory volumes
 - d. Alveolar gas exchange
 - e. Control of breathing
 - 4. Clinical applications
 - a. Physical examination
 - b. Nursing care

- c. Clinical pathology
 - d. Comparative anatomy and physiology
 - e. Radiology
- B. Digestive system
1. Terminology and structure
 2. Oral cavity
 3. Esophagus
 4. Stomach
 - a. Monogastric stomach
 - b. Ruminant stomachs
 1. Reticulum
 2. Rumen
 3. Omasum
 4. Abomasum
 5. Nursing ruminant
 5. Small intestine
 6. Large intestine
 7. Rectum, anus
 8. Associated organs
 - a. Liver
 - b. Pancreas
 9. Nutrition
 - a. Nutrients
 1. Water
 2. Carbohydrates
 3. Fats
 4. Proteins
 5. Vitamins
 6. Minerals
 - b. Metabolism
 1. Control of metabolism
 2. Metabolic pathways
 10. Applications in clinical setting
 - a. Physical examination of the gastrointestinal systems of various species
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
 - e. Case studies
- C. Nervous system
1. Terminology and structure
 2. Neurons and supporting cells
 3. Organization
 - a. Central and peripheral nervous systems
 - b. Afferent and efferent nerves
 - c. Autonomic and somatic nerves
 4. Neuron function
 5. Neuron communication
 - a. Neurotransmitters
 6. Brain and spinal cord
 - a. Structures of the brain
 - b. Structures of the spinal cord
 7. Autonomic nervous system
 - a. Structure
 - b. Function
 8. Reflexes
 9. Sense organs
 - a. General senses
 1. Visceral
 2. Touch
 - a. Temperature
 - b. Pain
 - c. Proprioception
 - b. Special senses
 1. Taste
 2. Smell
 3. Hearing
 4. Equilibrium
 5. Vision
 10. Applications in clinical setting
 - a. Neurological examination

- b. Nursing care and considerations
 - c. Comparative anatomy and physiology
 - d. Case studies
- D. Endocrine system
 - 1. Terminology and structure
 - 2. Hormones
 - a. Characteristics
 - b. Control of secretion
 - 3. Major endocrine glands
 - a. Hypothalamus
 - b. Pituitary
 - c. Thyroid
 - d. Parathyroid
 - e. Adrenal
 - f. Pancreas
 - g. Gonads
 - h. Other endocrine organs
 - 1. Kidney
 - 2. Stomach
 - 3. Small intestine
 - 4. Placenta
 - 5. Thymus
 - 6. Pineal
 - 4. Applications in clinical setting
 - a. Physical examination
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
 - e. Case studies
- E. Urinary system
 - 1. Terminology and structure
 - 2. Kidney
 - a. Structure
 - b. Function
 - 3. Ureters
 - 4. Urinary bladder
 - a. Structure
 - b. Function
 - c. Micturition
 - 5. Urethra
 - 6. Applications in clinical setting
 - a. Physical examination
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
 - e. Case studies
- F. Reproductive system
 - 1. Terminology and structure
 - 2. Male reproductive organs
 - a. Testes
 - 1. Structure
 - 2. Function
 - b. Vas deferens
 - c. Accessory glands
 - 1. Seminal vesicles
 - 2. Prostate
 - 3. Bulbourethral
 - d. Penis
 - 1. Structure
 - 2. Function
 - 3. Female reproductive system
 - a. Ovaries
 - b. Oviducts
 - c. Uterus
 - d. Cervix
 - e. Vagina
 - f. Vulva
 - g. Estrous cycle
 - 4. Pregnancy, development, lactation
 - a. Copulation

- b. Fertilization
- c. Implantation
- d. Placenta
 - 1. Structure
 - 2. Attachment
- e. Pregnancy
- f. Parturition
- g. Mammary glands and lactation
 - 1. Species differences
 - 2. Lactation
 - 3. Colostrum
 - 4. Maintenance of lactation
- 5. Applications in clinical setting
 - a. Physical examination
 - b. Nursing care
 - c. Clinical pathology
 - d. Comparative anatomy and physiology
- G. Avian anatomy and physiology
 - 1. Terminology and comparative structures
 - 2. Integument
 - 3. Musculoskeletal
 - a. Flight adaptations
 - 4. Sense organs
 - 5. Endocrine system
 - 6. Digestive system
 - 7. Circulatory system
 - 8. Respiratory system
 - 9. Urogenital system
 - 10. Bird classifications
- H. Comparison of mammalian and avian species

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency through some or all of the following:

- A. Two written midterm exams
- B. A written final exam
- C. Laboratory evaluations, quizzes, and practical exams

7. Representative Text(s) -

Colville, Thomas, and Joanna M. Bassert. Clinical Anatomy and Physiology for Veterinary Technicians. 3rd ed. MO: Mosby Elsevier Publishers, 2016.

Colville, Thomas, and Joanna M. Bassert. Clinical Anatomy and Physiology Laboratory Manual for Veterinary Technicians. MO: Mosby Elsevier Publishers, 2016.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction the student will be in:

- A. Lecture
- B. Discussion
- C. Laboratory demonstration using models, slides, Anatomage model or other lab materials
- D. Cooperative and individual laboratory exercises

10. Lab Content -

- A. Anatomical terminology of systems covered
- B. Identification of major cell and tissue types on prepared histology slides of systems covered
- C. Terminology and identification of structures in the following systems
 - 1. Respiratory system

2. Digestive system
3. Nervous system
4. Sense organs
5. Endocrine system
6. Urinary system
7. Reproductive system
8. Avian anatomy

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Assignments may include:

A. Reading assignments

1. Weekly reading assignments in the lecture text and other instructional materials, such as lecture notes, online readings, study guides of approximately 30-60 pages/week
2. Weekly reading assignments in the lab manual, online, or corresponding instructional materials

B. Writing assignments

1. Viewing of DVDs or online movies with written summaries
2. Self quizzes

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 55

Course Title: Animal Management & Clinical Skills I

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Intended for the pre-clinical nursing training of advanced veterinary assisting apprenticeship students. The following topics are covered: occupational health and safety, dog and cat handling and restraint, administration of medication, assessing dehydration and basic fluid administration, principles of aseptic technique, sanitation, disinfection and sterilization, introduction to principles of surgical nursing and instrumentation.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APAV 55 ANIMAL MANAGEMENT & CLINICAL SKILLS I

[Edit Course Outline](#)

APAV 55

ANIMAL MANAGEMENT & CLINICAL SKILLS I

Summer 2018

72 total hours.

4 Units

Total Contact Hours: 72

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 144

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 3

Lab Hours: 3

Weekly Out of Class Hours: 6

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.132 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Intended for the pre-clinical nursing training of advanced veterinary assisting apprenticeship students. The following topics are covered: occupational health and safety, dog and cat handling and restraint, administration of medication, assessing dehydration and basic fluid administration, principles of aseptic technique, sanitation, disinfection and sterilization, introduction to principles of surgical nursing and instrumentation.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Discuss the state and federal laws that govern safety in the veterinary workplace and describe the requirements for Cal-OSHA compliance.
- B. Compare and contrast eukaryotic, bacterial and viral organisms in structure and function.
- C. Explain the roles of immunity and microorganisms in the disease process.
- D. Identify health and safety hazards in a veterinary clinic or biomedical institution and describe safe practices.
- E. Describe the classes of sterilants, disinfectants and antiseptics and explain their clinical application.
- F. List and employ the principles of aseptic technique and the universal precautions.
- G. Demonstrate safe, humane and proper methods of animal handling and restraint.
- H. Demonstrate competence in preparing and administering medication.
 - I. Describe and assess dehydration in the veterinary patient.
 - J. Identify, properly handle, and maintain common surgical instruments.
- K. Demonstrate or explain proper techniques for the preparation of surgical packs, operation of an autoclave and gas sterilizer.

3. Special Facilities and/or Equipment -

Classroom and laboratory with multimedia presentation and projection capabilities. Laboratory with suitable small animal holding kennels, work tables, supply cabinets and scrub sink. Demonstration equipment and supplies, including fluid administration equipment, medications and administration supplies, autoclave, surgical soft goods and instruments, gowns and gloves.

4. Course Content (Body of knowledge) -

- A. Laws governing health and safety in the workplace
 1. Federal laws
 2. State laws, Cal-OSHA
 3. Local laws
 4. Proper disposal of sharps and medical waste
 5. Documentation
 - a. Four written components required of most veterinary practices
 - b. How to implement a sanitation plan
 - c. Documentation and safety in the workplace
- B. Basic bacterial cell and viral structure and function
 1. Eukaryotic cells
 2. Prokaryotic cells
 - a. Enzyme structure and function
 - b. Anaerobic and aerobic respiration, fermentation
 3. Viral structure and replication
 - a. Bacteriophage vs. mammalian viruses
 - b. Retroviruses, medical significance
- C. Microorganisms and disease
 1. Types of microorganism
 2. Immune responses
 - a. Humoral and cellular immune responses
 - b. Active and passive immunity
 - c. Role of vaccination in preventing disease

3. Portals of entry
4. Pathogenicity and virulence
- D. Health and safety hazards in the veterinary workplace
 1. Chemicals
 2. Biohazardous materials
 3. Radiation safety
 4. Waste anesthetic gas and hazards of compressed gases
 5. Electrical equipment
 6. Animal bites
 7. Zoonotic diseases
 8. Ergonomics
 9. Health hazards and pregnancy
 10. Other safety hazards
- E. Sterilants, disinfectants and antiseptics
 1. Surface application
 2. Surgical instruments
 3. How and where to use different chemicals
 4. Safety Data Sheets
- F. Principles of aseptic technique and universal precautions
 1. Surgical preparation of personnel
 - a. Surgical hand scrub
 - b. Drying hands
 - c. Donning sterile gown
 - d. Gloving techniques
 2. Surgical preparation of the patient
 - a. Aseptic preparation of surgical sites
 - b. Draping techniques
 - c. Patient transport
 - d. Final prep in surgical suite
 3. Preparation of sterile surgical packs
 - a. Instrument
 - b. Gown
 - c. Towel
 - d. Special purpose
 4. Comportment in surgical suite
 5. Record keeping
 6. Universal precautions
 - a. PPE
 - b. Proper hand washing
- G. Animal handling and restraint
 1. Proper lifting technique
 2. Canine restraint
 - a. Canine body language
 - b. Restraint for medical procedures
 3. Feline restraint
 - a. Feline body language
 - b. Restraint for medical procedures
- H. Preparation and administration of medications
 1. Documentation
 2. Five rights
 3. Capsules, tablets and liquids
 4. Syringes and needles
 5. Enteral routes of administration
 - a. Per os
 - b. Per rectum
 6. Parenteral routes of administration
 - a. Subcutaneous
 - b. Intramuscular
 - c. Intravenous
 1. Identify parts of an intravenous administration set
 - d. Intradermal
 - e. Topical
- I. Clinical and laboratory assessment of dehydration in the veterinary patient
 1. Physical findings
 2. Historical information
 3. Laboratory assessment
 4. Nursing assessments
- J. Surgical instruments
 1. Identification of common surgical instruments
 2. Handling and use

3. Care and maintenance
- K. Surgical packs
 1. Selecting instruments
 2. Preparing packs
 3. Operation and maintenance of the autoclave
 4. Principles and method of gas sterilization

5. **Repeatability** - Moved to header area.

6. **Methods of Evaluation** -

The student will demonstrate proficiency by some or all of the following:

- A. Written quizzes and examinations.
- B. Written homework assignments may be assigned.
- C. Term project.
- D. Two practical laboratory examinations. Proficiency will be individually assessed in skills appropriate to this course, as required by the AVMA. Students practice the required skills during lab classes, and know the criteria for demonstration of competency.

7. **Representative Text(s)** -

Bassert, Joanna M., and Dennis M. McCurnin. Clinical Textbook For Veterinary Technicians., 9th ed. W. B. Saunders Co., 2014.

Taylor, Susan. Small Animal Clinical Techniques. 2nd ed. Elsevier, 2016.

Tear, Marianne. Small Animal Surgical Nursing: Skills and Concepts. 2nd ed. Mosby, 2012.

8. **Disciplines** -

Registered Veterinary Technician

9. **Method of Instruction** -

- A. Lecture
- B. Discussion
- C. Cooperative learning exercises
- D. Laboratory: demonstration and practice of skills

10. **Lab Content** -

- A. General restraint (dogs and cats)
 1. Sternal recumbency restraint (dogs and cats)
 2. Lateral recumbency restraint (dogs and cats)
 3. Cephalic venipuncture restraint (dogs and cats)
 4. Saphenous venipuncture restraint (dogs and cats)
 5. Jugular venipuncture restraint (dogs and cats)
 6. Feline neck scruff
 7. Feline towel restraint
 8. Eye/ear medication restraint (dogs and cats)
 9. Canine nylon/leather muzzle application
 10. Apply Elizabethan collar
 11. "Rabies Pole" use (GROUP)
- B. Surgical instrument care, wrapping, and sterilization
 1. Clean surgical instruments
 2. Prepare a surgical pack for sterilization
 3. Sterilize an instrument pack in an Autoclave
- C. Small animal nursing skills
 1. Administer oral tablet or capsule to a dog or cat
 2. Administer oral liquid to a dog or cat
 3. Administer subcutaneous injection to a dog or cat
 4. Administer intramuscular injection to a dog or cat
 5. Administer subcutaneous fluids to a dog or cat

11. **Honors Description** - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Students may be required to complete some or all of the following assignments:

A. Reading assignments

1. Weekly reading assignments from text, class handouts and online resources ranging from 50 to 100 pages per week

B. Writing assignments

1. Short answer essay questions
2. Term project

C. "Nerd Book" project

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 56

Course Title: Animal Management & Clinical Skills II

Credit Status:

Credit course
 Noncredit course

Catalog Description:

Intended for the pre-clinical training of veterinary technology students. Survey of basic responsibilities and technical duties of veterinary technicians. Clinical nutrition and feeding of the dog and cat. Basic principles of wound healing. Basic electrocardiography. Venipuncture for catheter placement, blood collection, and intravenous administration of fluids and medications. Troubleshooting of intravenous catheter set-ups. Bandaging and splinting. Introduction to anesthesia: stages of anesthesia, components of anesthetic equipment. Introduction to basic operating room skills and procedures.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow “much faster than average for all occupations.” (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 56 ANIMAL MANAGEMENT & CLINICAL SKILLS II

[Edit Course Outline](#)

APAV 56

ANIMAL MANAGEMENT & CLINICAL SKILLS II

Summer 2018

72 total hours.

4 Units

Total Contact Hours: 72

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 144

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 3

Lab Hours: 3

Weekly Out of Class Hours: 6

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.132 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Intended for the pre-clinical training of veterinary technology students. Survey of basic responsibilities and technical duties of veterinary technicians. Clinical nutrition and feeding of the dog and cat. Basic principles of wound healing. Basic electrocardiography. Venipuncture for catheter placement, blood collection, and intravenous administration of fluids and medications. Troubleshooting of intravenous catheter set-ups. Bandaging and splinting. Introduction to anesthesia: stages of anesthesia, components of anesthetic equipment. Introduction to basic operating room skills and procedures.

Prerequisite: APAV 55; per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Identify the various components of the ECG machine and record an artifact free diagnostic ECG tracing
- B. Explain the genesis of the electrocardiogram and recognize the components of the ECG
- C. Describe the phases of a typical anesthetic event
- D. Identify the parts, and explain the use of common anesthetic equipment and circuits
- E. Discuss the basic principles of fluid administration
- F. Perform venipuncture and place intravenous catheters
- G. Discuss intravenous catheter maintenance and troubleshooting
- H. Describe the phases of wound healing and exemplary wound care
 - I. Identify common bandage material and explain fundamental principles of bandaging and splinting
 - J. Demonstrate proper application of bandages
- K. Apply basic principles of nutrition and describe clinical feeding practices in the dog and cat

3. Special Facilities and/or Equipment -

Classroom and laboratory equipped with multimedia presentation and projection capabilities. Laboratory equipped with intravenous catheters, needles, syringes, injectable solutions, bandaging materials and splints, microscopes, clinical pathology supplies, vascular access models. Injection models. Expired medications used for teaching.

4. Course Content (Body of knowledge) -

- A. Electrocardiography
 1. Parts of the ECG machine
 2. Types of ECG machines
 3. Recording an ECG
 - a. Artifacts
 - b. Troubleshooting
 - c. Patient position and tips
- B. Electrocardiogram
 1. Genesis of the ECG
 2. Physiology of each wave
 3. Normal variations
 4. Artifacts
 5. Common abnormalities
- C. Phases of a typical anesthetic event
 1. Stages
 2. Planes
 3. Monitoring
 4. Common surgeries
 - a. Neuter
 - b. Spay
- D. Anesthetic equipment and circuits
 1. Gas anesthetic machine
 2. Breathing circuits
 - a. Rebreathing

- b. Non-rebreathing
- E. Fluid administration
 - 1. Fluid compartments in the animal body
 - 2. Oncotic pressure
 - 3. Assessment of dehydration
 - a. Clinical signs
 - b. Calculation
 - 4. Fluid selection
 - 5. Assessment of fluid needs
 - a. Maintenance
 - b. Ongoing losses
 - c. Dehydration
 - d. Rate
 - e. Fluid pumps, drip rates
- F. Venipuncture
 - 1. Selection of vein
 - 2. Selection of syringe and needle
 - 3. Aseptic technique
 - 4. Blood collection
 - 5. Intravenous injections
- G. Intravenous catheter placement, maintenance and troubleshooting
 - 1. Intravenous catheter placement
 - a. Selection of vein
 - b. Selection of catheter
 - c. Securing the catheter
 - 2. Aseptic technique
 - 3. Problems and how to solve them
- H. Wound healing
 - 1. Phases
 - 2. Triage
 - 3. Wound care techniques
- I. Bandages and splints
 - 1. Bandage materials
 - 2. Layers
 - 3. Bandage technique and construction
 - 4. Splints
- J. Bandage application (lab)
- K. Principles of nutrition
 - 1. Energy producing nutrients
 - 2. Non-energy producing nutrients
 - 3. Dog nutritional needs
 - 4. Cat nutritional needs
 - 5. Reading a pet food label
 - a. Laws
 - b. Marketing
 - c. Controversies
 - 6. Client education
 - a. Treatment through nutrition
 - b. Obesity

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

Students will demonstrate proficiency by some or all of the following:

- A. Written quizzes and examinations.
- B. Written homework assignments.
- C. Term project.
- D. Two practical laboratory examinations. Proficiency will be individually assessed in skills appropriate to this course, as required by the AVMA. Students practice the required skills during lab classes, and know the criteria for demonstration of competency.

7. Representative Text(s) -

Bassert, Joanna M., and Dennis M. McCurnin. Clinical Textbook For Veterinary Technicians. 8th ed. W. B. Saunders Co., 2014.

Taylor, Susan. Small Animal Clinical Techniques. Elsevier, 2010.

Tear, Marianne. Small Animal Surgical Nursing: Skills and Concepts. 2nd ed. Mosby, 2012.

Although one or more of these texts is older than the suggested "5 years or newer" standard, it remains a seminal text in this area of study.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

- A. Lecture
- B. Discussion
- C. Cooperative learning exercises
- D. Oral presentations
- E. Laboratory activities: demonstration and skills practice

10. Lab Content -

- A. Intravenous techniques
 - 1. Cephalic vein blood draw (dog and cat)
 - 2. Saphenous vein blood draw (dog and cat)
 - 3. Jugular venipuncture (dog and cat)
 - 4. Intravenous catheterization
 - 5. Intravenous fluid administration
- B. Wound care
 - 1. Clipping
 - 2. Cleaning wounds
- C. Bandages and splints
 - 1. Apply a Modified Robert Jones bandage
 - 2. Mason-Meta splint
 - 3. Robert Jones bandage
- D. Electrocardiography
 - 1. Produce a Diagnostic ECG Tracing
- E. Anesthesia machine parts and flow of oxygen molecule

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

The student may be required to complete some or all of the following assignments:

- A. Reading assignments: Weekly reading assignments from text, class handouts, and online sources ranging from 50-100 pages per week.
- B. Writing assignments, participation in online forum discussions, short answer essay questions.
- C. Research project on nutrition.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 60

Course Title: Veterinary Office Practice

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Principles and practice of veterinary office management for veterinary nursing students. Client relations, telephone techniques, interpersonal skills, and team dynamics. Generation and maintenance of correspondence, medical records, legal forms, and hospital logs. Professional ethics and legal boundaries of the veterinary health care team. Facility management utilizing traditional and electronic media and appropriate veterinary medical terminology and abbreviations. Resume writing and interviewing techniques. Principles of inventory control. Use of practice management software. State and federal laws as they apply to the veterinary practice.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow "much faster than average for all occupations." (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APAV 60 VETERINARY OFFICE PRACTICE

[Edit Course Outline](#)

APAV 60

VETERINARY OFFICE PRACTICE

Summer 2018

24 total hours.

2 Units

Total Contact Hours: 24

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 72

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 2

Lab Hours:

Weekly Out of Class Hours: 4

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 Load Factor: 0.044 FOAP Code: 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Principles and practice of veterinary office management for veterinary nursing students. Client relations, telephone techniques, interpersonal skills, and team dynamics. Generation and maintenance of correspondence, medical records, legal forms, and hospital logs. Professional ethics and legal boundaries of the veterinary health care team. Facility management utilizing traditional and electronic media and appropriate veterinary medical terminology and abbreviations. Resume writing and interviewing techniques. Principles of inventory control. Use of practice management software. State and federal laws as they apply to the veterinary practice.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: Not open to students with credit in V T 60.

2. Course Objectives -

The student will be able to:

- A. Discuss how to schedule appointments, admit, discharge and triage according to client, patient, and facility needs through phone and personal contact.
- B. Develop and provide client education in a clear and accurate manner at a level the client understands.
- C. Create a resume and practice job interviewing skills.
- D. List, describe and maintain all appropriate facility records and logs in compliance with regulatory guidelines.
- E. Practice proper interpersonal and telephone communication skills and demonstrate ability to maintain appropriate interpersonal and client relations.
- F. Demonstrate skill in using practice management software for medical record keeping and practice management.
- G. Describe methods involved in inventory management.
- H. Describe and demonstrate professionalism and identify ethical issues in relation to technician-veterinarian, technician-client, and technician-patient relationships.
- I. Describe the results of stress and the potential for substance abuse by veterinary medical personnel, discuss prevention strategies and identify indications for intervention.
- J. Define various forms of workplace bullying, including sexual harassment and describe the process of addressing this issue in the workplace.

3. Special Facilities and/or Equipment -

Classroom with multimedia projection. Veterinary practice software loaded onto computer(s) for student use.

4. Course Content (Body of knowledge) -

- A. Roles and responsibility as veterinary receptionist
 1. Appointment scheduling based on client, patient, and facility needs
 2. Interpersonal and telephone communication techniques
 3. Admitting patients
 4. Patient discharge procedures
 5. Principles of telephone triage
- B. Client education
 1. Communication styles
 2. Proper use of medical terminology
 3. Methods of client education
 - a. Written
 - b. Verbal
 - c. Other means of communication
- C. Job acquisition skills
 1. Resume writing
 2. Interviewing techniques
- D. Regulatory guideline compliance
 1. Legal restrictions and legal liability
 2. Common hospital logs
 - a. Radiography
 - b. Surgery

- c. Anesthesia
 - d. Laboratory
 - e. Controlled substance
- 3. Legal forms and certificates
- 4. Record keeping and filing
- E. Interpersonal communication skills
 - 1. Principles of personnel management, and skills and personal characteristics of good managers
 - 2. Procedures for hiring and firing employees: job descriptions, interviews, evaluations
 - 3. Motivating employees
 - 4. Employee rights and responsibilities
 - 5. Teamwork
- F. Medical record keeping
 - 1. Legal aspects
 - 2. Application of problem oriented veterinary medical record
 - 3. Veterinary practice management software
- G. Inventory control
 - 1. Techniques and theories of inventory control
 - 2. Managing inventory
- H. Professionalism and ethical issues in interpersonal relationships
 - 1. Technician-veterinarian
 - 2. Technician-client
 - 3. Technician-patient
 - 4. Technician-technician and/or veterinary assistant
- I. Stress in the veterinary office
 - 1. Role of stress
 - 2. Substance abuse
 - 3. Prevention strategies
 - 4. Self care
 - 5. Intervention
- J. Office problems
 - 1. Bullying
 - 2. Sexual harassment
 - 3. Injuries and worker's compensation

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by some or all of the following:

- A. Written quizzes and a written final examination
- B. Written report of interview conducted with a veterinary hospital manager
- C. Client education project
- D. Project using practice management software

7. Representative Text(s) -

Bassert, Joanna M. Clinical Textbook For Veterinary Technicians. 9th ed. W. B. Saunders Co., 2017.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

- A. Lecture
- B. Discussion
- C. Oral presentations
- D. Collaborative exercises

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

Assignments may include some or all of the following:

- A. Reading assignments: Weekly reading assignments from text, class handouts, and outside sources ranging from 30 to 60 pages per week.
- B. Five-page written research paper and oral presentation on a client education topic.
- C. Written short answer essay questions.
- D. Reflection paper on personal strengths and weaknesses as it relates to job performance.
- E. Project demonstrating proficiency in using practice management software.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 75A

Course Title: Animal Care Skills I

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Practical application of animal care skills and principles of animal care and management. Opportunity to participate in the health care team involved in the husbandry and management of companion animals in a hospital and shelter environment. Emphasis will be on the basic principles and application of clinical facility management, care and behavior of hospitalized patients, routine maintenance duties, and euthanasia, grief and pet loss support.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow “much faster than average for all occupations.” (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing](#) (New Window)

[Run Compare Utility](#) (New Window)

Apprenticeship

APAV 75A ANIMAL CARE SKILLS I

[Edit Course Outline](#)

APAV 75A

ANIMAL CARE SKILLS I

Summer 2018

36 total hours.

1 Unit

Total Contact Hours: 36

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 36

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: **Lab Hours:** 3 **Weekly Out of Class Hours:**

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 **Load Factor:** .066 **FOAP Code:** 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Practical application of animal care skills and principles of animal care and management. Opportunity to participate in the health care team involved in the husbandry and management of companion animals in a hospital and shelter environment. Emphasis will be on the basic principles and application of clinical facility management, care and behavior of hospitalized patients, routine maintenance duties, and euthanasia, grief and pet loss support.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: This course is not open to students with credit in V T 75A.

2. Course Objectives -

The student will be able to:

- A. Describe and perform proper husbandry of dogs and cats
- B. Describe and perform standard operating procedures for facilities care
- C. Exhibit professionalism and perform responsibly in providing for the needs of patients and in working collaboratively with coworkers
- D. Describe basic principles of dog and cat behavior
- E. Demonstrate low stress handling techniques for dogs and cats
- F. Perform basic steps in physical examination of dogs and cats
- G. Interpret findings discovered during physical examination of dogs and cats
- H. Discuss pet euthanasia: the role of the AVMA, veterinarian, technician, and the pet owner in all aspects of euthanasia and pet loss

3. Special Facilities and/or Equipment -

Dogs and cats. Housing and restraint facilities. Laboratory equipped with examination tables and diagnostic and therapeutic equipment and supplies.

4. Course Content (Body of knowledge) -

- A. Dog and cat husbandry protocols
 1. Orientation to facility(ies)
 2. Observation of normal patients in confinement
 3. Routine animal husbandry requirements
 - a. Dogs
 - b. Cats
- B. Standard operating procedures for facility maintenance
 1. Principles of disinfection
 - a. Routine cleaning and sanitation
 2. Inventory
 3. Record keeping
 4. Care and safe use of cleaning equipment
- C. Working as a professional
 1. Definition of a professional person
 2. Interpersonal communication
 3. Performance of animal care according to hospital protocols
 4. Medical record keeping
 5. Medical communication with peers and superiors
 - a. Doctor's orders
 - b. Rounds
 6. Teamwork
 - a. Assuming personal responsibility
 - b. Communications
- D. Dog and cat behavior
 1. Role of veterinary technician in animal behavior
 2. Canine behavior and development
 - a. Canine sensory perception
 - b. Canine communication

3. Canine social structure
4. Canine behavior at different stages of development
 - a. Sensitive periods of development
5. Problem prevention in the canine
6. Feline behavior and development
 - a. Feline sensory perception
 - b. Feline communication
7. Feline social structure
8. Feline behavior at different stages of development
 - a. Sensitive periods of development
9. Problem prevention in the feline
- E. Low stress handling techniques for dogs and cats
 1. Human animal bond
 2. Learning and behavior modification
 3. Handling techniques in the veterinary clinic
 4. Low stress veterinary clinic tips
- F. Introduction to physical examination of dogs and cats
 1. History
 2. TPR
 3. Systems approach
 4. Nose to tail approach
 5. Medical record keeping: using SOAP
- G. Interpretation of physical examination findings of dogs and cats
 1. Needs pyramid
 2. Nursing assessments
 3. Normal findings
- H. Pet euthanasia
 1. Decision process
 2. Role of each member of staff
 3. Process of euthanasia
 4. Disposal of remains
 5. Grief as a process
 6. Talking to clients

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by some or all of the following:

- A. Written evaluations
 1. Tests
 2. Reflection assignments
 3. Peer evaluations
- B. Skills evaluations
 1. Technical competency
 2. Conference with instructor
- C. Group projects

7. Representative Text(s) -

Bassett, Joanna M. Clinical Textbook For Veterinary Technicians. 9th ed. W. B. Saunders Co., 2017.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

Discussions, demonstrations, laboratory practice

10. Lab Content -

- A. Daily, routine care of feline and canine patients
- B. Basic principles and application of clinical facility management, routine maintenance duties
- C. Application of dog and cat low stress handling
- D. Case studies to illustrate and practice skills
- E. Collaborative projects

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading assignments: Weekly reading assignments from text, class handouts, and online or outside sources.
- B. Medical record keeping for program teaching animals.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 75B

Course Title: Animal Care Skills II

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Practical application of animal care skills and principles of animal care and management using techniques and knowledge learned in the veterinary technology classes. Students expand their animal care knowledge, skills, and abilities to include skills needed to be successful applying clinical diagnostics in the workplace. Students are expected to apply knowledge of medical terminology, anatomy and physiology to animal care duties. There is an emphasis on professional behavior, medical record keeping, and clinical procedures with dogs and cats.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow “much faster than average for all occupations.” (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APAV 75B ANIMAL CARE SKILLS II

[Edit Course Outline](#)

APAV 75B

ANIMAL CARE SKILLS II

Summer 2018

36 total hours.

1 Unit

Total Contact Hours: 36

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 36

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: **Lab Hours:** 3 **Weekly Out of Class Hours:**

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 **Load Factor:** 0.066 **FOAP Code:** 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Practical application of animal care skills and principles of animal care and management using techniques and knowledge learned in the veterinary technology classes. Students expand their animal care knowledge, skills, and abilities to include skills needed to be successful applying clinical diagnostics in the workplace. Students are expected to apply knowledge of medical terminology, anatomy and physiology to animal care duties. There is an emphasis on professional behavior, medical record keeping, and clinical procedures with dogs and cats.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: Not open to students with credit in V T 75B.

2. Course Objectives -

The student will be able to:

- A. Perform physical examination and patient assessment of dogs and cats
- B. Implement the problem oriented veterinary medical record keeping system
- C. Explain a preventive health plan for the dog and the cat
- D. Demonstrate technical competency in basic diagnostic skills
- E. Demonstrate technical competency in basic therapeutic skills

3. Special Facilities and/or Equipment -

Dogs and cats. Housing and restraint facilities. Laboratory equipped with examination tables and diagnostic and therapeutic equipment and supplies, such as: centrifuge, ophthalmic diagnostic supplies (Tonopen, Schirmer tear tests, Fluorescein ophthalmic dye, ultraviolet light), otoscopes and variety of ear cones, ophthalmoscopes, dog and cat grooming supplies, microscopes, slides, stains and mineral oil, and other veterinary clinic supplies.

4. Course Content (Body of knowledge) -

- A. Physical examination and patient assessment
 1. History taking
 - a. Dogs
 - b. Cats
 2. Physical examination
 - a. Dogs
 - b. Cats
 3. Nursing assessments
 - a. Differentiation between DVM and RVT assessment
 - b. Examples
 - c. Priority pyramid
- B. Problem oriented veterinary medical record keeping system
 1. Reading medical records
 2. Entering data into medical records
 3. SOAP system
 4. Common abbreviations
 5. Following directions
- C. Preventive health care plans for the dog and the cat
 1. Principles of vaccination
 - a. Core vaccines for dogs
 - b. Core vaccines for cats
 2. Deworming
 - a. Common nematodes
 - b. Tapeworms
 3. External parasite control
 4. Heartworm testing and prevention
 5. FeLV/FIV testing and prevention
 6. Medical communication
 - a. Doctor's orders
 - b. Explaining preventive care to clients

- D. Basic diagnostic skills
 - 1. Dermatologic skills
 - a. Skin scraping
 - b. Ectoparasite exam
 - c. Dermatophyte test
 - d. Skin cytology
 - e. Ear cytology
 - 2. Ophthalmic skills
 - a. Schirmer tear test
 - b. Fluorescein stain
 - c. Tonopen
- E. Basic therapeutic skills
 - 1. Ear exam and ear cleaning
 - 2. Nail trim: dog and cat
 - 3. Grooming dogs
 - 4. Grooming cats
 - 5. Anal sac expression

5. **Repeatability** - Moved to header area.

6. Methods of Evaluation -

The student will demonstrate proficiency by some or all of the following:

- A. Written evaluations
 - 1. Tests: midterm and final examinations
 - 2. Reflection assignments
 - 3. Peer evaluations
 - 4. Short research paper
- B. Skills evaluations
 - 1. Technical competency of essential skills
 - 2. Conference with instructor
 - 3. Group projects

7. Representative Text(s) -

Bassert, Joanna M., and Dennis M. McCurnin. Clinical Textbook For Veterinary Technicians. 9th ed. W. B. Saunders Co., 2014.

Rockett, Lattanzio, Christensen. The Veterinary Technician's Guide to Writing SOAPS. Rockett House Publishing, 2013.

Although one or more texts is older than the suggested "5 years or newer" standard, it remains a seminal text in this area of study.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

During periods of instruction the student will be:

- A. Observing demonstrations and lectures
- B. Practicing on models and patients if indicated
- C. Participating in collaborative exercises and lab activities

10. Lab Content -

- A. Repetition of physical examination skills until proficient
- B. Practical application of animal care skills and preventive care as discussed in class
- C. Practice the following dermatologic and ophthalmic essential skills under trained instructors as required by the AVMA:
 - 1. Trim toenails in a dog or cat
 - 2. Express anal sacs - canine
 - 3. Perform a skin scraping
 - 4. Dermatophyte testing
 - 5. Application of topical medication
 - 6. Ear swab collection and preparation (dog or cat)

7. Cleaning ears prior to medication (dog or cat)
8. Administer ear medication
9. Administer eye drops or ointment to a dog or cat
10. Perform a Schirmer Tear Test
11. Perform a Fluorescein Stain Test
12. Tonometry

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading assignments: Weekly reading assignments from texts, class handouts, and online and/or outside sources.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APAV 81

Course Title: Clinical Pathology Methods

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Fundamental studies of laboratory techniques and procedures involved in evaluating veterinary clinical samples. Areas of study include hematology, urinalysis, coagulation assessment, blood biochemistry and immunological testing, serology, clinical parasitology, and cytology. The veterinary technician's role in sample collection, sample storage and handling, and performance of analytic procedures will be emphasized. Skills are developed in the use of laboratory equipment, laboratory safety and management, and quality control and quality assurance.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Apprenticeship in Veterinary Assisting Certificate of Achievement

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course and associated Apprenticeships are intended to provide qualified, trained assistants in veterinary clinics. Students completing the course may be eligible for increased responsibilities and salaries depending on their employer. The Apprenticeship creates an additional pathway to a career as a Registered Veterinary Technician.

The Bureau of Labor Statistics data states that demand for veterinary technicians and technologists is expected to grow “much faster than average for all occupations.” (Bureau of Labor Statistics cited on <https://www.bls.gov/OOH/healthcare/veterinary-technologists-and-technicians.htm>) Thirty percent growth in this field is expected in California. Despite the need for RVTs and advanced veterinary assistants in San Francisco, there is no such program in the county. This particular apprenticeship targets under-employed populations who have limited college experience but a strong interest in animals and who are dedicated to the mission of the SF SPCA.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Lisa Eshman, DVM **Date:** 1/19/18

Division Curriculum Representative: BFM **Date:** 1/26/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APAV 81 CLINICAL PATHOLOGY METHODS

[Edit Course Outline](#)

APAV 81

CLINICAL PATHOLOGY METHODS

Summer 2018

84 total hours.

5 Units

Total Contact Hours: 84

(Total of All Lecture and Lab hours X 12)

Total Student Learning Hours: 180

(Total of All Lecture, Lab and Out of Class hours X 12)

Lecture Hours: 4

Lab Hours: 3

Weekly Out of Class Hours: 8

Note: If Lab hours are specified, the *item 10. Lab Content* field must be completed.

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade Only

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability: CSU

Validation: 1-10-17

Division Dean Information -

Seat Count: 15 **Load Factor:** 0.154 **FOAP Code:** 11500014222710210

Instruction Office Information -

FSA Code: 0100 - ANIMAL HEALTH

Distance Learning: no

Stand Alone Designation: no

Program Title: VETERINARY TECHNOLOGY

Program TOPs Code: 010210

Program Unique Code: 6009

Content Review Date:

Former ID:

Need/Justification -

The apprenticeship program grants certificates upon completion of a series of classes and demonstration of skills, progressing through several levels of veterinary assisting. Each certificate includes higher expectations by the employer and more responsibility. Students completing certificates may be eligible for additional employment opportunities or salary increases depending on their employer. This course will be a required core course for the forthcoming certificate of achievement in Advanced Veterinary Assisting.

1. Description -

Fundamental studies of laboratory techniques and procedures involved in evaluating veterinary clinical samples. Areas of study include hematology, urinalysis, coagulation assessment, blood biochemistry and immunological testing, serology, clinical parasitology, and cytology. The veterinary technician's role in sample collection, sample storage and handling, and performance of analytic procedures will be emphasized. Skills are developed in the use of laboratory equipment, laboratory safety and management, and quality control and quality assurance.

Prerequisite: APAV 55; per California Code of Regulations, this course is limited to students admitted to the Advanced Veterinary Assisting Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Recognize and discuss the responsibilities of the veterinary technician in a clinical laboratory setting as it relates to the veterinarian, other veterinary health care team members, and the patient.
- B. Discuss, evaluate and perform basic procedures in veterinary hematology, including preparation and staining of blood smears; blood cell identification and enumeration; and determination of blood parameters and indices.
- C. Discuss, evaluate and perform basic procedures in veterinary urinalysis, including sample preparation; determination of physical and biochemical properties; and microscopic sediment examination.
- D. Discuss, evaluate, and perform basic procedures in veterinary coagulation assessment, including sample handling and common coagulation tests.
- E. Discuss, evaluate, and perform basic procedures in veterinary serum biochemistry including organ function tests and health profiles utilizing automated blood analyzers.
- F. Discuss, evaluate, and perform basic procedures in veterinary serology, including comparing and contrasting the methodologies employed in serological and immunologic testing.
- G. Discuss, evaluate, and perform basic procedures in veterinary cytology, including sample collection and preparation, and cell identification.
- H. Discuss, evaluate, and perform basic procedures in veterinary clinical parasitology including identification of hemoparasites, and common internal and external parasites.

3. Special Facilities and/or Equipment -

Classroom equipped with multimedia presentation and projection capabilities. Computers with Internet access. Laboratory equipped with microscopes, centrifuges, slides, tubes. Clinical laboratory equipment: manual and automated cell counters, biochemistry analyzers, dry chemistry tests, stains and accessories. Access to clinical samples from dogs and cats.

4. Course Content (Body of knowledge) -

- A. Role of the veterinary technician in the clinical laboratory
 1. Definition of clinical pathology
 2. Roles of veterinary technician in the clinical pathology laboratory
 3. Responsibility of the veterinary technician to the veterinarian, other members of the health care teams and patient
 4. Quality control and quality assurance
 5. Laboratory safety and management
 6. Introduction to manual and automated laboratory equipment
- B. Veterinary hematology
 1. Characteristics of blood and formation of blood elements
 2. Sample collection, storage, and preparation
 3. The complete blood count
 - a. Preparation and staining of the blood smear and buffy coat smear
 - b. Hematocrit: packed cell volume and total protein
 - c. The differential white blood cell count, including white blood cell morphology
 - d. Red blood cell morphology and indices
 - e. Reticulocyte count
 - f. Platelet morphology, estimate and count
 4. Classification of anemia

5. White blood cell responses in disease
 6. Use of clinical laboratory equipment for analyzing blood
 7. Quality control and quality assurance
- C. Veterinary urinalysis
1. Review of renal function and formation of urine
 2. Sample collection, storage, and preparation
 3. Indications for and value of urinalysis in patient assessment
 4. Examination of urine
 - a. Physical examination
 - b. Chemical examination
 - c. Microscopic examination of urine sediment: identification and enumeration of formed elements
 5. Clinical significance of urinalysis findings
 6. Safe and proper collection and handling of urine
 7. Proper use of equipment used in performing urinalysis
 8. Quality control and quality assurance
- D. Veterinary coagulation assessment
1. Platelets and primary hemostasis; clotting factors and secondary hemostasis
 2. Sample collection, storage, and preparation
 3. Bleeding time test
 4. Whole blood clotting time test
 5. Coagulation screening, including assessment of the intrinsic and extrinsic clotting systems
 6. Common veterinary hemostatic disorders
 7. Quality control and quality assurance
- E. Veterinary biochemistry
1. Applications of biochemistry profiles and individual organ function tests
 2. Sample collection, storage, and preparation
 3. Principles of enzyme assay and biochemical reaction testing
 - a. Discussion of dry chemistry methodologies
 4. Importance of quality control and reference ranges
 5. Specific biochemistry tests for evaluation of organ function
 6. Proper use and care of automated chemistry analyzers
 7. Quality assurance of automated chemistry analyzers
- F. Veterinary serology
1. Review of basic immunologic responses
 2. Applications of serology and immunodiagnostics to veterinary clinical diagnosis
 3. Sample collection, storage, and preparation
 4. Methodologies used in immunodiagnostic testing
 5. ELISA technology: principles, reactants, kits
 6. Fluorescent antibody testing
 7. Basic interpretation of the results of immunodiagnostic tests
 8. Quality control and quality assurance
- G. Veterinary cytology
1. Common clinical samples and their diagnostic value
 2. Sample collection, storage, and preparation
 - a. Fine needle aspirates and impression smears
 - b. Swabs and scrapings
 - c. Fluid analysis
 3. Vaginal cytology
- H. Veterinary clinical parasitology
1. Hemoparasites
 2. Common internal parasites
 3. Common external parasites
 4. Quality control and quality assurance

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

Some or all of the following methods of evaluation will be used:

- A. Written examinations.
- B. Practical examinations.
- C. Written case study.
- D. Demonstration of the required essential skills taught in this class using standard criteria for competency.

7. Representative Text(s) -

Hendrix, Charles M., and Margi Sirois. Laboratory Procedures for Veterinary Technicians. 6th ed. Elsevier, 2016.
 Reagan, et al. Veterinary Hematology: Atlas of Common Domestic Species. 2nd ed. Wiley-Blackwell, 2008.

Although one or more text is older than the suggested "5 years or newer" standard, it remains a seminal text in this area of study.

8. Disciplines -

Registered Veterinary Technician

9. Method of Instruction -

- A. Lecture
- B. Discussion
- C. Laboratory
- D. Demonstration

10. Lab Content -

- A. Complete blood count (CBC)
 - 1. Blood film preparation
 - 2. Staining slides
 - 3. Packed cell volume
 - 4. Total protein
 - 5. Total WBC count
 - 6. Differential white blood cell count
 - 7. RBC count and morphology
- B. Blood chemistries and serology
 - 1. Prepare serum and plasma for analysis
 - 2. Serum chemistry panel
 - 3. Perform serologic test (ELISA)
- C. Diagnostic procedures for blood microfilaria
 - 1. Direct drop
 - 2. Modified Knott's Test
- D. Urine collection
 - 1. Voided sample (dog)
 - 2. Cystocentesis (GROUP)
 - 3. Place a urinary catheter in a male dog (GROUP)
- E. Urinalysis
 - 1. Specific gravity
 - 2. Chemical analysis
 - 3. Sediment analysis
- F. Diagnostic procedures for fecal parasites
 - 1. Direct fecal smear
 - 2. Fecal flotation
 - 3. Fecal centrifugation and read fecal slide
- G. Vaginal cytology
 - 1. Collect and prepare vaginal cytology – canine (GROUP)
- H. Coagulation test
 - 1. BMBT and/or ACT (GROUP)

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Reading assignments: Weekly reading assignments from text, class handouts, and online sources ranging from 50 to 100 pages per week.
- B. Written short answer essay questions.
- C. Written case study.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APCA 100

Course Title: CULINARY SAFETY & SANITATION

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Students will study first aid, food safety management and other safety issues related to food service operations. They will learn how to assess the threat of contamination, prevention measures, and alternative responses to food safety and other concerns, such as allergens. The course also presents other material critical to safety in the modern day professional kitchen, including Hazard Analysis Critical Control Point (HACCP) and active managerial control. A case study in the form of food safety inspection and audit of the cafeteria and culinary classroom kitchen will give students a chance to see the difficulties that face food service operators every day.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Proposed Apprenticeship in Culinary Arts

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course is part of the proposed culinary apprenticeship program and will help students gain and retain jobs within the culinary arts profession. The course teaches job skills for employability and life skills. Food service jobs are expected to increase at an annual rate of 1.7% in the Santa Clara County through 2024 per EDD LMI short term projections (<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Short>), approximately 2400 additional jobs a year. Students completing these courses and the Apprenticeship will be immediately employable in this growing market.

Criteria C. Curriculum Standards (please initial as appropriate)

- The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Stephen Hazelton **Date:** 1/18/18

Division Curriculum Representative: BFM **Date:** 1/18/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APCA 100 CULINARY SAFETY & SANITATION

[Edit Course Outline](#)

APCA 100

CULINARY SAFETY & SANITATION

Summer 2018

40 hours total: 32 hours lecture, 8 hours laboratory.

2.5 Units

Repeatability -

Statement: Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 30 **Load Factor:** .060 **FOAP Code:** 115000142226130630

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is part of the culinary arts apprenticeship program and will help students gain and retain jobs within the culinary arts profession. Sanitation is required, and a certificate in food handling is now required by the State of California for any and all who work with food that is served to the public.

1. Description -

Students will study first aid, food safety management and other safety issues related to food service operations. They will learn how to assess the threat of contamination, prevention measures, and alternative responses to food safety and other concerns, such as allergens. The course also presents other material critical to safety in the modern day professional kitchen, including Hazard Analysis Critical Control Point (HACCP) and active managerial control. A case study in the form of food safety inspection and audit of the cafeteria and culinary classroom kitchen will give students a chance to see the difficulties that face food service operators every day.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Culinary Arts Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Complete CPR and first aid training and obtain certification.
- B. Demonstrate temperature checks on refrigeration equipment.
- C. Complete ServSafe Food Handler Program and obtain certificate in food handling.
- D. Demonstrate sanitizer level checks on three-compartment sinks.
- E. Demonstrate safe work practices.
- F. Describe proper techniques to prevent injuries while using and cleaning foodservice equipment and tools.
- G. Describe basic cuts and burns and how to treat these wounds.
- H. Identify the different classes of fire extinguishers and describe how to use one.
 - I. Demonstrate temperature checks on refrigeration equipment.
 - J. Prepare for and pass the ServSafe Food Protection Manager Certification exam.

3. Special Facilities and/or Equipment -

- A. Laptop computer and projector or TV screen
- B. Whiteboard with erasable markers
- C. Access to commercial kitchen for demonstrations and practice

4. Course Content (Body of knowledge) -

- A. Providing Safe Food (Lec)
- B. The Microworld (Lec)
- C. Contamination and Food Allergens (Lec)
- D. Hygiene and Safe Food Handling (Lec and Lab)
- E. The Flow of Food (Lec and Lab)
- F. Purchasing, Receiving, and Storage (Lec and Lab)
- G. Preparation (Lec and Lab)
- H. Service (Lec and Lab)
 - I. Food Safety Management Systems (Lec and Lab)
- J. Facilities and Equipment (Lec)
- K. Cleaning and Sanitizing (Lec and Lab)
- L. Integrated Pest Management (Lec)
- M. Food Safety Regulations and Standards (Lec)
- N. Employee Food Safety Training (Lec)
- O. First Aid (Lec and Lab)

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Written examinations
- B. Routine checks for understanding
- C. Evaluation of notebook
- D. Student presentations
- E. Quizzes based on the units

7. Representative Text(s) -

ServSafe Manager Book, 7th ed. English, with exam answer sheet. National Restaurant Association, 2017.

8. Disciplines -

Culinary Arts/Food Technology

9. Method of Instruction -

- A. Lecture
- B. Discussion
- C. Demonstration: Sodexo Cafeteria at San Jose Job Corps (HACCP) and San Jose Job Corps Center Culinary Patio Room (active managerial control). Students will compare and contrast the two food service safety systems and see the protocols in action

10. Lab Content -

The audit of the cafeteria run by Sodexo and the Patio Room run by the San Jose Job Corps Patio Room will be an intense look at food service operations and the sanitation challenges that they face leading to the assigned comparative study.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Required reading of the ServSafe Manager textbook; students will take quizzes after each chapter.
- B. Students will be certified food handlers and earn the certification of ServSafe Food Protection Manager.
- C. Students will write an 1800-word compare and contrast paper regarding their audit of the San Jose Job Corps Center Patio Room and the Sodexo Cafeteria at the San Jose Job Corps. Students will also make a team presentation of their findings to Sodexo and SJJC representatives using Powerpoint.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APCA 101

Course Title: BASIC CULINARY THEORY

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Students will be exposed to food chemistry and the vocabulary necessary to succeed in an industrial food service setting. Topics will range from baking to cold kitchen preparation to various understandings of dry and moist cooking techniques. In addition, students will learn product identification and protocols in food handling and preferred cooking methods for meats, poultry, fruits, vegetables, starches, legumes, fish and shellfish.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Proposed Apprenticeship in Culinary Arts

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

NOTE: *If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course is part of the proposed culinary apprenticeship program and will help students gain and retain jobs within the culinary arts profession. The course teaches job skills for employability and life skills. Food service jobs are expected to increase at an annual rate of 1.7% in the Santa Clara County through 2024 per EDD LMI short term projections (<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Short>), approximately 2400 additional jobs a year. Students completing these courses and the Apprenticeship will be immediately employable in this growing market.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Stephen Hazelton **Date:** 1/18/18

Division Curriculum Representative: BFM **Date:** 1/18/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APCA 101 BASIC CULINARY THEORY

[Edit Course Outline](#)

APCA 101

BASIC CULINARY THEORY

Summer 2018

40 hours total: 32 hours lecture, 8 hours laboratory.

2.5 Units

Repeatability -

Statement: Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 30 **Load Factor:** .060 **FOAP Code:** 115000142226130630

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is part of the culinary arts apprenticeship program and will help students gain and retain jobs within the culinary arts industry.

1. Description -

Students will be exposed to food chemistry and the vocabulary necessary to succeed in an industrial food service

setting. Topics will range from baking to cold kitchen preparation to various understandings of dry and moist cooking techniques. In addition, students will learn product identification and protocols in food handling and preferred cooking methods for meats, poultry, fruits, vegetables, starches, legumes, fish and shellfish.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Culinary Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Know the qualities and properties of food items and ingredients used in food preparation, including meat, poultry, fruits, vegetables, starches, dairy products, and seafood
- B. Identify the cuts and structure of beef, pork, lamb, chicken, fish, and shellfish
- C. Demonstrate an extensive vocabulary in regards to the culinary profession
- D. Summarize the details of meat inspection, grading, handling, storage and desired cooking methods of various cuts of beef, pork, lamb, poultry, fish, and shellfish
- E. Distinguish between the different market forms of fish and shellfish, and the types of mollusks, crustaceans, and other seafood, like squid
- F. Distinguish between various market forms of fruits, vegetables, herbs, spices, and grains via product ID test
- G. Identify dry and moist cooking methods for fruits, vegetables, grains, and legumes
- H. Understand purchasing and storage concerns for fresh, canned, frozen, and dried vegetables
- I. Understand the concepts of coagulation, caramelization, fermentation, radiation, heat conduction, and emulsification in food chemistry
- J. Know the principle of mise en place, including the placement and order of use of ingredients, tools, and supplies
- K. Produce salads, sandwiches, cold soups, dressings, and forcemeats, including sausages
- L. Know the qualities and properties of food items and ingredients used for baked goods, pastries, and desserts

3. Special Facilities and/or Equipment -

- A. Classroom with a flat screen television and laptop or computer for presentations
- B. Whiteboard with markers
- C. Fully equipped commercial kitchen for demonstrations and practice

4. Course Content (Body of knowledge) -

- A. Theories and chemistry of stocks, soups, and sauces (Lec)
- B. Knives: proper use, sharpening, and maintenance of kitchen knives (Lec and Lab)
- C. Meat, poultry, and game identification and fabrication (Lec and Lab)
- D. Fish and shellfish identification and fabrication (Lec and Lab)
- E. Guidelines in regard to fruits, vegetables, herbs, spices (Lec and Lab)
- F. Starches, grains, and dry goods identification (Lec and Lab)
- G. Cooking methods: grilling, broiling, and roasting (Lec and Lab)
- H. Cooking methods: sauteing, pan frying, and deep frying (Lec and Lab)
- I. Cooking methods: steaming and poaching (Lec and Lab)
- J. Cooking methods: braising and stewing (Lec and Lab)
- K. Egg cookery and the science of eggs (Lec and Lab)
- L. Baking basics (Lec and Lab)
- M. Garde Manger: the science of the cold kitchen (Lec and Lab)

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Written examinations (20%)
- B. Routine checks for understanding (5%)
- C. Evaluation of notebook (10%)
- D. Student presentations and papers (40%)
- E. Quizzes based on the units (15%)
- F. Participation, uniform dress code, and professionalism

7. Representative Text(s) -

Labensky, Sarah, et al. On Cooking: A Textbook for Culinary Fundamentals. New York: Prentice Hall, 2017.

8. Disciplines -

Culinary Arts/Food Technology

9. Method of Instruction -

- A. Lecture
- B. Discussion - vocabulary
- C. Demonstration (e.g., showing students what some items look like, how an emulsification is made)

10. Lab Content -

Students will be handling different products and must identify them, check them for quality, and store them safely. Students will practice knife identification, sharpening and maintenance.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Student will have about 500 pages of reading; must look up vocabulary terms and write them down.
- B. Weekly presentations on certain topics, like rice or potatoes
- C. Five 1200-word papers on food topics. Even though these papers will be broad, they will hopefully inspire interest for the student to gain further knowledge.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APCA 102

Course Title: CULINARY MATH, MEASUREMENTS & CALCULATIONS

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

One of the most important courses in culinary arts, this course instills methods to measure ingredients (volume, weight, time and temperature), convert from U.S. to Metric systems of measurement, calculate portion cost and recipe cost. Also covers pricing strategies and instills an understanding of order guides and invoices. Students will work with ratios and fractions with key ratios applied to achieve an edible result without a recipe. Students will learn to detect flaws in a recipe if the ratio is not correct. Students will produce a portfolio of their own recipe calculations.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Proposed Apprenticeship in Culinary Arts

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course is part of the proposed culinary apprenticeship program and will help students gain and retain jobs within the culinary arts profession. The course teaches job skills for employability and life skills. Food service jobs are expected to increase at an annual rate of 1.7% in the Santa Clara County through 2024 per EDD LMI short term projections (<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Short>), approximately 2400 additional jobs a year. Students completing these courses and the Apprenticeship will be immediately employable in this growing market.

Criteria C. Curriculum Standards (please initial as appropriate)

- The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Stephen Hazelton **Date:** 1/18/18

Division Curriculum Representative: BFM **Date:** 1/18/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APCA 102 CULINARY MATH, MEASUREMENTS & CALCULATIONS

[Edit Course Outline](#)

APCA 102

CULINARY MATH, MEASUREMENTS & CALCULATIONS

Summer 2018

40 hours total: 32 hours lecture, 8 hours laboratory.

2.5 Units

Repeatability -

Statement: Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 30 Load Factor: .060 FOAP Code: 115000142226130630

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is part of the culinary arts apprenticeship program and will help students gain and retain jobs within the culinary arts profession.

1. Description -

One of the most important courses in culinary arts, this course instills methods to measure ingredients (volume, weight, time and temperature), convert from U.S. to Metric systems of measurement, calculate portion cost and recipe cost. Also covers pricing strategies and instills an understanding of order guides and invoices. Students will work with ratios and fractions with key ratios applied to achieve an edible result without a recipe. Students will learn to detect flaws in a recipe if the ratio is not correct. Students will produce a portfolio of their own recipe calculations.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Culinary Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Identify whole numbers, decimals, fractions, and ratios used in food service calculations.
- B. Demonstrate basic whole number, fraction, and decimal calculations (add, subtract, multiply, and divide).
- C. Describe various methods used to measure ingredients (volume, weight, count, length, time, and temperature) and their units of measure.
- D. Identify common tools used to measure in a kitchen.
- E. Identify abbreviations for common units of measure.
- F. Demonstrate the conversion of common units of measure within the U.S. and Metric measurement systems.
- G. Demonstrate accurate measurements using the following methods: volume, weight, count, length, time, and temperature.
- H. Identify various expenses in operating a foodservice establishment (food, labor, etc.).
 - I. Describe menu item food cost and how it is determined.
 - J. Explain how a menu item's selling price is determined.
- K. Describe how portion control, proper measurement of recipe ingredients, and product waste and loss affects an operation.
- L. Demonstrate the ability to assist with the receiving of a food order and check the invoice for receipt of all items listed.
- M. Understand and calculate Cost Volume Profit analysis and break even points.
- N. Read a Profit and Loss (PNL) statement.
- O. Understand and apply concepts in budget making.

3. Special Facilities and/or Equipment -

- A. Commercial kitchen for observation, demonstration and practice
- B. Laptop computer and projector or TV screen
- C. Whiteboard with erasable markers

4. Course Content (Body of knowledge) -

- A. Math basics and basic word problems (Lec and Lab)
- B. Units of measure in weight, volume, and temperature, and their abbreviations in culinary arts (Lec and Lab)
- C. Metric system of measurements and conversions to equivalents in the U.S. Standard system (Lec and Lab)
- D. Units of measure and conversions using the bridge method (Lec)
- E. Conversion of mixed measurements (Lec)
- F. Advanced conversions between weight and volume (Lec and Lab)
- G. Yield percentages (Lec)
- H. As Purchased vs. Edible Portion, and applying yield percentages (Lec and Lab)
 - I. Cost per unit and total cost formulas (Lec)
- J. Edible Portion cost (Lec and Lab)
- K. Recipe costing (Lec)
- L. Labor cost (Lec)
- M. Menu engineering and revenue management (Lec)
- N. The importance of beverage costing and cost control (Lec)
- O. Recipe size conversion (Lec)
- P. Ratios and their importance ((Lec and Lab)
- Q. The Profit and Loss (income) statement (Lec)

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Midterm and Final Exams

- B. Quizzes
- C. Homework
- D. Submission of Recipe Costing Portfolio Project
- E. Routine Checks for Understanding

7. Representative Text(s) -

Hill, Julia, and Linda Blocker. Culinary Math. 3rd ed. John Wiley & Sons, Inc., 2012. ISBN: 978-0-470-06821-2

Although this text may be older than the suggested "5 years or newer" standard, it remains a seminal text in this area of study.

8. Disciplines -

Culinary Arts/Food Technology

9. Method of Instruction -

- A. Lecture
- B. Demonstration: students will see yield percentages in action
- C. Integrated discussion on application
- D. Portfolio: students will cost out their own recipes as part of a project
- E. Case study: restaurant cost control, and profit and loss statement impact

10. Lab Content -

Students will observe and participate in exercises in an operating commercial kitchen to prepare and test recipes. For example: edible portion, where in order to make 10 pounds of chopped fresh pineapple, students will be taught that they need to order 18-20 lbs (two cases) of pineapple to get that yield. In addition, students will observe shrinkage in meat after cooking (fat melts) and be taught that loss needs to be accounted for when planning.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Students will research their own recipes and calculate the total recipe cost and cost per portion. This is critical in developing a pricing strategy for menus.
- B. Homework will focus on calculations and will be intense; will also include a real case study of a confidential company, a Profit and Loss statement, and cost control.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APCA 104

Course Title: BASIC COOKING TECHNIQUES

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Covers basic cooking. Students will make stocks, soups, sauces; prepare vegetables, starches, salads; fabricate and cook various cuts of meat and poultry. Highlights basic cooking techniques, such as sautéing, roasting, poaching, braising, and frying, while following industrial recipes.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Proposed Apprenticeship in Culinary Arts

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE

_____ Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course is part of the proposed culinary apprenticeship program and will help students gain and retain jobs within the culinary arts profession. The course teaches job skills for employability and life skills. Food service jobs are expected to increase at an annual rate of 1.7% in the Santa Clara County through 2024 per EDD LMI short term projections (<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Short>), approximately 2400 additional jobs a year. Students completing these courses and the Apprenticeship will be immediately employable in this growing market.

Criteria C. Curriculum Standards (please initial as appropriate)

X_____ The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Stephen Hazelton _____ **Date:** 1/18/18

Division Curriculum Representative: BFM _____ **Date:** 1/18/18

Date of Approval by Division Curriculum Committee: 1/26/18 _____

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APCA 104 BASIC COOKING TECHNIQUES

[Edit Course Outline](#)

APCA 104

BASIC COOKING TECHNIQUES

Summer 2018

120 hours total: 30 hours lecture, 90 hours laboratory.

5 Units

Repeatability -

Statement: Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 30 **Load Factor:** .180 **FOAP Code:** 115000142226130630

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is part of the culinary arts apprenticeship program and will help students gain and retain jobs within the culinary arts industry.

1. Description -

Covers basic cooking. Students will make stocks, soups, sauces; prepare vegetables, starches, salads; fabricate and

cook various cuts of meat and poultry. Highlights basic cooking techniques, such as sauteing, roasting, poaching, braising, and frying, while following industrial recipes.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Culinary Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Use, maintain, and store the tools, utensils, equipment, and appliances appropriate for preparing a variety of food items.
- B. Make the five mother sauces: bechamel, espagnole, tomato, hollandaise, and veloute, and a sub sauce of each, and store them properly.
- C. Produce soups, stocks, and broths, and cool and store them properly.
- D. Demonstrate proper receiving and storage protocols of various items, including meats, dairy products, eggs, fish, shellfish, produce, dry goods, and other items utilized in food production.
- E. Differentiate between the types of mollusks, crustaceans, and other seafood, like squid.
- F. Identify dry and moist cooking methods for fruits, vegetables, grains, and legumes.
- G. Understand purchasing and storage concerns for fresh, canned, frozen, and dried vegetables.
- H. List quality characteristics and cooking or preparatory methods for legumes.
 - I. Identify different kinds, classes, and market forms of poultry.
 - J. Handle, store, and prepare poultry for safe cooking.
 - K. Explain problems and concerns that occur when stuffing poultry.
 - L. Cook poultry using dry and moist cooking methods safely and effectively.
- M. Make breakfast items, such as omelets, quiche, and fritattas, and understand the concept of mise en place for short order breakfast cooks.
- N. Summarize the details of meat inspection, grading, handling, storage, and desired cooking methods of various cuts of beef, pork, and lamb.
- O. Understand the principle of mise en place, including the placement and order of use of ingredients, tools, and supplies.
- P. Prepare food by using the correct techniques and procedures specified in recipes and formulas.
- Q. Produce salads, sandwiches, cold soups, dressings, and forcemeats, including sausages.
- R. Use plating techniques, including accurate portioning and aesthetic presentation skills.
- S. Plan and follow a food production schedule, including timing and prioritizing of tasks and activities.
- T. Understand the qualities and properties of food items and ingredients used for baked goods, pastries, and desserts.
- U. Produce baked goods, pastries, and desserts, by using correct techniques, procedures, and various finishing techniques.

3. Special Facilities and/or Equipment -

A fully equipped kitchen with NSF or Underwriter Lab certified refrigeration units, a freezer, ovens with 12 range burners, a grill, a salamander broiler, and flat top. A one-compartment dish machine, along with food safe sanitizer dispensary should also be available in the facility.

Television with ability to link directly to a laptop for instructional videos.

4. Course Content (Body of knowledge) -

- A. Knife Skills and Kitchen Equipment (Lec and Lab)
- B. Soups, Stocks and Sauces (Lab)
- C. Vegetables and Fruits (Lab)
- D. Legumes (Lab)
- E. Starches and Grains (Lab)
- F. Meat and Meat Fabrication (Lec and Lab)
- G. Poultry and Poultry Fabrication (Lec and Lab)
- H. Eggs and Breakfast Cookery (Lab)
 - I. Fish and Shellfish (Lec and Lab)
- J. Basic Baking Skills (Lec and Lab)
- K. Garde Manger - The Cold Kitchen (Lec and Lab)
- L. Dairy Products (Lec and Lab)

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Practical examination: students are assessed on professionalism, sanitation, recipe execution, flavor, and presentation (70%)
- B. Routine checks for understanding (5%)
- C. Evaluation of notebook and journals (15%)
- D. Quizzes based on the units covered (10%)

7. Representative Text(s) -

Labensky, Sarah, et al. On Cooking: A Text of Culinary Fundamentals 5th ed. New York: Prentice Hall Publishing, 2015.

8. Disciplines -

Culinary Arts/Food Technology

9. Method of Instruction -

- A. Demonstration
- B. Quizzes
- C. Cooperative learning (teamwork in performance)
- D. Summarizing and note-taking
- E. Identifying similarities and differences (e.g., if four groups are given the same recipe, why are there differences in the end product?)
- F. Homework and practice

10. Lab Content -

Lab content will consist of intense time in the kitchen, where students will produce dishes with the following components:

- A. Soups, Stocks and Sauces
- B. Vegetables and Fruits
- C. Legumes
- D. Starches and Grains
- E. Meat and Meat Fabrication
- F. Poultry and Poultry Fabrication
- G. Eggs and Breakfast Cookery
- H. Fish and Shellfish
- I. Basic Baking Skills
- J. Garde Manger - The Cold Kitchen (several hours on this)
- K. Dairy Products

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Students will write journals analyzing the feedback of their execution of recipes.
- B. Students will read, take notes, and record recipes from the textbook.
- C. Students will produce a notebook, which they can later use as part of a portfolio.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APCA 105

Course Title: CULINARY MENU DEVELOPMENT

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Students develop their own menus for breakfast, lunch, and dinner; develop a beverage program; and cost out the menu items. Students design pricing strategies and submit as a portfolio.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Proposed Apprenticeship in Culinary Arts

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
 Workforce/CTE
 Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course is part of the proposed culinary apprenticeship program and will help students gain and retain jobs within the culinary arts profession. The course teaches job skills for employability and life skills. Food service jobs are expected to increase at an annual rate of 1.7% in the Santa Clara County through 2024 per EDD LMI short term projections (<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Short>), approximately 2400 additional jobs a year. Students completing these courses and the Apprenticeship will be immediately employable in this growing market.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Stephen Hazelton **Date:** 1/18/18

Division Curriculum Representative: BFM **Date:** 1/18/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APCA 105 CULINARY MENU DEVELOPMENT

[Edit Course Outline](#)

APCA 105

CULINARY MENU DEVELOPMENT

Summer 2018

40 hours lecture total.

3.0 Units

Repeatability -

Statement:

Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 30 **Load Factor:** .060 **FOAP Code:** 115000142226130630

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is part of the culinary arts apprenticeship program and will help students gain and retain jobs within the culinary arts industry. The course enables students to showcase a knowledge base to potential employers.

1. Description -

Students develop their own menus for breakfast, lunch, and dinner; develop a beverage program; and cost out the

menu items. Students design pricing strategies and submit as a portfolio.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Culinary Arts Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Explain the difference between commercial and noncommercial food service operations and describe examples of each.
- B. Describe the three levels of management and identify the various production and service positions in a food and beverage operation.
- C. Explain marketing in terms of providing guest-pleasing service and discuss the elements and importance of feasibility studies, marketing research, and marketing plans.
- D. Discuss nutrition and special dietary concerns as they relate to the food service industry and contrast the nutritional concerns and obligations of commercial and noncommercial operations.
- E. Describe menu pricing styles, menu schedules, menu types, and the menu planning process.
- F. Explain how a menu dictates operations in a food and beverage establishment and describe its importance as a marketing tool.
- G. Explain how to create and use a standard recipe and how to calculate costs.
- H. Explain basic menu engineering, menu scoring, and goal value method.
 - I. Understand and identify the concepts that prevail in truth in menu.
- J. Identify and describe the types of service that food and beverage operations can provide and explain how to provide excellent guest service.
- K. Describe the factors involved in facility design and equipment selection for a food and beverage operation and understand effects the menu may impose.
 - L. Explain the importance of staffing in menu development.
- M. Analyze the impacts of menu changes and how they can affect the restaurant not only at a unit level but at a strategic level as well.

3. Special Facilities and/or Equipment -

Laptop computer and projector or TV screen
Whiteboard with erasable markers

4. Course Content (Body of knowledge) -

This course examines the role of the menu in a food service establishment as the driving force and the primary management tool. Every aspect of food service operation is menu driven, including such areas as facility design, inventory controls, pricing and costing, equipment selection, staffing, and style of service. Proper techniques for costing of menu items and proper purchasing techniques will also be covered. Topics include:

- A. Menu Planning (Lec)
- B. Cost Control (Lec)
- C. Menu Pricing Strategies (Lec)
- D. Menu Mechanics (Lec)
- E. Menu Analytics (Lec)
- F. Beverage Menu (Lec)
- G. Service Considerations in Menu Planning (Lec)
- H. Production Concerns in Menu Execution (Lec)
 - I. Financial Planning and the Menu (Lec)
- J. Ethics and Menu (Lec)

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Written portfolio of recipes, costing and marketing plan
- B. Routine checks for understanding
- C. Evaluation of notebook
- D. Student presentations
- E. Quizzes based on the units

7. Representative Text(s) -

Kotschevar, Lendal, and Diane Withrow. Management by Menu. 4th ed. John Wiley and Sons Publications, 2008.

Although this text is older than the suggested "5 years or newer" standard, it remains a seminal text in this area of study.

8. Disciplines -

Culinary Arts/Food Technology

9. Method of Instruction -

- A. Lecture
- B. Discussion
- C. Group projects
- D. Portfolio

10. Lab Content -

Not applicable.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Students will produce a breakfast, lunch and dinner menu.
- B. Students will cost out 12 recipes for one of their menus as part of a portfolio.
- C. Students will submit a base feasibility for their concept and describe their foodservice operation in detail.
- D. Students will present a basic marketing plan for their concept.

Ensure you're using the current version of this form by downloading a fresh copy from [the CCC webpage!](#)

FOOTHILL COLLEGE Stand-Alone Course Approval Request

If a Foothill credit course is **NOT** part of a State approved associate's degree, certificate of achievement or the Foothill College GE Pattern, it is considered by the State to be a "Stand Alone Course." Per Title 5, local curriculum committees must review and approve proposed stand-alone courses to ensure that they are consistent with credit course standards (§55002), the community college mission and there is sufficient need and resources for the course. To be compliant with State regulations, there must be a completed, approved Stand Alone Form on file in the Office of Instruction.

Per our local process, the same process of review and approval is used for noncredit Stand Alone courses.

Stand Alone Course Approval Requests should be completed and forwarded to your Division Curriculum Committee to begin the approval process.

Course #: APCA 106

Course Title: SUSTAINABILITY IN FOOD SERVICE OPERATIONS

Credit Status:

- Credit course
 Noncredit course

Catalog Description:

Covers the principles of sustainability, including issues of animal welfare, nutrition, climate change, farm to table; other issues that impact people and the environment, such as water consumption, wage and supply chain ethics, and the reduction of our environmental footprint. The future of food and technology emerge as topics of discussion, and case studies feature menu innovation, actual operations, and a field trip to a sustainable restaurant or foodservice operation.

Are you requesting Stand Alone approval for the course on a temporary or permanent basis?

- The course will be **permanently** Stand Alone; there are no plans to add it to a State approved degree or certificate, nor to the Foothill GE pattern
- The course will be Stand Alone **temporarily**, and it will be incorporated into a new degree or certificate that is not yet State approved. In this case, identify the degree/certificate to which the course will be added:

Proposed Apprenticeship in Culinary Arts

- What is the specific timeline for program application/approval? (e.g., is your program application locally approved, or is it still in development and if so, what is your anticipated submission date?)

February 2018

***NOTE:** If you have not submitted your program application to the State by the end of the current academic year, you must reapply for permanent Stand Alone approval.*

The Curriculum Committee must evaluate this application based on the following criteria:

Criteria A. Appropriateness to Mission

The Foothill College Mission states: Believing a well-educated population is essential to sustaining and enhancing a democratic society, Foothill College offers programs and services that empower students to achieve their goals as members of the workforce, as future students, and as global citizens. We work to obtain equity in achievement of student outcomes for all California student populations, and are guided by our core values of honesty, integrity, trust, openness, transparency, forgiveness, and sustainability. Foothill College offers associate degrees and certificates in multiple disciplines, and a baccalaureate degree in dental hygiene.

Please indicate how your course supports the Foothill College Mission (select all that apply):

- Transfer
- Workforce/CTE
- Basic Skills

Criteria B. Need

A course may only be granted Stand Alone Approval if there is demonstrable need for the course in the college service area. Please provide evidence of the need or demand for your course, such as ASSIST documentation for transfer courses or Labor Market Information for workforce/CTE courses (if LMI is unavailable, advisory board minutes or employer surveys may be submitted). For basic skills courses, assessment-related data or information may be provided.

Evidence may be attached to this form or provided in the box below.

This course is part of the proposed culinary apprenticeship program and will help students gain and retain jobs within the culinary arts profession. The course teaches job skills for employability and life skills. Food service jobs are expected to increase at an annual rate of 1.7% in the Santa Clara County through 2024 per EDD LMI short term projections (<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html#Short>), approximately 2400 additional jobs a year. Students completing these courses and the Apprenticeship will be immediately employable in this growing market.

Criteria C. Curriculum Standards (please initial as appropriate)

The outline of record for this course has been approved the Division Curriculum Committee and meets the requirements of Title 5

Faculty Requestor: Stephen Hazelton **Date:** 1/18/18

Division Curriculum Representative: BFM **Date:** 1/18/18

Date of Approval by Division Curriculum Committee: 1/26/18

College Curriculum Co-Chairperson: _____ **Date:** _____

Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

[View for Printing \(New Window\)](#)

[Run Compare Utility \(New Window\)](#)

Apprenticeship

APCA 106 SUSTAINABILITY IN FOOD SERVICE OPERATIONS

[Edit Course Outline](#)

APCA 106

SUSTAINABILITY IN FOOD SERVICE OPERATIONS

Summer 2018

40 hours total: 32 hours lecture, 8 hours laboratory.

2.5 Units

Repeatability -

Statement: Not Repeatable.

Status -

Course Status: Active

Grading: Letter Grade with P/NP option

Degree Status: Applicable

Credit Status: Credit

Degree or Certificate Requirement: Stand Alone Course

Foothill GE Status: Non-GE

Articulation Office Information -

C.I.D. Notation:

Transferability:

Validation:

Division Dean Information -

Seat Count: 30 **Load Factor:** .060 **FOAP Code:** 115000142226130630

Instruction Office Information -

FSA Code:

Distance Learning: no

Stand Alone Designation: no

Program Title:

Program TOPs Code:

Program Unique Code:

Content Review Date:

Former ID:

Need/Justification -

This course is part of the culinary arts apprenticeship program and will greatly help students gain and retain jobs within the culinary arts industry. It maintains currency for students, with trends in foodservice and food ethics.

1. Description -

Covers the principles of sustainability, including issues of animal welfare, nutrition, climate change, farm to table; other

issues that impact people and the environment, such as water consumption, wage and supply chain ethics, and the reduction of our environmental footprint. The future of food and technology emerge as topics of discussion, and case studies feature menu innovation, actual operations, and a field trip to a sustainable restaurant or foodservice operation.

Prerequisite: Per California Code of Regulations, this course is limited to students admitted to the Culinary Apprenticeship Program.

Co-requisite: None

Advisory: None

2. Course Objectives -

The student will be able to:

- A. Define and understand the impacts of sustainability.
- B. Define terminology related to food and food service sustainability (recycling, biodegradable, composting, sustainable, organic, local, regional, seasonal, Amish, free range, food miles, heirloom, energy efficient, etc.).
- C. Describe the benefits of food sustainability practices.
- D. Demonstrate the ability to explore current trends in food and food service sustainability using print sources and/or the internet.
- E. Identify products being used in a facility that can be recycled.
- F. Identify products appropriate for composting.
- G. Identify a variety of areas where waste control is used in the kitchen (product, water, energy, etc).
- H. Identify sources for purchasing local foods (produce, meats, etc., as applicable).
 - I. Identify sustainable proteins and seafood.
- J. Identify the benefits of establishing a facility garden to provide produce and herbs for the kitchen.
- K. Identify environmentally friendly cleaning products.

3. Special Facilities and/or Equipment -

Laptop computer and projector or TV screen

Whiteboard with erasable markers

Access to commercial kitchen for observation, demonstration and practice

4. Course Content (Body of knowledge) -

- A. Definition of Sustainability (Lec)
- B. Impacts of Sustainability: 3 Ps - People, Plate and Planet, as opposed to conservation (Lec)
- C. Demographics and Consumer Preferences (Lec)
- D. Nutrition, Health and Sustainable Food (Lec)
- E. Food Ethics: Science and Policy Issues (Lec)
- F. Menu Development (Lec)
- G. Fishing and Seafood Issues (Lec)
- H. Farm to Table and Local Food Movements (Lec and Lab)
 - I. Supply Chain Issues (Lec and Lab)
- J. Water Sustainability (Lec)
- K. Climate Change (Lec)

5. Repeatability - Moved to header area.

6. Methods of Evaluation -

- A. Written examination
- B. Routine checks for understanding
- C. Evaluation of submitted notebook
- D. Student presentations
- E. Quizzes based on the units
- F. Homework assignments

7. Representative Text(s) -

Menus of Change: The Business of Health, Sustainable, Delicious Food Choices Harvard TH Chan School of Public Health and the Culinary Institute of America, 2016.

8. Disciplines -

Culinary Arts/Food Technology

9. Method of Instruction -

- A. Lecture
- B. Discussion
- C. Laboratory
- D. Demonstration: case study of Stanford University and Full Circle Farms

10. Lab Content -

- A. Field trip to Stanford University Residential Dining Hall
- B. Field trip to Full Circle Farm in Sunnyvale

These field trips give the students the chance to see sustainable food service operations and assess the challenges that they undertake. Students will take notes applicable to case studies and papers related to the locations.

11. Honors Description - No longer used. Integrated into main description section.

12. Types and/or Examples of Required Reading, Writing and Outside of Class Assignments -

- A. Two 1800-word (minimum) papers. One is a case study on Stanford University Residential Hall Dining and how it practices sustainability. The second will focus on the supply side and a visit to an organic farm, Full Circle farm in Sunnyvale, CA.
- B. Required reading from the listed text.
- C. Assessment includes one 1200-word essay on the movie Food Inc., in which students express their thoughts on the challenges of sustainability in an economy where mass food production is required. Students also discuss the difficult encounters not just to the food production system but socio-economic concerns as well.

General Education Review Request

AREA I - HUMANITIES

Course Number & Title: _____

Breadth Criteria:

At Foothill College, the primary objective of the general education requirements is to provide students with the depth and breadth of knowledge and understanding required to be independent, thinking persons who are able to interact successfully with others as educated and productive members of our diverse society. Design and implementation of the general education curriculum ensures that students have exposure to all major disciplines, understand relationships among the various disciplines, and appreciate and evaluate the collective knowledge and experiences that form our cultural and physical heritage. General education courses provide content that is broad in scope and at an introductory depth, and all require critical thinking.

A general education enables students to clarify and present their personal views as well as respect, evaluate, and be informed by the views of others. This academic program is designed to facilitate a process that enables students to reach their fullest potential as individuals, national and global citizens, and lifelong learners for the 21st century.

In order to be successful, students are expected to have achieved minimum proficiency in math (MATH 105) and English (ENGL 1A, 1AH or ESL 26) before enrolling in a GE course.

A completed pattern of general education courses provides students with opportunities to acquire, practice, apply, and become proficient in each of the core competencies listed below.

- B1. Communication (analytical reading, writing, speaking, and listening skills including evaluation, synthesis, and research).
- B2. Computation (application of mathematical concepts, and/or using principles of data collection and analysis to solve problems).
- B3. Creative, critical, and analytical thinking (reasoning, questioning, problem solving, and consideration of consequence).
- B4. Community and global consciousness and responsibility (consideration of one's role in society at the local, regional, national, and global level in the context of cultural constructs and historical and contemporary events and issues).
- B5. Information competency (ability to identify an information need, to find, evaluate and use information to meet that need in a legal and ethical way) and digital literacy (to teach and assess basic computer concepts and skills so that people can use computer technology in everyday life to develop new social and economic opportunities for themselves, their families, and their communities).

Depth Criteria for Area I - Humanities:

The humanities include courses in Arts and Letters that give students knowledge and understanding of significant works of the human intellect and imagination. These works cover all the varieties of human expression through time. Knowledge of the significance of the historical and cultural context in which the works are created and interpreted expands the students' awareness of the human condition, cultivating an appreciation of human values and achievements. Humanities courses should enable students to participate in social and cultural communities associated with artistic and literary endeavors, enriching their personal and professional lives.

A course meeting the Humanities requirement incorporates a multidisciplinary approach (drawing from *two or more* of the following - history, literature, philosophy, religion, language, and the arts) as it addresses and explores central questions about the meaning and experience of human life.

A course meeting the Humanities General Education Requirement *must* help students:

- H1. Acquire knowledge and understanding of significant artistic, literary, or philosophical works and the historical and cultural context in which the works were created and interpreted;
- H2. Deepen their knowledge of the human condition through systematic inquiry into consciousness, values, ideas, and ideals;
- H3. Develop appreciation for what is significant about human life and its creations;
- H4. Make reasoned judgments that reflect ethical and aesthetic human values;
- H5. Develop the ability to respond to artistic and literary works both analytically and affectively through writing as well as through other forms of artistic expression.

In addition, courses *must* identify how they will help students achieve *at least two* of the following learning outcomes:

- H6. Understanding of the ambiguities, vagaries, and value inherent in human language;
- H7. Appreciation of nonverbal communication to be found in the visual and performing arts;
- H8. Recognition of the variety of valid interpretations of artistic expression;
- H9. Appreciation of our common humanity within the context of diverse cultures;
- H10. Thinking critically, including the ability to find, recognize, analyze, evaluate, and communicate ideas, information, and opinions as they relate to the products of human intellect and imagination.

**General Education Review Request
AREA I - HUMANITIES**

Course Number & Title: _____

Please map each appropriate component from the **Course Outline of Record** to the appropriate depth and breadth criteria. You can use any part of your COR including course outcomes, expanded content, methods of instruction/evaluation, and/or lab content.

Depth Map: Must include the following:

Course incorporates a multidisciplinary approach (drawing from two or more of the following: history, literature, philosophy, religion, language and the arts) as it addresses and explores central questions about the meaning and experience of human life;

Matching course component(s):

H1. Acquire knowledge and understanding of significant artistic, literary, or philosophical works and the historical and cultural context in which the works were created and interpreted;

Matching course component(s):

H2. Deepen their knowledge of the human condition through systematic inquiry into consciousness, values, ideas, and ideals;

Matching course component(s):

H3. Develop appreciation for what is significant about human life and its creations;

Matching course component(s):

H4. Make reasoned judgments that reflect ethical and aesthetic human values;

Matching course component(s):

H5. Develop the ability to respond to artistic and literary works both analytically and affectively through writing as well as through other forms of artistic expression.

Matching course component(s):

Depth Map: Additionally, must include at least two of the following:

H6. Understanding of the ambiguities, vagaries, and value inherent in human language;

Matching course component(s):

H7. Appreciation of nonverbal communication to be found in the visual and performing arts;

Matching course component(s):

H8. Recognition of the variety of valid interpretations of artistic expression;

Matching course component(s):

H9. Appreciation of our common humanity within the context of diverse cultures;

Matching course component(s):

**General Education Review Request
AREA I - HUMANITIES**

H10. Thinking critically, including the ability to find, recognize, analyze, evaluate, and communicate ideas, information, and opinions as they relate to the products of human intellect and imagination.

Matching course component(s):

Breadth Mapping: please indicate all that apply (if applicable)

B1. Communication (analytical reading, writing, speaking, and listening skills including evaluation, synthesis, and research)

Matching course component(s):

B2. Computation (application of mathematical concepts, and/or using principles of data collection and analysis to solve problems).

Matching course component(s):

B3. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language

Matching course component(s):

B4. Community and global consciousness and responsibility (consideration of one's role in society at the local, regional, national, and global level in the context of cultural constructs and historical and contemporary events and issues).

Matching course component(s):

B5. Information competency (ability to identify an information need, to find, evaluate and use information to meet that need in a legal and ethical way) and digital literacy (to teach and assess basic computer concepts and skills so that people can use computer technology in everyday life to develop new social and economic opportunities for themselves, their families, and their communities).

Matching course component(s):

Requesting Faculty: _____ Date: _____

Division Curriculum Rep: _____ Date: _____

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: _____

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

In the box below, please provide rationale regarding the subcommittee's recommendation:

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____ Date: _____