

**College Curriculum Committee Meeting Agenda**  
**Tuesday, January 22, 2019**  
**2:00 p.m. – 3:30 p.m.**  
**President's Conference Room**

<b>Item</b>	<b>Action</b>	<b>Attachment(s)</b>	<b>Presenter</b>
1. Minutes: November 27, 2018	Action	#1/22/19-1	Armerding
2. Report Out from Division Reps	Discussion		All
3. Announcements a. New Course Proposals b. Courses not Taught in Four Years c. Deadline for 2019-20 Curriculum Sheets d. Certificates of Achievement—Local Designation e. Advisory Council Textbook Memo f. COOL Committee g. CourseLeaf Update h. Film, Television, and Electronic Media ADT Approval	Information	#1/22/19-2—4  #1/22/19-5	Armerding
4. New Subject Code: GLST	Information	#1/22/19-6	Armerding
5. Stand Alone Approval Request: APSC 400	1st Read	#1/22/19-7	Armerding
6. Credit by Exam Policy	Discussion	#1/22/19-8—9	Armerding
7. Program Creation Process Revision	Discussion	#1/22/19-10	Armerding
8. Apprenticeship GE Mapping—Approval	Information	#1/22/19-11—12	Starer
9. Auto-awarding Degrees/Certificates	Discussion		Armerding
10. Good of the Order			Armerding
11. Adjournment			Armerding

**Attachments:**

- #1/22/19-1 Draft Minutes: November 27, 2018
- #1/22/19-2 New Course Proposal: GID 32A
- #1/22/19-3 New Course Proposal: GID 32B
- #1/22/19-4 New Course Proposal: SOC 45
- #1/22/19-5 Advisory Council Memo Re: Textbook Costs (12/10/18)
- #1/22/19-6 New Subject Code Proposal: GLST
- #1/22/19-7 Stand Alone Course Approval Request: APSC 400
- #1/22/19-8 California Code of Regulations §55050 Credit by Examination (Title 5)
- #1/22/19-9 FHDA Administrative Procedure (AP) 4235
- #1/22/19-10 New Program Proposal form—draft (updated)
- #1/22/19-11 Foothill GE Area III (Natural Sciences) Application for Plumbing Technology Apprenticeship Program
- #1/22/19-12 Course Syllabus Example for Plumbing Technology Apprenticeship Program (Year 1, Sem. 2)

## **2018-2019 Curriculum Committee Meetings:**

<u>Fall 2018 Quarter</u>	<u>Winter 2019 Quarter</u>	<u>Spring 2019 Quarter</u>
<del>10/2/18</del>	1/22/19	4/23/19
<del>10/16/18</del>	2/5/19	5/7/19
<del>10/30/18</del>	2/19/19	5/21/19
<del>11/13/18</del>	3/5/19	6/4/19
<del>11/27/18</del>	3/19/19	6/18/19

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

## **2018-2019 Curriculum Deadlines:**

- ~~12/1/18~~ Deadline to submit courses to CSU for CSU GE approval (Articulation Office).
- ~~12/1/18~~ Deadline to submit courses to UC/CSU for IGETC approval (Articulation Office).
- 2/15/19 Deadline to submit local GE applications for 2019-20 catalog (Faculty/Divisions).
- 3/1/19 Curriculum Sheet updates for 2019-20 catalog (Faculty/Divisions).
- 6/1/19 Deadline to submit new/revised courses to UCOP for UC transferability (Articulation Office).
- TBD COR/Title 5 updates for 2020-21 catalog (Faculty/Divisions).
- Ongoing Submission of courses for C-ID approval and course-to-course articulation with individual colleges and universities (Articulation Office).

### **Distribution:**

Ben Armerding (Faculty Co-Chair), Rachelle Campbell (BH), Zachary Cembellin (PSME), Stephanie Chan (LA), Bernie Day (Articulation Officer), Kimberly Escamilla (LA), Isaac Escoto (AS President), Lisa Eshman (BH), Valerie Fong (Acting Dean, LA), Marnie Francisco (PSME), Evan Gilstrap (CNSL), Allison Herman (LA), Kurt Hueg (Dean, BSS), Eric Kuehnl (FA), Kristy Lisle (VP Instruction), Kent McGee (Evaluations), Rosa Nguyen (PSME), Simon Pennington (Dean, FA & KA), Katy Ripp (KA), Lisa Schultheis (BH), Ben Schwartzman (SRC), Lety Serna (CNSL), Barbara Shewfelt (KA), Paul Starer (Administrator Co-Chair), Mary Thomas (LIBR), Anh Tran (SRC), Nick Tuttle (BSS), Mary Vanatta (Curriculum Coordinator), Anand Venkataraman (PSME), Bill Ziegenhorn (BSS)

**COLLEGE CURRICULUM COMMITTEE**

Committee Members – 2018-19

Meeting Date: 1/22/19Co-Chairs (2)

<input checked="" type="checkbox"/>	Benjamin Armerding	7453	Vice President, Academic Senate (tiebreaker vote only)	armerdingbenjamin@fhda.edu
<input checked="" type="checkbox"/>	Paul Starer	7179	Interim Associate Vice-President of Instruction	starerpaul@fhda.edu

Voting Membership (12 total; 1 vote per division)

<input type="checkbox"/>	Rachelle Campbell	7469	BH	campbellrachelle@fhda.edu
<input checked="" type="checkbox"/>	Zachary Cembellin	7383	PSME	cembellinzachary@fhda.edu
<input checked="" type="checkbox"/>	Stephanie Chan		LA	chanstephanie@fhda.edu
<input checked="" type="checkbox"/>	Bernie Day	7225	Articulation	daybernie@fhda.edu
<input type="checkbox"/>	Kimberly Escamilla	7316	LA	escamillakimberly@fhda.edu
<input type="checkbox"/>	Lisa Eshman	7203	BH	eshmanlisa@fhda.edu
<input checked="" type="checkbox"/>	Valerie Fong	7135	Acting Dean—LA	fongvalerie@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"/>	Allison Herman	7460	LA	hermanallison@fhda.edu
<input checked="" type="checkbox"/>	Kurt Hueg	7394	Dean—BSS	huegkurt@fhda.edu
<input checked="" type="checkbox"/>	Eric Kuehnl	7479	FA	kuehneric@fhda.edu
<input checked="" type="checkbox"/>	Rosa Nguyen	7421	PSME	nguyenrosa@fhda.edu
<input type="checkbox"/>	Simon Pennington	7156	Dean—FA/KA	penningtonsimon@fhda.edu
<input checked="" type="checkbox"/>	Katy Ripp	7355	KA	rippkaty@fhda.edu
<input checked="" type="checkbox"/>	Lisa Schultheis	7780	BH	schultheislisa@fhda.edu
<input checked="" type="checkbox"/>	Leticia Serna	7059	CNSL	sernaleticia@fhda.edu
<input type="checkbox"/>	Barbara Shewfelt	7658	KA	shewfeltbarbara@fhda.edu
<input checked="" type="checkbox"/>	Mary Thomas	7522	Library	thomasmary@fhda.edu
<input checked="" type="checkbox"/>	Nick Tuttle	7056	BSS	tuttlenick@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 checked="" type="checkbox"/>	Mary Vanatta	7439	ASFC Rep.	vanattamary@fhda.edu
<input type="checkbox"/>	Kent McGee	7298	Evaluations	mcgeekent@fhda.edu
<input type="checkbox"/>			SLO Coordinator	

Visitors

Ron Painter, Ben Schwartzman, Kathryn Maurer, Kevin Hamal

**College Curriculum Committee  
Meeting Minutes  
Tuesday, November 27, 2018  
2:00 p.m. – 3:30 p.m.  
Room 3504**

Item	Discussion
1. Minutes: November 13, 2018	<b>Approved by consensus.</b>
2. Report Out from Division Reps	<p><b>Speaker: All</b>                      BSS: Plans to introduce new digital marketing certificate. Working on converting non-transcriptable certificates. Working on new SOC 45 course in Gender &amp; Sexuality.</p> <p>Fine Arts: Working on certificates.</p> <p>Kinesiology: No updates to report.</p> <p>Bio Health: Attended guided pathways meeting. Biology dept. starting to look at possible certificates—some possibilities are STEM service learning; allied health certificates.</p> <p>Counseling: Working to clean up curriculum, and check for overlap in course content.</p> <p>SRC: Continuing to update courses, and develop courses for community-based program.</p> <p>PSME: CS dept. working on cloud computing and web development certificate.</p> <p>Language Arts: No updates to report.</p> <p>Library: No updates to report.</p>
3. Announcements a. Notification of Proposed Requisites  b. Spring Registration Dates	<p><b>Speakers: Ben Armerding</b>                      New corequisite for ENGL 246A, new course for 2019-20. Please share with your constituents.</p> <p>Mary Vanatta collecting information from each division about how to handle math requisites/Advisory statements. Would like all changes made by Feb. 28th, ahead of spring registration. CCC will follow up on this topic next quarter, before the deadline.</p>
4. Stand Alone Approval Request: ENGL 246A	<p><b>Speaker: Ben Armerding</b>                      Second read of Stand Alone Approval Request for ENGL 246A. Designed for AB 705 compliance. Language Arts reps highlighted that by allowing students to take this corequisite with ENGL 1AH we are providing opportunity to more students, as well as removing barriers to the honors program.</p> <p>Counseling rep noted concerns about errors in students' writing for college applications, as well as UC concerns in counseling bulletin—some UCs have questioned how grades can be high if the quality of writing does not meet standards. Counseling reps suggested caution about allowing students to enroll in ENGL 1AH.</p> <p>Language Arts division in process of setting up guided self-placement for all students, cannot restrict ESL students from using it; English dept. can no longer rely on placement exams.</p>

	<p>Language Arts rep noted that guided self-placement might not be effective for placing international students. Division will work with Honors Institute to address concerns and continue to communicate expectations of a course with transparency to students.</p> <p>Many division reps noted that an important goal for the college is for students to be able to communicate effectively. Fong remarked that norming across ENGL sections, in addition to communication across different disciplines, are conversations worth continuing. Many reps agreed that quality of writing is a shared responsibility among disciplines.</p> <p>Counseling rep highlighted that their division always encourages students to take MATH and ENGL courses first, to set up students for success in subsequent courses.</p> <p>Motion to approve <b>M/S</b> (Venkataraman, Thomas). <b>Approved.</b></p>
<p>5. Stand Alone Approval Request: NCEL 405</p>	<p><b>Speaker: Ben Armerding</b>                  Second read of Stand Alone Approval Request for NCEL 405. No comments.</p> <p>Motion to approve <b>M/S</b> (Thomas, Gilstrap). <b>Approved.</b></p>
<p>6. Program Creation Process Revision</p>	<p><b>Speaker: Ben Armerding</b>                  Continuation of discussion from previous meeting, and first read of New Program Proposal form.</p> <p>Existing program creation process and documents (e.g., sign-off form, flowchart) do not work, due to new governance structure. CCC exploring possibility of creating a new flowchart; mindful that the conversation must include groups and perspectives from across campus. Many reps agreed that New Program Proposal form could help facilitate the gathering of as much feedback as possible from relevant groups elsewhere on campus.</p> <p>PSME rep commented that the form would give everyone more concrete information that should be communicated across different divisions. Armerding proposed adding boxes for feedback from different committees (e.g., Equity and Education) but not necessarily approval—this feedback could help authors with writing the new program narrative.</p> <p>Many reps agreed that the form should be shared out at an early stage to not waste anyone’s time; agreed that its function is communication, not approval. Armerding highlighted that the form encourages faculty to answer questions to related to resources, and the program’s relation to college goals. Language Arts rep mentioned it would be helpful to know the rationale for the program. Other reps suggested adding “transfer/workforce” selection. Bio Health rep noted value of knowing the purpose of program. Starer stressed need to be mindful of involving different stakeholders in new program creation process, especially those related to resources.</p> <p>Much discussion occurred regarding identifying resources, especially from a curriculum lens. Pennington stated would like to see examples of such resources, including classification (e.g., classroom space, new faculty, etc.). Fong noted hope that program and necessary resources would be discussed with</p>

	<p>division dean and faculty early in process. Many in group wondered how New Program Proposal form fits in with Program Review process, and anticipating what resources might be needed. Group agreed that it would be beneficial to align process with resource request form. Starer suggested consultation with Program Review Task Force; noted that it might not be necessary to consider Program Review, as that process is specific to existing programs, not new programs.</p> <p>Discussion regarding the workflow of the form. Group agreed the form should first come to CCC; however, Starer noted that if a program comes to CCC it should be discussed between division faculty and deans, and CCC might not be best venue to discuss resource allocation. Armerding proposed that decisions about curriculum be made at CCC, with other committees invited to put in expertise or interest. Language Arts rep suggested, for a new program addressing equity, important to consult Dean of Equity, or Equity and Education committee.</p> <p>BSS rep asked where Articulation Officer fits within process, and whether it's the purview of all these committees to comment on new programs. PSME rep noted possibility that new committees might not want the extra work. Starer noted that the more committees the form goes through, the more time it will take. Noted that the Academic Senate President should bring the form to Academic and Professional Matters (APM), since program creation is faculty purview.</p> <p>Armerding agreed it's important to meet with the chairs of the new committees to decide where they fit in the process. Suggested some of the committee work would be info only, will advocate CCC be the final approval step before a new program goes to the board.</p> <p>A few lingering questions include: Whether The Council has ability to determine program approval and discontinuance; How the distribution of resources would be evaluated, since that is not under the purview of CCC; Determining the right balance of feedback and information from the different governance committees. Discussion will continue at next meeting.</p>
7. Credit by Exam Policy	<p><b>Speaker: Ben Armerding</b> Topic moved to next meeting, due to time constraint.</p>
8. Good of the Order	
9. Adjournment	<p><b>3:33 PM</b></p>

**Attendees:** Ben Armerding (Faculty Co-Chair), Jeff Bissell (KA), Zachary Cembellin (PSME), Stephanie Chan (LA), Bernie Day (Articulation Officer), Kimberly Escamilla (LA), Valerie Fong (Interim Dean, LA), Marnie Francisco (PSME), Evan Gilstrap (CNSL), Kurt Hueg (Dean, BSS), Eric Kuehnl (FA), Rosa Nguyen (PSME), Simon Pennington (Dean, FA & KA), Lisa Schulteis (BH), Ben Schwartzman (SRC), Lety Serna (CNSL), Paul Starer (Administrator Co-Chair), Mary Thomas (Library), Anand Venkataraman (PSME), Bill Ziegenhorn (BSS)

**Minutes Recorded by:** R. Nguyen

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**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:** Carolyn Brown

**Proposed Number:** GID 32A

**Proposed Units:** 4

**Proposed Hours:** 3 hours lecture, 3 hours laboratory

**Proposed Transferability:** UC/CSU

**Proposed Title:** Digital Painting I

**Proposed Catalog Description & Requisites:**

Basic instruction using computers, digital tablets and software to produce digital paintings and images for artistic expression, design and illustration.

**Proposed Discipline:** Art or Graphic Arts

(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?**

GID AA degree

GID Certificate of Achievement

GID Illustration Skills Certificate

**Are there any other departments that may be impacted from the addition of this course? Please identify those departments and the effect:** No

**Comments & Other Relevant Information for Discussion:** The division plans to cross-list this course with ART 15A.

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**Instruction Office:**

Date presented at CCC:

Number assigned:

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

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**Faculty Author:** Carolyn Brown

**Proposed Number:** GID 32B

**Proposed Units:** 4

**Proposed Hours:** 3 hours lecture, 3 hours laboratory

**Proposed Transferability:** UC/CSU

**Proposed Title:** Digital Painting II

**Proposed Catalog Description & Requisites:**

Intermediate instruction using computers, digital tablets and software to produce digital paintings and images for artistic expression, design and illustration.

**Proposed Discipline:** Art or Graphic Arts

(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?**

GID AA degree

GID Certificate of Achievement

**Are there any other departments that may be impacted from the addition of this course? Please identify those departments and the effect:** No

**Comments & Other Relevant Information for Discussion:** The division plans to cross-list this course with ART 15B.

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**Instruction Office:**

Date presented at CCC:

Number assigned:



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**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:** Megan McNamara

**Proposed Number:** SOC 45

**Proposed Units:** 4

**Proposed Hours:** 4 hours lecture

**Proposed Transferability:** CSU and UC

**Proposed Title:** Sociology of Sexuality

**Proposed Catalog Description & Requisites:**

This course provides an introduction to human sexuality through the lens of the sociological imagination. Using key theoretical concepts from the discipline, Sociology of Sexuality traces the following: the social construction of sexuality; the socio-historical transformation of ideas about sex, gender, sexual practice, and sexual representation; social movements and activism in opposition to sexual inequalities; contemporary debates about social issues such as reproductive justice and the commercialization of sex; and sexuality as mediated through major social institutions such as the legal system, the economy, politics, the family, and religion. Students will critically analyze their own and others' attitudes toward sexuality with particular attention to the formation of sexual identities and ideologies within a societal and cross-cultural context.

**Proposed Discipline:** Sociology

(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?**

Sociology ADT and Sociology AA; also a GE for Social and Behavioral Sciences. This course can also serve as a support course for the Social Justice ADT.

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

PSYC 49 (Psychology of Human Sexuality) has some potential overlap at the level of GEs only. I have discussed the possible addition of Sociology of Sexuality with both Ben Stefonik and with Kurt. Ben states that the course is normally offered once per year as a face-to-face course, and that many of the students are psych majors. In order to prevent any overlap from impacting the Psych program, I am conceiving of this course as one that would contribute directly the Sociology AA and ADT program, and as one that would *not* be offered simultaneously during the one quarter each year that it is taught through

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Psychology. It would also not be cross-listed, thus incentivizing majors from each department to take the course associated with their major.

**Comments & Other Relevant Information for Discussion:**

I have been teaching this course both face-to-face and online at West Valley college for the past four years, where it is a requirement for the Sociology major and consistently fills multiple sections per term. During the regular semester, there is typically one face-to-face section (with enrollment averaging 26-30) and an additional online section with total enrollment of 42. Summer session generally includes 2 full online sections of 42. I am confident that online sections of this course at Foothill would consistently fill to 50, ensuring a predictable high rate of productivity for the course.

It is also worth noting that West Valley offers two human sexuality classes: aside from the Sociology version, a sexuality course is also offered through the Kinesiology department. The approach between the departments is obviously distinct despite a small amount of overlap in content, and both courses fill without difficulty each semester in spite of that mild overlap. I have had a sizeable handful of students who took both classes because the topic was one of interest to them, and they found value in learning about sexuality from multiple disciplinary perspectives.

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**Instruction Office:**

Date presented at CCC:

Number assigned:



To: The Foothill College Academic Senate

CC. Advisory Council

Fr: The Advisory Council

Date: 12/10/18

Re: Textbook Costs

As part of an effort to make college more affordable for students, the State of California is incentivizing colleges to cut the cost of textbooks and course materials. President Nguyen has asked the Advisory Council to make a recommendation on how best to achieve comprehensive reductions in costs for our students. The Advisory Council is mindful that reducing the cost of education is consistent with our college/district equity goals. The Advisory Council also understands that curriculum and standards regarding student preparedness/success are a matter of faculty primacy in FHDA policy. With this in mind, and in order to best respond to President Nguyen's charge to our committee, the Advisory Council requests that the Academic Senate consult with faculty on how to reduce the cost of books and course materials. The Advisory Council asks that the Academic Senate present the faculty recommendations to the Advisory Council in February of 2019.

The following should be kept in mind as the Academic Senate discusses this issue:

- Maintaining high standards for all course materials will remain a priority.
- Academic Freedom should be respected.
- The College purchasing large numbers of textbooks is not a viable long-term solution to reducing textbook costs.
- The Advisory Council will also request feedback from students and the bookstore regarding how best to address the cost of course textbooks/materials.

The Advisory Council requests that the Academic Senate consider the following questions:

- Would faculty incentives (to develop/adopt lower cost options) be helpful in our endeavor to lower educational costs? If so, which incentives might work best?
- In order to make progress in these endeavors, would the Academic Senate support a timeline/bench marks for progress in reducing textbook/course materials costs?
- What concerns does the Academic Senate have about this initiative?

# New Subject Code Proposal

## GLST: Global Studies

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This is a proposal to create a new subject code, Global Studies (GLST), within the Business and Social Sciences division. The Global Studies courses that make up the Global Studies AA-T at Foothill College currently reside in Social Sciences (SOSC). This has large potential to create confusion for students, and could limit the efficacy of the program review process to evaluate the Global Studies program. The Global Studies program has a TOP Code of 2210.2 'in development' with the CCC Chancellor's office, but for the present we propose to use 2210.00 – International Studies: "Programs that focus on global and international issues from the perspective of the social sciences and related fields." GLST is the designation that C-ID uses for Global Studies courses.

The FSA for this subject is: Social Science

The following disciplines (state minimum qualifications) are approved to teach in GLST: Social Science

The division for GLST will be: Business & Social Sciences

### *Course Designations*

It is proposed that the following courses be changed to the GLST department:

SOSC 1 → GLST 1

SOSC 2 → GLST 2

We anticipate developing honors versions of the two above courses. In addition, it is likely that further courses will be developed under this subject code.

Approved by the BSS division curriculum committee: 11/30/18

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## 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 #:** APSC 400

**Course Title:** VDVT/FIRE LIFE SAFETY EXAM PREP

**Credit Status:**

Credit course  
 Noncredit course

**Catalog Description:**

A self-study online course designed to prepare Sound and Communication apprentices and installer/technicians for the California State Electrical Certifications in Voice Data Video Technician and Fire-Life Safety Technician. This course covers the application process, fees, references for each exam, materials provided during the exams, layout of the exams and practice questions. Subjects of the exams also include: safety, preparation, installation, termination, testing and troubleshooting, fire alarm systems, telecommunications, security/access control, sound systems and audio-visual systems.

**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.

Over 300 students have taken a similar course in the past 3 years. This non-credit course will be more accessible and less expensive for students. Faculty salaries will be paid by the Apprenticeship site.
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### 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:** Michael Sheriff **Date:** 5/8/18

**Division Curriculum Representative:** Bruce McLeod **Date:** 6/4/18

**Date of Approval by Division Curriculum Committee:** 6/4/18

**College Curriculum Co-Chairperson:** \_\_\_\_\_ **Date:** \_\_\_\_\_

# Submissions Course Outline Editor

[Return to Administration](#)

For authorized use only

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## Apprenticeship

### APSC 400 VDTV/FIRE LIFE SAFETY EXAM PREP

[Edit Course Outline](#)

APSC 400 VDTV/FIRE LIFE SAFETY EXAM PREP

Summer 2019

16 hours total per quarter.

0 Units

#### Repeatability -

**Statement:** Unlimited Repeatability.

**Criteria:** Students who repeat the course will experience an expanded and updated set of content. Content is based on several current code books and industry related documents. As such, the instructional and assessment materials undergo continuous updating. This ever-evolving course offers students an opportunity to participate in practical, up-to-date training that reflects the current content contained within the state exams for which they are preparing. Examples: A) The state of California changes one of the referenced Code Books to a newer version: All instructional and associated assessment material is carefully reviewed and updated to reflect any content or language changes associated with that new code reference. B) The state of California removes an outdated industry related reference: All instructional and associated assessment material regarding that industry reference is reviewed and removed as necessary. C) The state of California adds new reference material: The new reference material is carefully reviewed; new instructional and assessment materials directly regarding the new reference material are created and added to the course.

#### 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:**

#### Division Dean Information -

**Seat Count:** 999

**Load Factor:**

**FOAP Code:** 115000142219095220

#### 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:**

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**Need/Justification -**

This course prepares students to take the California State Voice Data Video Technician and Fire/Life Safety Exams.

**1. Description -**

A self-study online course designed to prepare Sound and Communication apprentices and installer/technicians for the California State Electrical Certifications in Voice Data Video Technician and Fire-Life Safety Technician. This course covers the application process, fees, references for each exam, materials provided during the exams, layout of the exams and practice questions. Subjects of the exams also include: safety, preparation, installation, termination, testing and troubleshooting, fire alarm systems, telecommunications, security/access control, sound systems and audio-visual systems.

Prerequisite: Student must be a Sound and Communication member in good standing of the International Brotherhood of Electrical Workers.

Co-requisite: None

Advisory: None

**2. Course Objectives -**

The student will be able to:

- A. Recognize the state exam structure
- B. Submit an application to take the state exams
- C. Identify questions by category (general knowledge, code, Ohm's Law, etc.)
- D. Navigate the NFPA 70 code book
- E. Navigate the NFPA 72 code book
- F. Complete practice exams modeled after the state exams

**3. Special Facilities and/or Equipment -**

- A. Computer with access to the internet
- 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. State exam structure
  - 1. Question and answer structure
  - 2. Exam delivery method
- B. Application process
  - 1. Eligibility
  - 2. Cost and application submission
- C. Code book navigation
  - 1. Navigation strategies for the NFPA 70
  - 2. Navigation strategies for the NFPA 72
  - 3. Code based practice questions
- D. General knowledge
  - 1. DC/AC theory review
  - 2. System specific presentations
  - 3. System specific practice questions

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



## 6. Methods of Evaluation -

- A. Results of practice tests
- B. Online discussion participation

## 7. Representative Text(s) -

Recommended:

NFPA 70 – National Electrical Code, 2014 ed. Quincy, MA: National Fire Protection Association. [www.nfpa.org/](http://www.nfpa.org/)

NFPA 70E – Standard for Electrical Safety in the Workplace, 2015 ed. Quincy, MA: National Fire Protection Association. [www.nfpa.org/](http://www.nfpa.org/)

NFPA 72 – National Fire Alarm Code, 2016 ed. Quincy, MA: National Fire Protection Association. [www.nfpa.org/](http://www.nfpa.org/)

CAL/OSHA – Pocket Guide for the Construction Industry, updated 2015. State of California Department of Industrial Relations, Cal/OSHA Consultation Service Research and Education.

[www.dir.ca.gov/dosh/dosh\\_publications/constguideonline.pdf](http://www.dir.ca.gov/dosh/dosh_publications/constguideonline.pdf)

Delmar's Standard Textbook of Electricity, 5th ed. Florence, KY: Delmar Learning, 2011. [www.cengage.com/](http://www.cengage.com/)

Illustrated Guide to the National Electrical Code, 5th ed. Florence, KY: Delmar Learning, 2011. [www.cengage.com/](http://www.cengage.com/)

Understanding NEC Requirements for Limited Energy and Communications Systems (Based on the 2014 NEC),

Leesburg, FL: Mike Holt Enterprises, Inc. [www.mikeholt.com/](http://www.mikeholt.com/)

BICSI's Information Technology Systems Installation Methods Manual, 6th ed. Tampa, FL: BICSI.

[www.bicsi.org/Default.aspx](http://www.bicsi.org/Default.aspx)

NOTE: These are the references that have been used by the state of California to create the VDV Technician and Fire-Life Safety Technician exams. Although one or more may not be within 5 years of the required published date, they are the current references used by the state of California for the exams. The listed references will be updated when the state of California updates its reference list.

## 8. Disciplines -

Telecommunication Technology

## 9. Method of Instruction -

- A. Online Lessons
- B. Group 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 -

A. Reading assignments:

1. Read pages 87-92 of CAL/OSHA – Pocket Guide for the Construction Industry (online)
2. Read the "NEC 70 Navigation Guide" handout

B. Writing assignments:

1. Answer essay questions regarding ladder safety
2. Explain the need for a navigation strategy when using the NEC 70

C. Other assignments:

1. Online assessments
2. Online discussions
3. Online practice tests

[Home Table of Contents](#)**§ 55050. Credit by Examination.**

5 CA ADC § 55050

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS

Barclays Official California Code of Regulations [Currentness](#)

Title 5. Education

Division 6. California Community Colleges

Chapter 6. Curriculum and Instruction

Subchapter 1. Programs, Courses and Classes

Article 5. Alternative Methods for Awarding Credit

5 CCR § 55050

**§ 55050. Credit by Examination.**

(a) The governing board of each community college district shall adopt and publish policies and procedures pertaining to credit by examination in accordance with the provisions of this section.

(b) The governing board may grant credit to any student who satisfactorily passes an examination approved or conducted by proper authorities of the college. Such credit may be granted only to a student who is registered at the college and in good standing and only for a course listed in the catalog of the community college.

(c) The nature and content of the examination shall be determined solely by faculty in the discipline who normally teach the course for which credit is to be granted in accordance with policies and procedures approved by the curriculum committee established pursuant to section 55002. The faculty shall determine that the examination adequately measures mastery of the course content as set forth in the outline of record. The faculty may accept an examination conducted at a location other than the community college for this purpose.

(d) A separate examination shall be conducted for each course for which credit is to be granted. Credit may be awarded for prior experience or prior learning only in terms of individually identified courses for which examinations are conducted pursuant to this section.

(e) The student's academic record shall be clearly annotated to reflect that credit was earned by examination.

(f) Grading shall be according to the regular grading system approved by the governing board pursuant to section 55023, except that students shall be offered a "pass-no pass" option if that option is ordinarily available for the course.

(g) Units for which credit is given pursuant to the provisions of this section shall not be counted in determining the 12 semester hours of credit in residence required for an associate degree.

(h) A district may charge a student a fee for administering an examination pursuant to this section, provided the fee does not exceed the enrollment fee which would be associated with enrollment in the course for which the student seeks credit by examination.

Note: Authority cited: Sections 66700 and 70901, Education Code. Reference: Sections 70901 and 70902, Education Code.

**HISTORY**

1. New article 5 (sections 55050-55052) and section filed 7-17-2007; operative 8-16-2007. Submitted to OAL for printing only pursuant to Education Code section 70901.5 (Register 2007, No. 35).

This database is current through 1/4/19 Register 2019, No. 1

5 CCR § 55050, 5 CA ADC § 55050

**END OF DOCUMENT**

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**FOOTHILL-DE ANZA**  
**Community College District**

Book	Administrative Procedures
Section	Chapter 4 - Academic Affairs (including former Article 6 - Instruction and Curriculum)
Title	Credit by Examination (Challengeable Courses) and Advanced Placement Examinations
Code	AP 4235
Status	Active
Legal	<a href="#">California Code of Regulations, Title 5, Section 55050</a> <a href="#">California Community Colleges Chancellor's Office Policy Change Memorandum 3/30/17</a> <a href="#">Education Code, Section 79500</a>
Adopted	June 14, 2013
Last Revised	December 8, 2017
Last Reviewed	December 8, 2017

Credit by Examination (challengeable courses)

1. Discipline faculty, through the college's established curricular processes and procedures, shall determine if a course is eligible for credit by examination.
2. A list of all courses eligible for credit by examination shall be maintained by the Office of Instruction and included in the College Catalog.
3. The nature and content of the examination or other cumulative assessment shall be determined solely by the faculty in the discipline that normally teach the course for which credit is to be granted. The faculty shall determine that the examination or other cumulative assessment adequately measures mastery of the course content as set forth in the course outline of record (Title 5, 55050 (c)).
4. The faculty may accept an examination or other cumulative assessment conducted at a location other than the community college for this purpose (Title 5, 55050 (c)). (For example, standardized exams regulated or prescribed by the State of California for specific occupational areas, etc.)
5. The student's academic record shall be clearly annotated to reflect that credit was earned by examination (Title 5, 55050 (e)).
6. Grading shall be according to the regular grading scale approved by the governing board (Title 5, 55023) except that a student shall be offered a pass/no pass option if that is ordinarily available for that course. (Title 5, 55050 (f)).

7. A student who earns credit by examination for a particular course shall not be allowed to subsequently earn credit by exam for any other course that normally precedes that course in a pre-requisite sequence.
8. Units earned by credit by examination shall not be counted in determining the quarter hours in residence required by the associate degree (Title 5, 55050 (g)). Units earned through credit by exam are not considered for Financial Aid, Scholarship, or Veteran Services eligibility and payments.
9. Registration and fees: Students will be registered for the course. Students who take the examination or cumulative assessment must pay a fee for service equal to the usual per unit enrollment fees for the course, but exclusive of any fee-based supplies. Fees for credit by examination are non-refundable. (Title 5, 55050 (h)).

#### Advanced Placement Examinations

The faculty shall accept Advanced Placement examinations for general education credit (Education Code, Section 79500).

[See Board Policy 4235 Credit by Examination](#)

Approved 6/14/13  
Renumbered 5/22/15 (formerly AP 6030)  
Amended 12/8/17

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 Program Proposal**

*This form should be completed by the faculty author(s) as preparation to creating a new program. 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**.*

**Faculty Author(s):**

**Program Type:**

**Credit or Noncredit:**

**Workforce (Y/N):**

**Proposed Total Units (or Hours, if Noncredit):**

**Proposed Program Title:**

**Has the proposed program been discussed with the division dean and department faculty?**

**Are there any other departments or programs that may be impacted from the creation of this program? Please identify those departments/programs and the effect:**

**Please identify any resources that will be needed for this program:**

**Comments & Other Relevant Information for Discussion:**

# General Education Review Request

## AREA III - NATURAL SCIENCES

Course Number & Title: Plumbing Technology Apprenticeship Program

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### 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 III - Natural Sciences:

Natural science courses deal with the physical universe, the testable principles that govern its operations, its life forms, and its natural, measurable phenomena. One primary purpose of these courses is to promote an awareness of the methods of scientific inquiry and the power of scientific inquiry to describe the natural world. Emphasis is on understanding and applying the scientific method, which promotes a sense of discovery, fosters critical analysis, and encourages an understanding of the relationships between science and other human activities. A General Education natural science course should exhibit the same methods and skills used by scientists when seeking an understanding of the uncertainty and complexity of the natural world.

A successful General Education Natural Science course **must** promote in students:

- N1. An understanding of the scientific method, including its attributes and limitations;
- N2. The ability to make judgments regarding the validity of scientific evidence;
- N3. An understanding of the relationship between hypothesis, experiment, fact, theory and law;
- N4. The ability to use inductive and deductive reasoning;
- N5. The practice of thinking critically, including evaluating ideas and contrasting opinions;
- N6. The ability to evaluate, use and communicate scientific data;
- N7. An introduction to current scientific theories within the field of study;
- N8. Experience with laboratory activities using laboratory techniques consistent with those employed within the discipline;
- N9. Experience applying recognized scientific methodology in laboratory activities.\*

Additional criterion thought to enhance a natural science course include any of the following:

- N10. An appreciation of the contributions of science to modern life;
- N11. An appreciation of the contributions to science of diverse people and cultures;
- N12. An understanding of the interdependence of humans and their environment;
- N13. A recognition of how human behavior has altered the environment;
- N14. A sense of the history of science and the ideas and experiments that have led to our present understanding.

Be advised that the following criteria for a GE lab is consistent with a definition provided by the National Research Council, 2005:

*“Laboratory experiences provide opportunities for students to interact directly with the material world (or with data drawn from the material world), using the tools, data collection techniques, models, and theories of science. This definition includes student interaction with astronomical databases, genome databases, databases of climatic events over long time periods, and other large data sets derived*

## General Education Review Request AREA III - NATURAL SCIENCES

*directly from the material world. It does not include student manipulation or analysis of data created by a teacher to simulate direct interaction with the material world. For example, if a physics teacher presented students with a constructed data set on the weight and required pulling force for boxes pulled across desks with different surfaces and asked them to analyze these data, the students' problem-solving activity would not constitute a laboratory experience in the committee's definition."*

\* To accomplish these goals a laboratory course **must** emphasize the methods of scientific inquiry by engaging students in:

- NL15. Observation and collection of data through direct interaction with the material world;
- NL16. Use of tools, data collection techniques, models and theories of science most prevalent in relevant research laboratories;
- NL17. Data may be from large data sets derived directly from the material world, but may not rely exclusively on student manipulation or analysis of data created by a teacher to simulate direct interaction with the material world;

- NL18. Analysis and interpretation of data;
- NL19. Formulation and testing of hypotheses;
- NL20. Communicating effectively through oral and/or written work;
- NL21. A minimum of one collaborative activity;
- NL22. A minimum of one laboratory unit or the equivalent of 33 hours of laboratory instruction per quarter.

Additional criterion thought to enhance a natural science laboratory include any of the following:

- NL23. Keep accurate and complete experimental records;
- NL24. Perform quantitative and qualitative measurements;
- NL25. Interpret experimental results and draw reasonable conclusions;
- NL26. Analyze data statistically and assess the reliability of results;
- NL27. Critically evaluate the design of an experiment;
- NL28. Design experiments to test hypotheses;
- NL29. Work effectively in small groups and teams.

### Course Number & Title: Plumbing Technology Apprenticeship Program

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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:

**N1.** An understanding of the scientific method, including its attributes and limitations;

**Matching course component(s):**

4.4, 4.6, 4.7, 4.12, 4.16, 4.24, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 7.20, 8.19, 10.14, 10.24, 11.12, 11.13, 11.26, 11.29, 12.14, 12.22, 12.23, 12.24, 13.2, 15.13, 17.14, 17.15, 17.18, 17.23, 17.25, 17.30, 17.31, 17.32, 17.64, 17.65, 17.66, 17.67, 17.73, 17.76, 21.18, 21.20, 21.62, 21.63, 26.16, 26.17, 27.3

**N2.** The ability to make judgments regarding the validity of scientific evidence;

**Matching course component(s):**

4.4, 4.6, 4.7, 4.12, 4.16, 4.24, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 7.20, 8.19, 10.14, 10.24, 11.12, 11.13, 11.26, 11.29, 12.14, 12.22, 12.23, 12.24, 13.2, 15.13, 17.14, 17.15, 17.18, 17.23, 17.25, 17.30, 17.31, 17.32, 17.64, 17.65, 17.66, 17.67, 17.73, 17.76, 21.18, 21.20, 21.62, 21.63, 26.16, 26.17, 27.3

**N3.** An understanding of the relationship between hypothesis, experiment, fact, theory and law;

**Matching course component(s):**

4.4, 5.9, 7.20, 8.1, 8.2, 8.3, 8.11, 8.14, 10.14, 10.21, 10.23, 11.23, 11.27, 11.28, 11.30, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.13, 17.44, 17.52, 17.53, 17.54, 17.59, 17.60, 17.76, 21.5, 21.6, 21.7, 21.8, 22.82, 22.83, 23.8, 26.1, 26.4, 26.5, 26.6, 26.7, 26.8, 26.9, 26.12, 26.16, 26.17

**N4.** The ability to use inductive and deductive reasoning;

**Matching course component(s):**

3.3, 3.6, 6.2, 6.3, 6.4, 6.5, 6.6, 6.8, 6.11, 6.12, 6.14, 6.15, 6.17, 6.19, 7.20, 10.23, 11.2, 12.14, 17.44, 19.2, 19.3, 19.6, 19.19, 19.25, 19.43, 19.44, 19.45, 19.46, 19.54, 19.60, 21.3, 26.16

**N5.** The practice of thinking critically, including evaluating ideas and contrasting opinions;

**General Education Review Request  
AREA III - NATURAL SCIENCES**

**Matching course component(s):**

2.22, 3.4, 3.5, 3.7, 3.9, 4.4, 4.12, 5.9, 5.12, 5.13, 5.14, 5.15, 5.16, 6.14, 6.16, 6.17, 6.19, 7.20, 8.14, 8.19, 9.9, 9.12, 9.14, 9.31, 12.7, 12.9, 12.14, 13.2, 15.13, 16.4, 17.14, 17.15, 17.17, 17.30, 17.44, 17.65, 17.66, 17.67, 17.74, 17.75, 17.76, 19.22, 19.24, 19.25, 19.32, 19.33, 19.34, 19.35, 19.36, 19.37, 19.38, 19.39, 19.40, 19.41, 19.42, 19.47, 19.48, 19.49, 19.50, 19.51, 19.52, 19.53, 19.54, 19.56, 19.57, 19.58, 19.59, 19.60, 21.7, 21.21, 21.23, 21.30, 22.87, 26.4, 26.16, 26.17

**N6.** The ability to evaluate, use and communicate scientific data;

**Matching course component(s):**

3.4, 3.5, 6.16, 6.17, 6.19, 7.17, 12.14, 13.2, 15.13, 17.63, 17.64, 17.76, 19.32, 19.33, 19.34, 19.35, 19.36, 19.41, 19.47, 19.48, 19.49, 19.50, 19.51, 19.52, 19.53, 19.56, 19.57, 19.58, 19.60, 19.62, 21.7, 21.23, 22.83, 22.87, 22.88, 26.4

**N7.** An introduction to current scientific theories within the field of study;

**Matching course component(s):**

Module 7, 12.9, 12.15, Module 15

**N8.** Experience with laboratory activities using laboratory techniques consistent with those employed within the discipline;

**Matching course component(s):**

3.7, 3.9, 4.4, 4.6, 4.7, 4.12, 4.16, 4.17, 4.24, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 7.17, 7.20, 8.14, 8.19, 9.12, 10.14, 10.24, 11.12, 11.13, 15.13, 17.14, 17.15, 17.17, 17.18, 17.23, 17.25, 17.30, 17.31, 17.32, 17.44, 17.49, 17.54, 17.60, 17.63, 17.64, 17.65, 17.66, 17.67, 17.73, 17.74, 17.75, 17.76, 21.23, 21.22, 21.26, 21.30, 21.31, 21.32, 21.33, 21.41, 21.45, 21.49, 21.52, 21.55, 21.59, 21.63, 22.87, 24.20, 24.21, 26.4, 26.5, 26.6, 26.7, 26.8, 26.9, 26.16, 26.17, 27.3

**N9.** Experience applying recognized scientific methodology in laboratory activities.

**Matching course component(s):**

3.7, 3.9, 4.4, 4.6, 4.7, 4.12, 4.16, 4.17, 4.24, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 7.17, 7.20, 8.14, 8.19, 9.12, 10.14, 10.24, 11.12, 11.13, 15.13, 17.14, 17.15, 17.17, 17.18, 17.23, 17.25, 17.30, 17.31, 17.32, 17.44, 17.49, 17.54, 17.60, 17.63, 17.64, 17.65, 17.66, 17.67, 17.73, 17.74, 17.75, 17.76, 21.23, 21.22, 21.26, 21.30, 21.31, 21.32, 21.33, 21.41, 21.45, 21.49, 21.52, 21.55, 21.59, 21.63, 22.87, 24.20, 24.21, 26.4, 26.5, 26.6, 26.7, 26.8, 26.9, 26.16, 26.17, 27.3

**Depth Map: Additionally, include any of the following:**

**N10.** An appreciation of the contributions of science to modern life;

**Matching course component(s):**

**N11.** An appreciation of the contributions to science of diverse people and cultures;

**Matching course component(s):**

**N12.** An understanding of the interdependence of humans and their environment;

**Matching course component(s):**

2.12, 2.15, 2.17, 2.20, 2.21, 9.1, 9.4, 9.6, 9.8, 9.10, 9.13, 11.21, 14.1, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.8, 16.10, 16.11, 16.12, 17.11, 20.1, 20.3, 20.4, 23.13, 23.17

**N13.** A recognition of how human behavior has altered the environment;

**Matching course component(s):**

2.12, 2.15, 2.17, 2.20, 2.21, 9.1, 9.4, 9.6, 9.8, 9.10, 9.13, 11.21, 14.1, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.8, 16.10, 16.11, 16.12, 23.13, 23.14



## General Education Review Request AREA III - NATURAL SCIENCES

**N14.** A sense of the history of science and the ideas and experiments that have led to our present understanding.

**Matching course component(s):**

**Depth Map: Additionally, must emphasize the following:**

**N15.** Observation and collection of data through direct interaction with the material world;

**Matching course component(s):**

5.11, 5.16, 7.17, 7.20, 10.14, 12.7, 15.13, 17.63, 17.64, 17.67, 17.76, 19.53, 19.56, 19.60, 19.62, 21.32, 21.62, 21.63, 24.2, 26.5, 26.6, 26.7, 26.8, 26.9, 26.17, 27.3

**N16.** Use of tools, data collection techniques, models and theories of science most prevalent in relevant research laboratories;

**Matching course component(s):**

5.11, 5.16, 7.17, 7.20, 10.14, 12.7, 15.13, 17.63, 17.64, 17.67, 17.76, 19.53, 19.56, 19.60, 19.62, 21.32, 21.62, 21.63, 24.2, 26.5, 26.6, 26.7, 26.8, 26.9, 26.17, 27.3

**N17.** Data may be from large data sets derived directly from the material world, but may not rely exclusively on student manipulation or analysis of data created by a teacher to simulate direct interaction with the material world;

**Matching course component(s):**

3.9, 5.14, 5.16, 7.17, 7.20, 9.12, 9.31, 10.14, 17.7, 17.14, 17.15, 17.18, 17.23, 17.25, 17.31, 17.32, 17.49, 17.54, 17.63, 17.64, 17.67, 17.73, 17.76, 21.32, 22.83, 22.85, 22.87

**N18.** Analysis and interpretation of data;

**Matching course component(s):**

3.4, 3.5, 3.6, 6.19, 7.17, 7.20, 12.5, 12.6, 12.7, 12.8, 12.9, 12.10, 12.14, 13.2, 15.13, 17.67, 17.76, 19.5, 19.6, 19.7, 19.8, 19.16, 19.19, 19.58, 19.59, 20.11, 21.14, 21.24, 21.32, 24.2

**N19.** Formulation and testing of hypotheses;

**Matching course component(s):**

4.4, 4.6, 4.7, 4.12, 4.16, 4.24, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 7.20, 8.19, 10.14, 10.24, 11.12, 11.13, 11.26, 11.29, 12.14, 12.22, 12.23, 12.24, 13.2, 15.13, 17.14, 17.15, 17.18, 17.23, 17.25, 17.30, 17.31, 17.32, 17.64, 17.65, 17.66, 17.67, 17.73, 17.76, 21.18, 21.20, 21.62, 21.63, 26.16, 26.17, 27.3

**N20.** Communicating effectively through oral and/or written work;

**Matching course component(s):**

3.5, 4.1, 4.10, 4.14, 4.20, 4.21, 4.22, 4.23, 5.1, 5.4, 5.5, 5.6, 5.7, 5.8, 7.1, 7.4, 7.8, 7.12, 7.14, 7.15, 7.16, 7.18, 7.19, 8.3, 8.8, 8.9, 8.10, 8.12, 8.15, 9.1, 9.5, 9.7, 9.8, 9.17, 9.18, 9.25, 9.26, 9.27, 9.28, 9.29, 9.30, 9.32, 9.33, 9.34, 9.35, 9.36, 10.1, 10.2, 10.3, 10.4, 10.7, 10.8, 10.9, 10.10, 10.13, 10.15, 10.16, 10.19, 10.20, 11.1, 11.4, 11.8, 11.9, 11.10, 11.11, 11.14, 11.19, 12.5, 12.8, 12.11, 12.12, 12.13, 12.16, 12.17, 12.18, 13.5, 13.9, 14.2, 14.3, 14.4, 14.5, 14.6, 14.8, 14.9, 14.11, 14.12, 14.13, 15.1, 15.4, 15.5, 15.7, 15.12, 16.2, 16.5-16.17, 16.20, 16.22, 16.23, 16.24, 16.25, 16.26, 16.28, 16.30, 17.2, 17.3, 17.5, 17.6, 17.8, 17.10, 17.11, 17.13, 17.21, 17.26, 17.27, 17.29, 17.33-17.41, 17.43, 17.45-17.48, 19.1, 19.26, 20.1-20.6, 20.8, 20.9, 21.1, 21.4, 21.5, 22.1, 22.3-22.6, 22.10, 22.14, 22.17, 22.18, 22.21, 22.23, 22.26, 22.30, 22.32, 22.35, 22.36, 22.37, 22.39, 22.41, 22.42, 22.47, 22.48, 22.53, 22.59, 22.61, 22.63, 22.66, 22.67, 22.69, 22.72, 22.75, 22.77, 22.78, 22.81, 22.82, 22.89, 22.91, 22.92, 22.94, 23.3, 23.4, 23.5, 23.6, 23.8-23.18, 24.2, 24.4, 24.5, 24.7, 24.10-24.12, 24.18, 25.1, 25.3, 25.7, 26.1, 26.3, 26.10, 26.13, 26.15, 27.1, 27.2, 28.2

**General Education Review Request  
AREA III - NATURAL SCIENCES**

**N21.** A minimum of one collaborative activity;

**Matching course component(s):**

24.2, 27.3

**N22.** A minimum of one laboratory unit or the equivalent of 33 hours of laboratory instruction per quarter.

**Matching course component(s):**

Y1S1: M1: 0/9, M2:0/23, M3: 0/9, M4: 3/24, M5: 10/81	Total=13.33hrs,
Y1S2: M6: 0/19, M7: 2/20, M8: 2/19, M9: 3/31	Total=8.494hrs
Y2S1: M10: 2/24, M11: 4/34, M12: 3/24	Total=11.85hrs,
Y2S2: M13: 0/12, M14: 0/13, M15: 1/13, M16: 0/16	Total=2hrs,
Y3S1: M17: 19/76, M18: 0/35	Total=18.486hrs,
Y3S2: M19: 0/62	Total=0hrs,
Y4S1: M20: 0/11, M21: 26/63	Total=37.94hrs,
Y4S2: M22: 1/94	Total=1.159hrs,
Y5S1: M23: 0/19, M24: 1/20	Total=2.769hrs,
Y5S2: M25: 0/7, M26: 8/17, M27: 1/3, M28: 0/16, M29: 0/0	Total=22.605hrs,

**Total Approximate Lab Hours = 118.592**

**Depth Map: Additionally, include any of the following:**

**N23.** Keep accurate and complete experimental records;

**Matching course component(s):**

19.62

**N24.** Perform quantitative and qualitative measurements;

**Matching course component(s):**

3.4, 7.17, 21.32

**N25.** Interpret experimental results and draw reasonable conclusions;

**Matching course component(s):**

21.32, 24.2

**N26.** Analyze data statistically and assess the reliability of results;

**Matching course component(s):**

**N27.** Critically evaluate the design of an experiment;

**Matching course component(s):**

4.24, 5.9, 9.41, 9.42, 11.29, 12.14, 12.20, 12.22, 12.23, 12.24, 22.83, 22.87

**N28.** Design experiments to test hypotheses;

**Matching course component(s):**

4.24, 5.9, 9.41, 9.42, 11.29, 12.14, 12.20, 12.22, 12.23, 12.24, 22.83, 22.87

**N29.** Work effectively in small groups and teams.

**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):**

All Modules

**General Education Review Request  
AREA III - NATURAL SCIENCES**

**B2.** Computation (application of mathematical concepts, and/or using principles of data collection and analysis to solve problems).

**Matching course component(s):**

Y1S2M6, Y1S2M7, Y2S2M19 (Year N, Semester J, Module K)

**B3.** Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

**Matching course component(s):**

3.5, 4.1, 4.10, 4.14, 4.20, 4.21, 4.22, 4.23, 5.1, 5.4, 5.5, 5.6, 5.7, 5.8, 7.1, 7.4, 7.8, 7.12, 7.14, 7.15, 7.16, 7.18, 7.19, 8.3, 8.8, 8.9, 8.10, 8.12, 8.15, 9.1, 9.5, 9.7, 9.8, 9.17, 9.18, 9.25, 9.26, 9.27, 9.28, 9.29, 9.30, 9.32, 9.33, 9.34, 9.35, 9.36, 10.1, 10.2, 10.3, 10.4, 10.7, 10.8, 10.9, 10.10, 10.13, 10.15, 10.16, 10.19, 10.20, 11.1, 11.4, 11.8, 11.9, 11.10, 11.11, 11.14, 11.19, 12.5, 12.8, 12.11, 12.12, 12.13, 12.16, 12.17, 12.18, 13.5, 13.9, 14.2, 14.3, 14.4, 14.5, 14.6, 14.8, 14.9, 14.11, 14.12, 14.13, 15.1, 15.4, 15.5, 15.7, 15.12, 16.2, 16.5-16.17, 16.20, 16.22, 16.23, 16.24, 16.25, 16.26, 16.28, 16.30, 17.2, 17.3, 17.5, 17.6, 17.8, 17.10, 17.11, 17.13, 17.21, 17.26, 17.27, 17.29, 17.33-17.41, 17.43, 17.45-17.48, 19.1, 19.26, 20.1-20.6, 20.8, 20.9, 21.1, 21.4, 21.5, 22.1, 22.3-22.6, 22.10, 22.14, 22.17, 22.18, 22.21, 22.23, 22.26, 22.30, 22.32, 22.35, 22.36, 22.37, 22.39, 22.41, 22.42, 22.47, 22.48, 22.53, 22.59, 22.61, 22.63, 22.66, 22.67, 22.69, 22.72, 22.75, 22.77, 22.78, 22.81, 22.82, 22.89, 22.91, 22.92, 22.94, 23.3, 23.4, 23.5, 23.6, 23.8-23.18, 24.2, 24.4, 24.5, 24.7, 24.10-24.12, 24.18, 25.1, 25.3, 25.7, 26.1, 26.3, 26.10, 26.13, 26.15, 27.1, 27.2, 28.2

**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):**

2.12, 2.15, 2.17, 2.20, 2.21, 9.1, 9.4, 9.6, 9.8, 9.10, 9.13, 11.21, 14.1, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.8, 16.10, 16.11, 16.12, 17.11, 20.1, 20.3, 20.4, 23.13, 23.17

**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):**

Y2S1M12, Y4S2M22 (Year N, Semester J, Module K)

Requesting Faculty: Mark Likeness, Zach Cembellin, Hilary Gomes, Kristin Tripp Caldwell, Lisa Drake, Patricia Gibbs, Paul Glanting, Stephanie Chan Date: 12/4/18

Division Curriculum Rep: Rosa Nguyen Date: 12/4/18

**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: \_\_\_\_\_



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 1, Semester 2 – P 102

### Course Title:

- Module 6: Related Math (12 hours)
- Module 7: Related Science (27 hours)
- Module 8: Fuel Gas Installations (30 hours)
- Module 9: Drainage (39 hours)

108 hours (Lecture/Lab)

#### Class Information

Day(s) – TBD  
Time – TBD  
Room – TBD

Day(s) – TBD  
Time – TBD  
Room – TBD

#### Instructor Information

Name – TBD  
Phone – TBD  
Email – TBD

Name – TBD  
PH: (408) 453-6330  
Email – TBD

#### Resources

1. United Association, “Related Mathematics,” 2002.
2. Videos from “The UA Related Science Course” CD.
3. International Pipe Trades Joint Training Committee, Inc., “Related Science”, 2004.
4. United Association 2000 UPC Plumbing Code, “Gas Installations Manual”, 2001
5. Phillips Driscopipe, “Heat Fusion Qualification Guide 6500”, 1997.
6. Performance Pipe, “Heat Fusion Procedures and Qualification Guide”, 2004.
7. Performance Pipe, “Heat Fusion (Video)”, 2004.
8. International Pipe Trades Joint Training Committee, Inc, “Drainage Assignments”, Sewage Disposal; 1999.
9. Chevron Chemical Company, “Qualification Procedures for Making Heat Fusion Joints”, 1997.
10. American Technical Publishers, “Plumbing Design and Installation”, 2006.
11. International Pipe Trades Joint Training Committee, Inc, “Drainage Workbook”, 1999.
12. American Technical Publishers, “Plumbing Design and Installation Workbook”, Third Edition, Plumbing Traps, 2006.
13. International Association of Plumbing and Mechanical Officials, “Uniform Plumbing Code Study Guide”, 2000 Edition.
14. International Pipe Trades Joint Training Committee, Inc, “Drainage”, 2001.
15. International Association of Plumbing and Mechanical Officials, “Uniform Plumbing Code”, 2000 Edition, 1999.

**Syllabus – Year 1, Semester 2 – P 102**

**Course Title:**

**Course Performance & Learning Objectives – Module 6 - Related Math**

1. Review purpose and functions of fractions.
2. Add fractions.
3. Subtract fractions.
4. Practice adding and subtracting fractions.
5. Multiply fractions.
6. Divide fractions.
7. Practice multiplying and dividing fractions.
8. Perform math operations with decimals.
9. Perform math operations with percentages.
10. Practice working with decimals and percentages.
11. Add and subtract compound units.
12. Convert decimals dimensions to feet and inches.
13. Review triangle basics.
14. Apply Pythagorean Theorem.
15. Use 3-4-5 triangles.
16. Apply triangles to piping applications.
17. Calculate pipe fitting allowances in pipe measurements
18. Define grade as applied to piping problems.
19. Apply grade formulas to piping problems.

**Course Performance & Learning Objectives – Module 7 - Related Science**

1. Describe properties, peculiarities, and characteristics of water.
2. Define states of matter and units of measurement.
3. Interpret the Periodic Table.
4. Describe the expansion of water.
5. Define temperature changes in substances (specific, sensible and latent heat).
6. Describe vaporization and evaporation.
7. Define characteristics and properties of steam.
8. Describe principles of hydraulics and pneumatics.
9. Define work.
10. Define basic classifications of simple machines.
11. Define prime movers.
12. Describe characteristics of common metals.
13. Differentiate between metals, alloys and synthetics.
14. Describe methods of joining synthetic materials.
15. Describe methods of controlling expansion and contraction issues.
16. Describe properties and methods to control expansion of metals.
17. Measure high temperatures.

**Syllabus – Year 1, Semester 2 – P 102**

**Course Title:**

**Course Performance & Learning Objectives – Module 7 - Related Science, (continued)**

18. Describe properties of solids which depend on cohesive force.
19. Describe hazards and type of corrosion.
20. Anticipate, diagnose and deal with corrosion problems including:
  - a. Galvanic cell problems.
  - b. Underground piping problems.
  - c. Corrosion resistant situations.
  - d. Cathodic protection.
  - e. Corrosion inhibitors.
  - f. Coatings.

**Course Performance & Learning Objectives – Module 8 - Fuel Gas Installations**

1. Identify the characteristics of fuel gas.
2. Define combustion of fuel gases.
3. Describe types of air needed for combustion.
4. Identify basic styles of burners.
5. Define and identify terms in gas piping installations.
6. Identify approved gas piping materials.
7. Identify approved fittings and appurtenances.
8. Describe approved joining methods.
9. Describe approved installation methods.
10. Describe underground PE piping methods.
11. Identify testing methods and requirements.
12. Describe process required for sizing fuel gas piping.
13. Calculate fuel gas pipe sizes.
14. Construct fuel gas piping system.
15. Discuss appliance installation and venting.
16. Explain the evolution of polyethylene piping.
17. Understand and apply related codes.
18. Recognize various fittings and specialty tools.
19. Join polyethylene pipe.

**Course Performance & Learning Objectives – Module 9 - Drainage**

1. Describe public health benefits and parameters of sewage disposal.
2. List principles of sewage treatment.
3. List requirements for private sewage disposal systems.
4. Discuss on-site sewage disposal.
5. Describe use of sand filters.
6. Examine alternatives for septic tanks.
7. Explain use of commercial package disposal units.

**Syllabus – Year 1, Semester 2 – P 102**

**Course Title:**

**Course Performance & Learning Objectives – Module 9 – Drainage (continued)**

8. Discuss wastewater treatment plants.
9. Use appropriate terminology for sewer and drain piping.
10. Explain function of sewers and drains.
11. Explain basic system principles.
12. Install sewers.
13. Review sewage treatment processes.
14. Install sewers.
15. Identify components of building drainage systems.
16. Explain hydraulic operation of building drainage systems.
17. Describe different types of building drainage systems.
18. Describe types of major appurtenances used in building drainage systems.
19. Identify components and installation requirements for roof drains.
20. Identify components and installation requirements for planter drains.
21. Identify components and installation requirements for ornamental fountain drains.
22. Identify components and installation requirements for floor drains.
23. Identify components and installation requirements for cleanouts in building drainage systems.
24. Identify components and installation requirements for cleanouts in drainage systems.
25. Describe components of gray water systems.
26. Describe use of plumbing traps.
27. Describe use of P-traps.
28. Discuss prohibited traps.
29. Discuss trap seals.
30. Explain causes of trap seal loss.
31. Install different types of traps.
32. Explain principles of drainage system venting.
33. Describe various venting methods.
34. Discuss alternate venting methods.
35. Describe other types of venting methods.
36. Describe effects of hydraulic gradient.
37. Define length restrictions.
38. List installation requirements.
39. Demonstrate proper vent sizing.
40. Demonstrate proficiency in sizing of sanitary drainage and vent piping systems in different types of structures.
41. Sketch sanitary drainage and vent piping systems.
42. Design sanitary drainage and vent piping systems.

**Syllabus – Year 1, Semester 2 – P 102**  
**Course Title: Applied and Related Theory**

**Course Policies**

1. Both your attendance and participation in class discussions are appreciated, expected and required. Attendance will be taken daily. (For specific guidelines, see the Apprentice Handbook, pg. 23)
2. The class process will include: a) short PowerPoint lectures b) class & group discussions c) writing exercises d) short quizzes e) reading assignments f) videos g) end-of-session and end-of-module assessment.
3. Grading – Please refer to Apprentice Handbook, pg. 20.
4. Instructor's Policies:

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**FELLOW APPRENTICES**

<b>Name</b>	<b>Telephone Number</b>	<b>Email Address</b>