

**College Curriculum Committee Meeting Agenda**  
**Tuesday, February 5, 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: January 22, 2019	Action	#2/5/19-1	Armerding
2. Report Out from Division Reps	Discussion		All
3. Announcements a. New Course Proposals b. Notification of Proposed Requisites c. Venue Change for 3/19/19 CCC Meeting d. ADT Update e. Curriculum Sheets for 2019-20— clarification	Information	#2/5/19-2—6 #2/5/19-7  #2/5/19-8	Armerding  Day Vanatta
4. Consent Calendar a. GE Applications	Action	#2/5/19-9—12	Armerding
5. Stand Alone Approval Request: APSC 400	2nd Read/ Action	#2/5/19-13	Armerding
6. Stand Alone Approval Request: PHDA 401	1st Read	#2/5/19-14	Armerding
7. Courses not Taught in Four Years	Discussion	#2/5/19-15	Armerding
8. New English Proficiency Statement	Information	#2/5/19-16	Armerding
9. Credit by Exam Policy	Discussion	#2/5/19-17—18	Armerding
10. Auto-awarding Degrees/Certificates	Discussion		Armerding
11. Program Creation Process Revision	Discussion		Armerding
12. Good of the Order			Armerding
13. Adjournment			Armerding

**Consent Calendar:**

Foothill General Education (attachments #2/5/19-9—12)

*Area I—Humanities:* ENGL 38

*Area III—Natural Sciences:* Plumbing Technology Apprenticeship Program

**Attachments:**

- #2/5/19-1 Draft Minutes: January 22, 2019
- #2/5/19-2 New Course Proposal: JRYM 105
- #2/5/19-3 New Course Proposal: JRYM 106
- #2/5/19-4 New Course Proposal: NCEN 401
- #2/5/19-5 New Course Proposal: NCEN 442A
- #2/5/19-6 New Course Proposal: NCEN 442B
- #2/5/19-7 CCC Notification of Proposed Requisites
- #2/5/19-8 Associate Degree for Transfer (ADT) Progress Report as of 1-29-2019
- #2/5/19-13 Stand Alone Course Approval Request: APSC 400
- #2/5/19-14 Stand Alone Course Approval Request: PHDA 401
- #2/5/19-15 Courses not Taught in Four Years
- #2/5/19-16 Update to English Proficiency Statement
- #2/5/19-17 California Code of Regulations §55050 Credit by Examination (Title 5)
- #2/5/19-18 FHDA Administrative Procedure (AP) 4235

## **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>	<del>1/22/19</del>	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: 2/5/19Co-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 checked="" 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, Mark Likeness, Brian Murphy, Katie Galvin,  
Mimi Overton, Brian Roberts, Ben Schwartzman



<p>c. Deadline for 2019-20 Curriculum Sheets</p>	<p>item #9, regarding auto-awarding—not necessarily. Group agreed would like to see list—CCC Team will request from IR.</p> <p>Vanatta emailed reps in early December that the deadline for curriculum sheets has been extended, from Feb. 1st to March 1st. Decision based on the increasing quality of submissions, over the past few years, as well as last year’s high rate of on-time submissions, so please keep up the good work!</p>
<p>d. Certificates of Achievement—Local Designation</p>	<p>CCCCO has three designations: Transfer, Workforce (CTE), and Local. Day noted that the PCAH includes guidelines on what constitutes a Local certificate. Recent example is Humanities CA, which is in partnership with USF—we had to provide supporting documentation to the state. Noted that only CSU-GE &amp; IGETC CAs may be designated as Transfer. Day followed-up with CCCCCO for clarification regarding Local designation (waiting on response), as well as with PCAH authors. PCAH authors stated that intent is for programs that have agreements with local universities and/or employers.</p>
<p>e. Advisory Council Textbook Memo</p>	<p>Academic Senate has asked CCC to discuss memo from Advisory Council, regarding further lowering textbook costs for students. Armerding suggested possibility of encouraging faculty to always include a low/no-cost textbook on a COR—could add language to COR form to remind faculty. Fine Arts rep asked if Foothill keeps data regarding textbook costs—Starer stated no, but we are required to designate, on the class schedule, which courses use low/no-cost textbooks. District set \$50 as low-cost threshold. BSS rep suggested working with Bookstore. Other BSS rep noted wide variety of needs/opportunities in depts. across campus, and even within each dept.—doesn’t believe a blanket policy could be established which would work for all depts. Suggested more professional development for faculty. Noted idea of putting textbooks on reserve in the library, for students to check out for the entire quarter. Bio Health rep suggested making sure it’s clear to students, when appropriate, that an older edition of suggested text is OK to use. PSME rep noted “five year rule” on CORs for textbooks—is it OK to allow students to use an older version? Day stated this varies by discipline; state reviewers do pay attention to textbooks listed. Armerding asked if group interested in drafting language to add to COR form for faculty, and/or to add as a guideline on COR checklist—most of group said yes. Will discuss further at a future meeting. PSME rep noted most faculty unsure of actual cost of textbooks they list on COR—suggested adding a box to New Course Proposal form for faculty to list approximate cost of textbook(s). Counseling rep noted that students have dropped a course because the textbook is too expensive for them, or try to get through a course without having to buy the book.</p>
<p>f. COOL Committee</p>	<p>The COOL Committee (Committee on Online Learning) has been relaunched. Will provide assistance for any faculty interested in teaching hybrid/online course.</p>
<p>g. Course Leaf Update</p>	<p>Starer presented topic. Welcome call with Leepfrog is tomorrow. Noted caveat that district still finalizing contract, but we’re proceeding as though it will go through.</p>
<p>h. Film, Television, and Electronic Media ADT Approval</p>	<p>The CCCCCO has approved the Film, Television, and Electronic Media ADT!</p>

<p>4. New Subject Code: GLST</p>	<p><b>Speaker: Ben Armerding</b>                  Kathryn Maurer from Anthropology present for discussion. BSS has approved the creation of a new subject code of GLST (Global Studies). This code will go into effect for the 2019-20 catalog. SOSC 1 &amp; 2 are the two foundation courses for Global Studies ADT; will move to GLST. Hueg asked if discipline will change—will remain Social Science. TOP Code will be 2210.00 - International Studies. PSME rep asked if other SOSC courses will move—no. Maurer noted faculty have been discussing creation of GLST for some time. Fine Arts rep asked about process to create new FSA—Starer noted past experience is must be approved by Academic Senate, Academic &amp; Professional Matters (APM), De Anza’s academic dept. and Senate, and Faculty Association. Must be buy-in district-wide, as FSAs are district-wide.</p>
<p>5. Stand Alone Approval Request: APSC 400</p>	<p><b>Speaker: Ben Armerding</b>                  First read of Stand Alone Approval Request for APSC 400. Will be permanently Stand Alone. No comments.</p> <p>Second read and possible action will occur at next meeting.</p>
<p>6. Credit by Exam Policy</p>	<p><b>Speaker: Ben Armerding</b>                  CCC has discussed this topic in previous years, but questions remained regarding whether the student would register for the class, and how faculty would be paid if they do not. De Anza’s policy requires the student to register for the class and take exam during the first two weeks. Armerding suggested Foothill consider using same policy as De Anza. Need to determine if Credit by Exam (CBE) will be offered during summer quarter. BSS rep asked which types of courses CBE would apply to—any faculty/dept. across campus might find it appropriate. Counseling rep noted potential issues with transferability, e.g., if a student uses CBE for MATH 1B but then needs MATH 1A for transfer to a particular university. PSME rep asked if student using CBE (during first two weeks) would then drop the class—no, they remain registered and receive credit (if they pass exam). Counseling rep noted Title 5 language mentions exam must be cumulative and a different exam for each student. PSME rep asked for rationale—Armerding unsure. Language Arts rep asked if students using CBE count toward productivity number—yes, because they remain registered, even though not attending class.</p> <p>Starer noted that topic of credit for prior learning, in general, will become increasingly prescient for community colleges, in the coming years. CBE is a small section of that discussion, but worthwhile as more students seek credit for their learning in non-traditional environments. Day noted our robust AP and CLEP policies. Noted a CBE notation will be included on the student’s transcript; suggested professional development for faculty regarding CBE. Noted colleges offering CBE required to develop process and include language in catalog; suggested we set a deadline for CCC to approve process and language. Armerding asked reps to share topic with constituents, including current De Anza and Foothill policies, and bring feedback to next meeting. PSME rep asked if any universities care if CBE used by a student—Day noted that some universities/majors would take issue; e.g., if the use of CBE contradicts the SLOs for the course. BSS rep noted some depts. already offer alternatives for students to receive credit (e.g., AP), so should they need to also offer CBE? Armerding stated no faculty will be required to offer CBE.</p>

<p>7. Program Creation Process Revision</p>	<p><b>Speaker: Ben Armerding</b>  Updated version of draft New Program Proposal form—added question of whether or not program is Workforce. Bio Health rep noted discussion at previous meeting regarding adding question regarding the purpose of program—group agreed, and Vanatta will add to next version. Armerding meeting with Advisory Council study group this Thursday regarding creation of process, and will report back. CCC will resume discussion once discussions with other groups take place.</p>
<p>8. Apprenticeship GE Mapping—Approval</p>	<p><b>Speaker: Paul Starer</b>  First completed GE application for Apprenticeship GE mapping is ready for CCC to review. Before being presented for approval, wanted to share application with group, as the information listed looks different than usual. Instead of language from a single COR, includes numerical references in response to each question, which point to portions of syllabi used for multiple modules taught throughout the span of the program. Also shared example syllabus for one module. Wanted to ensure group has opportunity to share any concerns or ask questions about the application. BSS rep asked for example of how to map a numerical reference to the example syllabus—there is a key, which Starer did not bring, but will provide to group when application is reviewed. Counseling rep asked for clarification, in that if a student completes the program they will then satisfy the GE area—yes, no need for them to take any additional course(s) outside of their apprenticeship program. Starer noted list of faculty serving on committee to map curriculum for all GE areas, from disciplines associated with our GE areas. Day noted process differs from our typical use of GE subcommittees, and asked if faculty being compensated for this work—Starer said that they are being compensated.</p>
<p>9. Auto-awarding Degrees/Certificates</p>	<p><b>Speaker: Ben Armerding</b>  Kevin Harral, Director of Financial Aid, present for discussion. New funding formula provides additional funding to college when a student completes a program; discussion regarding auto-awarding of degrees/certificates occurred at previous meeting, and some voiced concerns. Harral noted that, additionally, college will receive funding bonus tied to number of students who receive Financial Aid. Related to concern regarding auto-awarding affecting interest kicking in on student loans, it's actually the student's "attempted units" that matter, regardless of whether or not they receive a degree/certificate. Whenever a student receives a loan, we must provide to the government details regarding their selected program—whether or not they receive a degree/certificate, their subsidy is the same (e.g., AA degree = subsidy of 3 years). Armerding asked how veterans could be affected—Harral unsure exactly what the VA looks at, but for Financial Aid it's related to units, as with any non-veteran student. Armerding will follow-up with campus VA office. Discussion will continue at future meetings, to move forward on possibly creating process/policy for auto-awarding. Language Arts rep suggested group review data on how many degrees/certificates have been completed but not awarded (e.g., the student did not realize they had completed)—Armerding unsure if IR will be able to provide such data, but will ask. Counseling rep noted many students likely close to completing degree but do not because many don't complete US Cultures &amp; Communities and/or Lifelong Learning GE areas. Day noted that A&amp;R, last year, tested automatically awarding corresponding certificate of achievement when a student received a degree—resulted in a 50% increase in awards.</p>

*Draft Minutes, January 22, 2019*

10. Good of the Order	
11. Adjournment	<b>3:28 PM</b>

**Attendees:** Ben Armerding (Faculty Co-Chair), Zachary Cembellin (PSME), Stephanie Chan (LA), Bernie Day (Articulation Officer), Valerie Fong (Acting Dean, LA), Marnie Francisco (PSME), Evan Gilstrap (CNSL), Kevin Harral (guest—Financial Aid), Allison Herman (LA), Kurt Hueg (Dean, BSS), Eric Kuehnl (FA), Kathryn Maurer (guest—BSS), Rosa Nguyen (PSME), Ron Painter (guest—PSME), Katy Ripp (KA), Lisa Schultheis (BH), Ben Schwartzman (SRC), Lety Serna (CNSL), Paul Starer (Administrator Co-Chair), Mary Thomas (LIBR), Nick Tuttle (BSS), Mary Vanatta (Curriculum Coordinator), Anand Venkataraman (PSME), Bill Ziegenhorn (BSS)

**Minutes Recorded by:** M. Vanatta



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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:** Erica Paul

**Proposed Number:** JRYM 105

**Proposed Units:** 2.5

**Proposed Hours:** 54

**Proposed Transferability:** None

**Proposed Title:** Project Management for Commercial Construction Level 1

**Proposed Catalog Description & Requisites:**

In this course students will learn the roles and responsibilities of a Project Manager on a commercial construction project. The Pre-Construction, Construction, and Closeout phases of a project will be covered. An overview of project specific responsibilities will be taught and applied in a learning community environment. Students will learn how to begin a project at the bid level, estimate, run the project, and manage it to completion. The class will consist of interactive lecture discussion, industry expert guest speakers, learning exercise activities and group projects that will develop leadership, communication and marketing skills.

**Proposed Discipline:** Plumbing; Steamfitting; Air Conditioning, Refrigeration, Heating; Electricity; Business; Construction Management; Construction Technology

(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?**

Associates of Science

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

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

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**Instruction Office:**

Date presented at CCC:

Number assigned:

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**Foothill College  
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**Faculty Author:** Erica Paul

**Proposed Number:** JRYM 106

**Proposed Units:** 2.5

**Proposed Hours:** 54

**Proposed Transferability:** None

**Proposed Title:** Project Management for Commercial Construction Level 2

**Proposed Catalog Description & Requisites:**

Students will advance skills learned in the Level I Project Management course. Students will develop an understanding of internal and external communications and business practices necessary to be successful in the Project Management role. This class will develop and operate in a learning community environment. Students will work individually, with partners, and in groups. The class will consist of interactive lecture discussion, industry expert guest speakers, learning exercise activities, group projects, and will culminate in a pre-construction presentation.

Prerequisite: JRYM 105

**Proposed Discipline:** Plumbing; Steamfitting; Air Conditioning, Refrigeration, Heating; Electricity; Business; Construction Management; Construction Technology

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

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

Associates of Science

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

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

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**Instruction Office:**

Date presented at CCC:

Number assigned:

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**Faculty Author:** Benjamin Armerding

**Proposed Number:** NCEN 401

**Proposed Units:** 0 (noncredit)

**Proposed Hours:** 2 hours per week

**Proposed Transferability:** N/A

**Proposed Title:** Bridge to ENGL 1A

**Proposed Catalog Description & Requisites:** This course incorporates and contextualizes reading and writing strategies aligned with ENGL 1A coursework. Students receive additional support for success in ENGL 1A by practicing and reinforcing critical reading, thinking, and writing skills to engage further in the processes of expository and argumentative writing.

Corequisite: ENGL 1A depending on placement.

**Proposed Discipline:** English

(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?**

This course will be added to The Bridge to College English Non Credit Certificate of Completion.

**Are there any other departments that may be impacted from the addition of this course? Please identify those departments and the effect:** None

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

In compliance with legislation AB 705, this course provides students, who would otherwise be placed in pre-transfer level courses, additional support and guided instruction to meet the ENGL 1A learning objectives. These students will practice fundamental critical reading strategies and composition techniques to reinforce the objectives of ENGL 1A. This corequisite model aligns with recommendations from the state chancellor's office as well as the California Acceleration Project, and is supported by data showing that transfer level basic skills corequisites improve student throughput data to an average of 80%, which is significantly higher than our current pre-transfer basic skills series and higher than transfer-level success rates for this student population without the co-requisite.

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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:** Brian Lewis

**Proposed Number:** NCEN 442A

**Proposed Units:** 0 (noncredit)

**Proposed Hours:** 2 hours per week

**Proposed Transferability:** N/A

**Proposed Title:** Bridge to ENGL 1S

**Proposed Catalog Description & Requisites:**

A survey of basic theory, design, and implementation strategies for the student-managed formative portfolio. Students write a total of at least 1000 words, with emphasis on the reflective and evaluative processes necessary for portfolio development. Practice in managing and maintaining the information and artifacts of a portfolio as a comprehensive analysis of the student learning experience. Use of portfolio development to increase meta-cognitive awareness of the integration between reading and writing processes; of the student's location within discourse communities, including the campus community; and of the behaviors necessary for college success.

Corequisite: ENGL 1S depending on placement.

**Proposed Discipline:** English

(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?**

This course will be added to The Bridge to College English Non Credit Certificate of Completion.

**Are there any other departments that may be impacted from the addition of this course? Please identify those departments and the effect:** None

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

In compliance with legislation AB 705, this course provides students, who would otherwise be placed in pre-transfer level courses, additional support and guided instruction to meet the ENGL 1A learning objectives. These students will practice fundamental critical reading strategies and composition techniques to reinforce the objectives of ENGL 1A. This

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corequisite model aligns with recommendations from the state chancellor's office as well as the California Acceleration Project, and is supported by data showing that transfer level basic skills corequisites improve student throughput data to an average of 80%, which is significantly higher than our current pre-transfer basic skills series and higher than transfer-level success rates for this student population without the co-requisite.

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Date presented at CCC:

Number assigned:

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

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**Faculty Author:** Brian Lewis

**Proposed Number:** NCEN 442B

**Proposed Units:** 0 (noncredit)

**Proposed Hours:** 2 hours per week

**Proposed Transferability:** N/A

**Proposed Title:** Bridge to ENGL 1T

**Proposed Catalog Description & Requisites:**

Application of basic theory, design, and implementation strategies for the student-managed summative portfolio. Students write a total of at least 1000 words, with emphasis on the reflective and evaluative processes necessary for portfolio development. Management and publication of the artifacts of a summative portfolio as a comprehensive demonstration of the student learning experience across the curriculum. Use of portfolio publication to demonstrate meta-cognitive awareness of the integration between reading and writing processes; of the student's location within discourse communities, including the campus community; and of the behaviors necessary for college success. Students will demonstrate ability to transfer knowledge and learning across disciplines.

Corequisite: ENGL 1T depending on placement.

**Proposed Discipline:** English

(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?**

This course will be added to The Bridge to College English Non Credit Certificate of Completion.

**Are there any other departments that may be impacted from the addition of this course? Please identify those departments and the effect:** None

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

In compliance with legislation AB 705, this course provides students, who would otherwise be placed in pre-transfer level courses, additional support and guided instruction to meet the ENGL 1A learning objectives. These students will practice fundamental critical reading

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strategies and composition techniques to reinforce the objectives of ENGL 1A. This corequisite model aligns with recommendations from the state chancellor's office as well as the California Acceleration Project, and is supported by data showing that transfer level basic skills corequisites improve student throughput data to an average of 80%, which is significantly higher than our current pre-transfer basic skills series and higher than transfer-level success rates for this student population without the co-requisite.

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**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
CHEM 1A: General Chemistry	R. Nguyen	Prereq: MATH 105 (Intermediate Algebra)	Ongoing
CHEM 1A: General Chemistry	R. Nguyen	Prereq: CHEM 20 (I Matter: Introduction to Chemistry & the Environment) or CHEM 25 (Fundamentals of Chemistry)	Ongoing











# General Education Review Request

## AREA I - HUMANITIES

Course Number & Title: ENGL 38 Literature of Protest

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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 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: ENGL 38 Literature of Protest

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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:

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):

Course Objectives:

The student will be able to:

- A. Identify protest strategies and their effectiveness found in literature and other art forms such as film, visual art and music
- B. Analyze various forms of protest and their relationship to a political landscape

**H2.** Deepen their knowledge of the human condition through systematic inquiry into consciousness, values, ideas, and ideals;

#### Matching course component(s):

Course Objectives:

The student will be able to:

- D. Evaluate the ways in which protest literature and other art forms have confronted and ultimately influenced society
- E. Understand the intersection of more than one area of protest (i.e. gender, race, ability, sexual orientation)

**H3.** Develop appreciation for what is significant about human life and its creations;

#### Matching course component(s):

Course Description:

By examining the ways in which each work confronts the status quo of an inhumane society, we will trace a tradition of protest and discover the means and methods of protest from several different writers, musicians, filmmakers, and artists.

**H4.** Make reasoned judgments that reflect ethical and aesthetic human values;

#### Matching course component(s):

Course Objectives:

The student will be able to:

- D. Evaluate the ways in which protest literature and other art forms have confronted and ultimately influenced society
- E. Understand the intersection of more than one area of protest (i.e. gender, race, ability, sexual orientation)

## General Education Review Request

### AREA I - HUMANITIES

**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):**

Creation of a protest project, either digital, in-person, or symbolic, utilizing strategies from the course.

**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):**

Course Description:

An exploration of protest found in literature, music, and art in the United States. Art forms such as essays, short stories, poetry, drama, music, paintings, photography and film, which helped to inform, sustain, and empower during difficult periods of human history will be examined.

**H8.** Recognition of the variety of valid interpretations of artistic expression;

**Matching course component(s):**

Course Description:

Evaluation of how various artists construe the relationship between aesthetics and politics (that is, the social/political purposes of their art) is the central question we will seek to answer. By examining the ways in which each work confronts the status quo of an inhumane society, we will trace a tradition of protest and discover the means and methods of protest from several different writers, musicians, filmmakers, and artists.

**H9.** Appreciation of our common humanity within the context of diverse cultures;

**Matching course component(s):**

Course Objectives:

The student will be able to:

E. Understand the intersection of more than one area of protest (i.e. gender, race, ability, sexual orientation)

**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):**

Course Content:

B. Analysis of forms of protest such as sit-ins, hunger strikes, occupations, essays, poetry, parody, music, film, visual art, photojournalism, and social media/online campaigns

Legal challenges and obstacles to various forms of protests

C. Audience scope and influence on the protest

Comparison of the media and/or public's responses to various forms of protest.

Size and scale of protest relating to its outcome

Protests of one--hunger strikes

Media coverage of protests in connection to its outcome

D. Evaluation of a protest's legacy

Legal, social, political, or economic changes that occurred as a result of the protest such as the 1977 Section 504 protest in SF--led to the ADA in the 1990s.

**General Education Review Request**  
**AREA I - HUMANITIES**

**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):**

Methods of Evaluation:

- A. Two or more critical papers and/or essay exams
- B. Journal entries, reader responses, quizzes
- C. Final protest projects
- D. Class discussions, student presentations

**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):**

Methods of Evaluation:

- A. Two or more critical papers and/or essay exams
- B. Journal entries, reader responses, quizzes
- C. Final protest projects
- D. Class discussions, student presentations

**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):**

Course Content:

- E. Intersection of areas and forms of protest to fully address injustice
  - Matrices of oppression
  - Protesting mythical norms and othering
  - Standpoint Theory
  - Intertextuality and Metatextuality
  - The nexus of online and in-person protests

Creation of a protest project either digital, in-person, or symbolic, utilizing strategies from the course.

**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: Kimberly Escamilla

Date: 1/30/2018

Division Curriculum Rep: Benjamin Armerding

Date: 2/12/2018

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**General Education Review Request**  
**AREA I - HUMANITIES**

**FOR USE BY GE SUBCOMMITTEE:**

Review Committee Members: Carolyn Brown, Hilary Gomes, Kella Sevitch

Recommended for Approval:  \_\_\_\_\_ Not Recommended for Approval:  \_\_\_\_\_ Date: January 18, 2019

\_\_\_\_\_   
In the box below, please provide rationale regarding the subcommittee's recommendation:

This GE request looks great!

**FOR USE BY CURRICULUM OFFICE:**

Approved:  \_\_\_\_\_ Denied:  \_\_\_\_\_ CCC Co-Chair Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# 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

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;

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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

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

Below please find the key to interpreting the codes provided on the GE applications for the Pipes apprenticeship. Please send any questions you may have to: [starerpaul@fhda.edu](mailto:starerpaul@fhda.edu)

**101** - Year and Semester (first year, first semester in the case of "101." In the case of "102," this means first year, second semester, and so on....).

**.1** - Module number (".1" is the first module. ".2" is the second module and so on....)

Example: P101.1 = Plumbing Curriculum, first year, first semester, module 1





# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 1, Semester 1 – P 101 Course Title:

- Module 1: Union Heritage (6 hours)
- Module 2: Construction Safety (24 hours)
- Module 3: Use and Care of tools (12 hours)
- Module 4: Pipe and Tube Installations (42 hours)
- Module 5: Soldering and Brazing (24 hours)

108 hours (Lecture/Lab)

<b>Class Information</b>	<b>Instructor Information</b>
Day(s) – TBD	Name – TBD
Time – TBD	Phone – TBD
Room – TBD	Email – TBD
Day(s) – TBD	Name – TBD
Time – TBD	PH: (408) 453-6330
Room – TBD	Email – TBD

## Resources

1. United Association, “Your Heritage and Future in the Pipe Trades”, Chapters 1-3.
2. SmartMark CD
3. International Pipe Trades Joint Training Committee, “Job Safety and Health” for United Association Journeymen & Apprentices, 1999.
4. RWQCP, “Good Plumbing Practices Protect San Francisco Bay”, Summit Training Source – Instructional Series”, May 2003.
5. J.J. Keller, “Forklift Safety for Construction”, Video.
6. J.J. Keller, “Forklift Safety for Construction”, Instructor’s Guide.
7. J.J. Keller, “Forklift Safety for Construction”, Preparation Guide.
8. 29 CFR Part 1910.178(1) “Powered Industrial Truck Operator Training”, Final Rule
9. Horizon High Lift, “Self-Propelled Aerial Lift – Operator Safety Training”, (1998), California.
10. Horizon High Reach, California, “Boom Supported Aerial Lift – Operator Safety Training” (1998).
11. United Association, “UA Use and Care of Tools for United Association Journeymen & Apprentices,” 2000.
12. American Technical Publishers, Inc, “Plumbing Design & Installation,” 3<sup>rd</sup> Edition, L.V. Ripka, 2006.
13. United Association, “Pipe, Fittings, Valves, Supports and Fasteners for United Association for Journeyman and Apprentices,” 2000.
14. Swagelok—TM Swagelok Company, “Hand Tube Bender Manual”© 1999, 2003 Swagelok Company Printed in U.S.A., GLLMa [www.swagelok.com/downloads/webcatalogs/EN/MS-13-43.PDF](http://www.swagelok.com/downloads/webcatalogs/EN/MS-13-43.PDF)
15. United Association, “Water Supply,” 2000.

## Syllabus – Year 1, Semester 1 – P 101

### Course Title:

#### Resources (continued)

16. United Association- Book, “Soldering and Brazing”, 2002.
17. Smith Equipment 2601 Lockheed Avenue Watertown, SD 57201 605-882-3200, “Oxyfuel Safety”, 25 min. 30 sec- Video.
18. Kennecott Utah Copper Public Affairs Department P.O. Box 6001 Magna, Utah 84004, “Kennecott’s Bingham Canyon Mine”, 14 min. 00 sec. Video.
19. National Association of Plumbing-Heating Cooling Contractors, P.O. Box 6808, Falls Church, VA 22046-1148, 703-237-8100, “Soldering and Brazing Copper”, 18 min. 00 sec.
20. J.W. Harris Co, Inc., 4501 Quality Place, Mason, OH 45040-1971, 513-237-8100, “J.W. Harris Practical Braze Training”, 18 min. 35 sec. – Video.
21. Smith Equipment, 2601 Lockheed Avenue, Watertown, SD 57201, 605-882-3200, “Quickbraze Torch Systems”, 6 min. 00 sec. – Video.

#### Course Performance & Learning Objectives – Module 1 - Union Heritage

1. Identify partners in an apprenticeship.
2. Describe how to get off to the right start.
3. Identify the collective voice.
4. Identify role of employer as a partner.
5. Describe the effectiveness on the job.
6. Define the most important partner-YOU.
7. Describe the role and responsibilities of contractors.
8. Describe qualities that promote effectiveness on the job.
9. Identify characteristics and goals of outstanding journeymen.

#### Course Performance & Learning Objectives – Module 2 - Construction Safety

1. Identify the purpose and responsibilities of OSHA.
2. Describe workplace hazards.
3. Identify safety issues relating to hoisting.
4. Describe the importance of fall protection.
5. Identify Personal Protective Equipment (PPE).
6. Describe the importance of electrical safety.
7. Describe the importance of tool safety.
8. Describe the importance of stairway and ladder safety.
9. Describe proper methods for lifting and carrying objects.
10. Identify safety issues related to excavation.
11. Describe the characteristics of confined spaces.
12. Describe atmospheric hazards.

**Syllabus – Year 1, Semester 1 – P 101**

**Course Title:**

**Course Performance & Learning Objectives – Module 2 - Construction Safety, (continued)**

13. Identify the responsibilities of parties involved with confined spaces.
14. Describe the importance of fire safety.
15. Describe policies and procedures related to environmental management systems.
16. Define regulations for the Resource Conservation Recovery Act.
17. Describe policies and procedures for handling hazardous waste.
18. Define procedures for dealing with storm water.
19. Define policies and procedures for dealing with asbestos and its abatement.
20. Describe policies and procedures for lead safety.
21. Define methods currently being taken to protect San Francisco Bay.
22. Safely operate a rough terrain vehicle (forklift) to prevent accidents.
23. Discuss self-propelled and boom supported aerial lift safety.

**Course Performance & Learning Objectives – Module 3 - Use and Care of Tools**

1. Describe safe use of tools and equipment.
2. Identify types of and common use of the following tools:
  - a. Screw drivers, pliers and nut drivers.
  - b. Wrenches.
  - c. Vises and clamps.
  - d. Hammers and saws.
  - e. Files.
  - f. Punches and chisels.
  - g. Pipe wrenches, vises and miscellaneous tools.
3. Convert between English and Metric measurements.
4. Use common layout and measuring tools.
5. Use and read common marking tools.
6. Convert construction measurements from fractions to decimal measurements.
7. Properly use:
  - a. Pipe cutting tools.
  - b. Pipe reaming tools.
  - c. Drilling tools.
8. Pipe boring tools.
9. Recognize and use:
  - a. Digging and lifting tools and equipment.
  - b. Finishing tools and equipment.
  - c. Testing tools and equipment.

## Syllabus – Year 1, Semester 1 – P 101

### Course Title:

#### Course Performance & Learning Objectives – Module 4 - Pipe and Tube Installations

1. Describe common terms associated with steel pipe.
2. Identify the various types of steel pipe.
3. Identify the various types of fittings for steel pipe.
4. Perform joining methods used for steel pipe.
5. Prepare steel pipe for threading.
6. Use the flanged method of joining steel pipe.
7. Use the grooved coupling method of joining steel pipe.
8. Identify plastic pipe nomenclature.
9. Define plastic pipe materials.
10. Describe plastic pipe features.
11. Identify and properly use plastic pipe fittings.
12. Assemble plastic pipe using multiple joining methods.
13. Identify cast iron pipe nomenclature.
14. Describe cast iron pipe features.
15. Identify the types and uses of fittings.
16. Prepare cast iron joints for joining.
17. Properly cut cast iron pipe.
18. Discuss the components and functions of hangers.
19. Identify fire-stop materials.
20. Describe methods of fire-stop installation.
21. Discuss tube bending procedures.
22. Describe pressure testing.
23. Describe hydrostatic testing.
24. Create water supply mock-up.

#### Course Performance & Learning Objectives – Module 5 - Soldering and Brazing

1. Describe safe work practices including:
  - a. Handling high pressure gas cylinders.
  - b. Using torches in soldering and brazing.
  - c. Identifying methods of fire prevention.
  - d. Using personal protective equipment (PPE).
2. Define the terms generally used in conjunction with the methods used for soldering and brazing copper tube.
3. Identify the common types of fittings used with copper tubing.
4. Describe the manufacture and materials of copper pipe.
5. Describe the manufacture and materials of copper tubing.
6. Describe the types of solders used for joining copper tube.
7. Describe the type of brazing filler metals used for joining copper tube.
8. Describe the types of fluxes used for soldering and brazing copper tube.
9. Prepare and assemble copper joints.
10. Identify the various uses of heating equipment.
11. Perform the soldering process.

**Syllabus – Year 1, Semester 1 – P 101**  
**Course Title:**

**Course Performance & Learning Objectives – Module 5 - Soldering and Brazing, (continued)**

12. Prepare and assemble copper joints.
13. Use heating equipment to make a soldered joint.
14. Perform a soldering joint test.
15. Make a brazed joint.
16. Perform a brazed joint test.

**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**

Name	Telephone Number	Email Address



# 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>



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 2, Semester 1 – P 201 Course Title:

Module 10: Storm Drains; Interceptors (18 hours)  
Module 11: Water Supply (27 hours)  
Module 12: Applied Drawing (63 hours)

108 hours (Lecture/Lab)

<b><u>Class Information</u></b>	<b><u>Instructor Information</u></b>
Day(s) – TBD	Name – TBD
Time – TBD	Phone – TBD
Room – TBD	Email – TBD
Day(s) – TBD	Name – TBD
Time – TBD	PH: (408) 453-6330
Room – TBD	Email – TBD

## Resources

1. International Pipe Trades Joint Training Committee, Inc, “Drainage”, Sewers and Drains, 2001.
2. City of San Jose California website, [www.sanjoseca.gov](http://www.sanjoseca.gov), “San Jose Post Construction Urban Runoff Management Policy”, and “Post Construction Hydro-Modification Management Policy”.
3. International Association of Plumbing and Mechanical Officials, “Uniform Plumbing Code”, 2000 Edition, 1999.
4. Joint Plumbing Apprentice and Journeyman Training, Inc, “A Guide to Service Work”, Section L-3, “Troubleshooting Plumbing Systems”, 1994.
5. International Association of Plumbing and Mechanical Officials, “Traps and Interceptors”, “Mandatory Referenced Standards”, 1999.
6. United Association, “Water Supply”, 2000.
7. United Association “Related Science”, 2000.
8. University of Southern California, “Cross Connection Control Manual”.
9. American Technical Publishers, Inc, “Plumbing Design & Installation”, 2<sup>nd</sup> Edition, L.V. Ripka, 2002.
10. International Pipe Trades Joint Training Committee, Inc. “Introduction to Basic Drawing Tools, Measuring Tools, and Lettering Skills”, Drawing Interpretation and Plan Reading for United Association Journeyworkers and Apprentices, 2006.
11. International Pipe Trades Joint Training Committee, Inc., “Drawing Interpretation and Plan Reading for United Association Journeyworkers and Apprentices”, 2006.

## Syllabus – Year 2, Semester 1 – P 201

### Course Title:

#### Resources (continued)

12. Michael A. Joyce, “Blueprint Reading and Drafting for Plumbers”.
13. IAPMO, “Uniform Plumbing Code Study Guide”, 2000 Edition.

#### Course Performance & Learning Objectives – Module 10 - Storm Drains; Interceptors

1. Describe storm water drainage.
2. Describe requirements specific to San Jose.
3. Discuss installation of underground piping.
4. Discuss installation of rainwater piping.
5. Define different types of storm water piping joints.
6. Demonstrate procedures used to make joints.
7. Discuss miscellaneous installation procedures.
8. Describe different types of drains.
9. Discuss roof drainage.
10. Describe use of cleanouts.
11. Demonstrate knowledge of roof drains and cleanouts.
12. List procedures for the removal of blockages.
13. Describe use of conductors, leaders and connections.
14. Test drainage systems.
15. Discuss use of interceptors.
16. Describe use of grease traps and interceptors.
17. List different ways grease interceptors can operate.
18. List ways to remove grease from interceptor.
19. Describe use of other kinds of interceptors and separators.
20. Describe use of modular type oil/water separators.
21. List how to troubleshoot problems with storm water systems.
22. Identify common water distribution system problems.
23. Identify methods to correct common water distribution system problems.
24. Continue installation of water distribution system.

#### Course Performance & Learning Objectives – Module 11 - Water Supply

1. Describe characteristics of water.
2. Identify sources of water.
3. Define water contaminants.
4. Describe methods used for water purification.
5. Identify water treatment equipment.
6. Define types of water main.
7. Identify sections of the water main.
8. Describe water main piping.
9. Describe water main joining methods.
10. Describe protection devices for water main piping joints.

## Syllabus – Year 2, Semester 1 – P 201

### Course Title:

#### Course Performance & Learning Objectives – Module 11 - Water Supply (continued)

11. Describe water service piping systems.
12. Demonstrate the installation of water meter fittings.
13. Demonstrate the installation water service valves.
14. Describe water distribution systems.
15. Define water distribution system requirements.
16. Define building water distribution system design requirements.
17. Define building water distribution system layout methods.
18. Calculate building water distribution pipe sizing.
19. Describe the differences between potable and non-potable piping systems.
20. Identify control devices and describe methods to protect against cross contamination.
21. Identify buildings where cross contamination control devices are required.
22. Identify UPC Code requirements in reference to cross connection control.
23. Define characteristics and properties of hot water.
24. Identify common types of water heaters.
25. Identify hot water safety devices.
26. Continue installation of water distribution system mock up.
27. Demonstrate pressure testing.
28. Demonstrate hydrostatic testing.
29. Finish water supply mock up.
30. Identify five factors that determine size of water piping.
31. Size water supply piping.
32. Size water supply piping in larger installations.
33. Size water supply piping for a four-unit, multi-family dwelling.
34. Size water supply piping for a public building.

#### Course Performance & Learning Objectives – Module 12 - Applied Drawing

1. Identify basic drafting tools used by journey workers for making sketches.
2. Comply with proper drafting protocol for lines and lettering.
3. Identify importance of location when creating a three-view drawing.
4. Demonstrate the correct method for arranging plan and elevation views.
5. Describe graphic symbols for pipe fittings and valves.
6. Identify various piping symbols.
7. Interpret technical drawings for proper installation of piping systems.
8. Describe riser diagrams.
9. Interpret isometric drawings.
10. Define rules for making isometric drawings.
11. Describe building plans.
12. Describe architectural specifications.
13. Discuss codes from various aspects of building.
  
14. Apply code information to determine proper code applications from prints from Drawing Interpretation and Plan Reading Building Plans.

**Syllabus – Year 2, Semester 1 – P 201**  
**Course Title:**

**Course Performance & Learning Objectives – Module 12 - Applied Drawing (continued)**

15. Identify and describe various plumbing symbols.
16. Discuss features of shop drawings.
17. Describe process of creating a shop drawing.
18. Discuss adding detail to shop drawings
19. Review code sections for UPC Chapter 6, Water Supply and Distribution.
20. Draw water sizing diagram.
21. Interpret ADA requirements for fixture installation.
22. Create ADA compliant drawing for a water closet installation.
23. Create storm drain system.
24. Create interceptor for a commercial application.

**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**

Name	Telephone Number	Email Address



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 2, Semester 2 – P 202

### Course Title:

- Module 13: Knots and Rigging (15 hours)
- Module 14: Builder's Level-Transit (27 hours)
- Module 15: Related Electricity (12 hours)
- Module 16: Industrial Safety (54 hours)

108 hours (Lecture/Lab)

<u>Class Information</u>	<u>Instructor Information</u>
Day(s) – TBD	Name – TBD
Time – TBD	Phone – TBD
Room – TBD	Email – TBD
Day(s) – TBD	Name – TBD
Time – TBD	PH: (408) 453-6330
Room – TBD	Email – TBD

## Resources

1. International Pipe Trades Joint Training Committee, Inc., "Rigging", 2004.
2. United Association Journeyworkers & Apprentices, International Pipe Trades Joint Training Committee, Inc, "Related Mathematics", 2002.
3. United Association Journey workers & Apprentices, "Basic Electricity", 2001.
4. McGraw Hill, Hackman, Christian, Ellsworth Hackman, Matthew Hackman, *Hazardous Waste Operations & Emergency Response Manual and Desk Reference*", 2002.
5. Hackman, Christian, Ellsworth Hackman, Matthew Hackman, "Fall Protection", Handout Supplemental.
6. CA/OSHA Consultation Service, Department of Industrial Relations, Easy Ergonomics: "A Practical Approach for Improving the Workplace", 1999 (on pdf on CD).
7. CAL/OSHA (on pdf on CD) Supplemental: Hackman, Christian, Ellsworth Hackman, Matthew Hackman, "Ergonomic Survival Guide for Carpenters & Framers".
8. CAL/OSHA, Supplemental: Hackman, Christian, Ellsworth Hackman, Matthew Hackman, "Respiratory Protection in the Workplace", (on pdf on CD).
9. CAL/OSHA, "Guide to the California Hazard Communication Regulation", (on pdf on CD) Supplemental: Hackman, Christian, Ellsworth Hackman, Matthew Hackman.
10. CAL/OSHA, "Lockout/Blockout", CD, Hackman, Christian, Ellsworth Hackman, Matthew Hackman.
11. CAL/OSHA, "Is it Safe to Enter A Confined Space", (on pdf on CD) Supplemental: Hackman, Christian, Ellsworth Hackman, Matthew Hackman.

## Syllabus – Year 2, Semester 2 – P 202

### Course Title:

#### Course Performance & Learning Objectives – Module 13 - Knots and Rigging

1. Identify safety protocol relative to barricade and notification of people in the area.
2. Perform calculations using mathematical formulas to determine the weights of structural shapes, equipment and construction materials.
3. Identify safe work practices when fastening fiber rope to heavy objects.
4. Demonstrate ability to identify and tie types of knots and hitches used for rigging operations.
5. Describe the selection and use of wire rope.
6. Demonstrate knowledge in the selection and use of slings.
7. Demonstrate the proper use of hoisting and jacking equipment.
8. Identify proper rigging hardware and sling configurations.
9. Describe special procedures and safe work practices required during rigging operations using helicopters.
10. Demonstrate types of cranes, operating hazards and capacity factors.
11. Identify industry recognized signals used for hoisting materials and equipment.
12. Demonstrate crane operation for conducting a rigging operation.

#### Course Performance & Learning Objectives – Module 14 - Builder's Level- Transit

1. Identify process for gaining approval to excavate.
2. Describe elevation concepts.
3. Discuss combination transits and levels.
4. Discuss leveling procedures.
5. Discuss elevation readings.
6. Discuss layout of a line.
7. Identify the process of laying out a line.
8. Describe establishing depth.
9. Discuss invert elevations.
10. Identify stations.
11. Discuss elevation of a ditch.
12. Describe profile drawing.
13. Describe the laser level.

#### Course Performance & Learning Objectives – Module 15 – Related Electricity

1. Describe electrical safety.
2. Define electricity.
3. Define methods of producing electricity.
4. Explain relationship between magnetism and electricity.
5. Describe rules and laws of electric circuits.
6. Define and calculate Ohm's Law.
7. Describe electrical power and energy.
8. Define simple circuits.
9. Define series circuits.
10. Define parallel circuits.



## Syllabus – Year 2, Semester 2 – P 202

### Course Title:

#### Course Performance & Learning Objectives – Module 15 – Related Electricity, continued

11. Define purpose and operation of transformers.
12. Explain operation and common vocabulary of motors.
13. Use electric meters and instruments.

#### Course Performance & Learning Objectives – Module 16 - Industrial Safety

1. Identify regulators, legislation and HAZWOPER working environment.
2. Describe roles and responsibilities of Federal Regulators.
3. Define HAZWOPER regulations and standards.
4. Differentiate between various agencies definition of Hazardous Waste.
5. Describe characteristics and effects on humans of six categories of toxic hazards.
6. Describe systemic poisons and biohazard toxic hazards.
7. Describe fire hazards.
8. Describe explosive and propellant hazards.
9. Describe corrosive hazards.
10. Describe chemical reactivity hazards.
11. Describe radioactivity hazards.
12. Describe characteristics and effects on humans of six categories of toxic hazards.
13. Describe how toxic materials affect one's health.
14. Describe types of common personal protective equipment and their safe use.
15. Describe types of common fall protection systems and demonstrate their safe use.
16. Describe the importance of using ergonomics to improve the workplace.
17. Describe types of respirators.
18. Identify methods to assess exposure to respiratory hazards.
19. Properly use and maintain various types of respirators
20. Describe the three major systems of signage for hazardous material containers.
21. Become familiar with and use the Emergency Response Guidebook (ERG).
22. Describe program elements and requirements for hazard communication regulation.
23. Describe specific workplace hazards.
24. Describe conditions that require locking out and blocking out of machinery.
25. Explain the decontamination process.
26. Describe various rescue operations, rescue training, and equipment.
27. Define scientific and regulatory confined space terms.
28. Describe scientific and regulatory confined space terms.
29. List the dangers or potential dangers within or nearby a confined space.
30. Describe the dangers or potential dangers within or nearby a confined space.
31. List control measures for the elimination and controls of hazards.

**Syllabus – Year 2, Semester 2 – P 202**  
**Course Title:**

**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**

Name	Telephone Number	Email Address



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 3, Semester 1 – P 301 Course Title:

Module 17: Plumbing Fixtures (54 hours)  
Module 18: Plumbing Codes (54 hours)

108 hours (Lecture/Lab)

<u>Class Information</u>	<u>Instructor Information</u>
Day(s) – TBD	Name – TBD
Time – TBD	Phone – TBD
Room – TBD	Email – TBD
Day(s) – TBD	Name – TBD
Time – TBD	PH: (408) 453-6330
Room – TBD	Email – TBD

## Resources

1. International Pipe Trades Joint Training Committee, Inc. "Plumbing Fixtures and Appliances", 2001.
2. International Pipe Trades Joint Training Committee, Inc. "Assignments for Plumbing Fixtures and Appliances", 2001.
3. International Pipe Trades Joint Training Committee, Inc, "Assignments for Plumbing Fixtures and Appliances", 2005.
4. Joint Plumbing Apprentice and Journeyman Training, Inc, "A Guide to Service Work", 1994.
5. ATP Publication, "Plumbing Design and Installation", 2<sup>nd</sup> edition, 2002.
6. American Technical Publishers, Inc., "Plumbing Design and Installation", 2002.
7. IAPMO. "Uniform Plumbing Code Illustrated Training Manual", International Association of Plumbing and Mechanical Officials.
8. IAPMO, "Uniform Plumbing Code", 2000 Edition, 1999, Chapter 1.
9. IAPMO, "Uniform Plumbing Code Study Guide", 2000 Edition.
10. [www.nfpa.org](http://www.nfpa.org); [www.oshpd](http://www.oshpd) ; and California Department of Justice website, "Seismic Restraint Manual, SMACNA, 2<sup>nd</sup> Edition", Feb, 1998.

**Syllabus – Year 3, Semester 1 – P 301**

**Course Title:**

**Course Performance & Learning Objectives – Module 17 - Plumbing Fixtures**

1. Define and classify plumbing fixtures.
2. Describe operation of water closets.
3. Describe flushing action of various types of water closets.
4. Identify names and design features for various types of water closets.
5. Describe design characteristics of various types of water closets.
6. Describe design characteristics and installation procedures for bidets and urinals.
7. Install a wall-hung siphon jet urinal. Describe design characteristics of lavatories.
8. Describe design styles and characteristics of bathtubs and commercial showers.
9. Identify characteristics of service sinks and floor drains.
10. Describe design styles and characteristics of drinking fountains and water coolers.
11. Describe general safety, sanitary and Americans with Disabilities Act principles.
12. Identify requirements for connecting to potable water supply.
13. Describe types and operation of plumbing traps
14. Install a lavatory trap.
15. Install a bath/shower trap.
16. Identify uses of special tools and equipment for setting fixtures.
17. Select and install anchors and fasteners.
18. Install plumbing fixtures requiring wood backing.
19. Demonstrate procedures for installing slab-top lavatory.
20. Identify parts of and function of closet carriers.
21. Describe function of water closet carrier fittings.
22. Calculate measurements for installing water closet.
23. Install flush valve.
24. Sequence and layout plumbing fixtures.
25. Install a control stop and waste valve.
26. Describe fixture supply stops.
27. Describe installation procedures for fixture supply stops.
28. Identify types of traps for waste connections to fixtures.
29. Describe procedures for installing a water closet.
30. Repair a ball cock on a water closet.
31. Install a floor-mounted water closet.
32. Install a wall-mounted lavatory.
33. Describe purposes and types of fixture controls.
34. Describe operation and components of float valves.
35. Describe operation and components of flush valves.
36. Describe operation of vacuum assist water closet flushing cycle.
37. Describe operation of diaphragm direct flush valves.
38. Describe operation of piston type direct flush valves.
39. Describe types and operation of flushing controls for urinals.
40. Describe operation of 120V AC line voltage circuit timers.

**Syllabus – Year 3, Semester 1 – P 301**

**Course Title:**

**Course Performance & Learning Objectives – Module 17 - Plumbing Fixtures  
(continued)**

41. Describe battery powered automatic flushing devices.
42. Identify types and applications of bedpan cleaners.
43. Describe types and operation of bibb faucets.
44. Disassemble and reassemble a push-button type single lavatory faucet.
45. Describe operation of thermostatic mixing valve water control devices.
46. Describe operation of piston type pressure balancing valves.
47. Describe operation of stoppers and pop-up waste drains.
48. Describe waste cleaning devices and backflow preventers.
49. Install dual control lavatory faucet.
50. Describe operation of water heaters.
51. List components of gas water heaters.
52. Describe operation of gas water heaters.
53. Describe operation of electric water heaters.
54. Install gas water heater.
55. Demonstrate electric water heater installation procedures.
56. List common complaints about hot water heaters.
57. Describe how pressure affects water heater operations.
58. Describe procedures to check continuity between lower E.C.O. terminal and body of valve.
59. List thermocouple troubleshooting procedures.
60. Demonstrate closed circuit testing.
61. Describe how manifold pressures should be measured.
62. List the test procedures for electric water heater components.
63. Test operation of thermocouple on gas hot water heater.
64. Test operation of upper and lower thermostats in electric hot water heater.
65. Replace thermostat on electric hot water heater.
66. Replace screw-in element on electric hot water heater.
67. Fix malfunctions on pressure-flush valve toilets.
68. Demonstrate knowledge of tempering valves.
69. Demonstrate the replacement of stem units.
70. Describe the service requirements of horizontal pumps.
71. Define pump troubleshooting procedures.
72. Discuss circulating pumps.
73. Install circulating pumps.
74. Replace a horizontal pump.
75. Replace the impeller on a pump.
76. Troubleshoot malfunctioning pumps.

## Syllabus – Year 3, Semester 1 – P 301

### Course Title:

#### Course Performance & Learning Objectives – Module 18 - Plumbing Codes

1. Describe the importance of testing and inspecting plumbing systems.
2. Identify the various types of plumbing system tests.
3. Coordinate the testing and inspection of plumbing systems.
4. Identify national, state and local standards and codes.
5. Demonstrate knowledge of code sections for UPC Chapter 1, Administration.
6. Demonstrate ability in researching answers to code questions.
7. Define terms in UPC, Chapter 2.
8. Demonstrate knowledge of general regulations as presented in Chapter 3.
9. Demonstrate knowledge of sections for UPC Chapter 3, General Regulations
10. Demonstrate knowledge of codes related to Chapter 4, Plumbing Fixtures and Fixture Fittings in UPC.
11. Demonstrate knowledge of codes related to Plumbing Fixtures and Fixture Fittings as presented in Chapter 4 of UPC.
12. Demonstrate knowledge of code sections for UPC Chapter 4, Plumbing Fixtures and Fixture Fittings including accessibility and ADA requirements.
13. Demonstrate knowledge of codes related to Water Heaters as presented in Chapter 5 of the UPC.
14. Identify and know codes for Water Heaters as presented in the UPC Chapter 5.
15. Demonstrate knowledge of codes related to Water Heaters as presented in Chapter 5 of UPC.
16. Identify and know code sections for UPC Chapter 6, Water Supply and Distribution.
17. Identify and know code sections for UPC Chapter 6, Water Supply and Distribution.
18. Demonstrate knowledge of codes related to Water Supply and Distribution as presented in Chapter 6 of UPC.
19. Describe code sections 701-712 for UPC Chapter 7, Sanitary Drainage Part 1.
20. Describe code sections 713 for UPC Chapter 7, Sanitary Drainage Part 2.
21. Describe code sections 714-723 for UPC Chapter 7, Sanitary Drainage Part 2.
22. Demonstrate knowledge of calculating drainage pipe sizing.
23. Demonstrate knowledge of code sections for UPC Chapter 8, Indirect Wastes.
24. Demonstrate knowledge of code sections for UPC Chapter 9, Vents.
25. Describe code sections for UPC Chapter 10, Traps and Interceptors.
26. Identify sections for UPC Chapter 11, Storm Drainage.
27. Identify and know codes related to Fuel Piping as presented in Chapter 12 of UPC.
28. Demonstrate methods and procedures for sizing fuel gas piping.
29. Identify code sections for UPC Chapter 13, Health Care Facilities.
30. Review questions for UPC Chapter 13, Health Care Facilities.
31. Identify organizations and agencies that have regulations and requirements that relate to plumbing installations.
32. Describe code sections for UPC Chapter 14, Referenced Standards.
33. Review questions for UPC Chapter 14, Referenced Standards.
34. Identify sections for UPC Chapter 15, Firestop Protection.
35. Review questions for UPC Chapter 15, Firestop Protection.

**Syllabus – Year 3, Semester 1 – P 301**  
**Course Title:**

**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>



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 3, Semester 2 – P 302 Course Title:

Module 19: Advanced Trade Math (108 hours)

108 hours (Lecture/Lab)

<u>Class Information</u>	<u>Instructor Information</u>
Day(s) – TBD	Name – TBD
Time – TBD	Phone – TBD
Room – TBD	Email – TBD
Day(s) – TBD	Name – TBD
Time – TBD	PH: (408) 453-6330
Room – TBD	Email – TBD

### Resources

1. Thompson-Delmar Learning, “*Mathematics for Plumbers and Pipefitters*”, 6<sup>th</sup> ed., Smith, Lee, J. Russell Guest, Bartholomew D’Arcangelo, and Benedict D’Arcangelo, 2004.

### Course Performance & Learning Objectives – Module 19 - Advanced Trade Math

1. Explain basic rules of mathematics (Unit 1).
2. Use formulas (Unit 2).
3. Solve using formulas/equations (Unit 3).
4. Calculate square root (Unit 4).
5. Measure angles (Unit 5).
6. Convert length measurements (Unit 6).
7. Define standard pipe weights and calculate clearances (Unit 7).
8. Determine allowance for threaded fittings (Unit 8).
9. Define uses of copper tubing and calculate wall thickness (Unit 9).
10. Determine allowances for copper fittings (Unit 10).
11. Define styles, weights, and chemical composition of plastic pipe (Unit 11).
12. Determine allowances for plastic fittings (Unit 12).
13. Define materials and considerations for welded steel pipe (Unit 13).
14. Determine allowances for welded fittings (Unit 14).
15. Calculate equal spacing (Unit 15).
16. Use angles in plumbing (Unit 16).
17. Determine offsets, diagonal, rise and run (Unit 17).
18. Solve for 45° Constants (Unit 18).
19. Calculate pipe diagonals and derive pipe lengths (Unit 19).
20. Calculate three-pipe diagrams with a 45° offset (Unit 20).
21. Use a 45° angle to make a right angle (Unit 21).



**Syllabus – Year 3, Semester 2 – P 302**

**Course Title:**

**Course Performance & Learning Objectives – Module 19 - Advanced Trade Math  
(continued)**

22. Use a 45° offset with a wye fitting (Unit 22).
23. Use a wye and tee-wye assembly (Unit 23).
24. Find the offset using the length of the diagonal (Unit 24).
25. Solve for other angles (Unit 25).
26. Describe methods and calculations of pipe bending (Unit 26).
27. Allow hubbed and non-hub cast iron pipe (Unit 27).
28. Solve for e-e length and lead amounts of cast iron pipe (Unit 28).
29. Calculate bend offsets (Unit 29).
30. Combine assemblies with cast iron wyes and tee-wyes (Unit 30).
31. Layout single loop back venting (Unit 31).
32. Calculate grade, percent grade, and drop (Unit 32).
33. Calculate elevation and grade (Unit 33).
34. Calculate elevation in a plan view (Unit 34).
35. Calculate two patterns of jumper offsets (Unit 35).
36. Calculate center-to-center and end-to-end lengths for 45° offsets in parallel (Unit 36).
37. Calculate 90° turns with parallel offsets (Unit 37).
38. Calculate rolling offsets (Unit 38).
39. Calculate combination offsets (Unit 39).
40. Create pipe length layouts (Unit 40).
41. Calculate end-to-end measurements using cast iron flanged fittings (Unit 41).
42. Calculate the setback of any miter cut (Unit 42).
43. Design shower pans (Unit 43).
44. Design tank liners (Unit 44).
45. Design a roof flange (Unit 45).
46. Design an elliptical roof opening (Unit 46).
47. Calculate water weights and volumes (Unit 47).
48. Calculate volume of rectangular solids (Unit 48).
49. Calculate volume of cylindrical tanks (Unit 49).
50. Calculate volumes of spheres and half-spheres (Unit 50).
51. Calculate volumes of partly filled tanks (Unit 51).
52. Calculate partial volumes and weights of compound shapes (Unit 52).
53. Calculate water pressure, head and force (Unit 53).
54. Determine ratio of pipe capacities (Unit 54).
55. Use “Unit of Flow” method for pipe sizing (Unit 55).
56. Calculate heat loss for radiator sizes (Unit 56).
57. Calculate radiation sizing for total heat loss of a room (Unit 57).
58. Estimate size of piping (Unit 58).
59. Size ventilation for commercial buildings (Unit 59).
60. Calculate heat loss for an entire house (Unit 60).
61. Define words used in leveling (Unit 61).
62. Keep field notes using the conventions used in site leveling (Unit 62).

**Syllabus – Year 3, Semester 2 – P 302**  
**Course Title:**

**Course Performance & Learning Objectives – Module 19 - Advanced Trade Math (continued)**

**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>



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 4, Semester 1 – P 401

### Course Title:

Module 20: Domestic and Industrial Water Installations (54 hours)

Module 21: Cutting and Welding (54 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. American Water Works Association, “Water Transmission and Distribution”, Principles and Practices of Water Supply Operations, Third Edition, 2003.
2. International Pipe Trades Joint Training Committee, Inc., “Water Supply” for United Association Journeymen and Apprentices, 2000.
3. American Water Works Association, “Water Transmission and Distribution”, Third Edition, (2003).
4. United Association, “Pipe, Fittings, Valves, Supports and Fasteners”.
5. High Purity Piping Training Program: Module 3, “High Purity Water”.
6. “Uniform Plumbing Code”: 2000 Edition.
7. University of Southern California – Foundation for Cross-Connection Control and Hydraulic Research, “Manual of Cross-Connection Control”, Ninth Edition, 1993.
8. Thompson Delmar Publishing, “Welding Safety”, Chapter 1. Welding Principles and Applications, 5<sup>th</sup> Ed. 2004, Larry Jeffus.
9. <http://www.hse.gov.uk/pubns/indg229.pdf>, HSE, “Using work equipment safely”, Retrieved on March 9, 2007.
10. <http://siri.uvm.edu/ppt/yourbacklifting/sldoo1.htm>, SIRI, “Your Back Lifting Safety”, Retrieved on March 9, 2007.
11. Thompson Delmar Publishing, Jeffus L. (2004), “Welding Principles and Applications”, 5<sup>th</sup> Ed.
12. Victor Equipment Company. (2003), “Oxy-fuel Welding, Cutting & Heating Guide”, Form No. 56-0003. St. Louis MO.
13. United Association, International Pipe Trades Joint Committee. (2001), “Oxy-fuel Cutting and Shielded Metal Arc Welding”. Reprinted 2004, Washington DC.

## Syllabus – Year 4, Semester 1 – P 401

### Course Title:

#### Course Performance & Learning Objectives – Module 20 - Domestic and Industrial Water Installations

1. Describe the operation of municipal water distribution systems.
2. Describe factors required to operate and maintain water distribution systems.
3. Describe the process of water testing.
4. Describe the water treatment process.
5. Describe various aspects of water distribution.
6. Describe the components and operation of high purity water systems (HPW).
7. Identify purification technologies and materials required for HPW system operation.
8. Describe factors required for an effective building water supply
9. Describe backflow connection and cross-connection control.
10. Discuss backflow and backsiphonage prevention assemblies.
11. Follow recommended procedures to assure accurate results of backflow prevention assembly tests completed in the field.

#### Course Performance & Learning Objectives – Module 21 - Cutting and Welding

1. Discuss the proper techniques for lifting and caring for your back.
2. Identify the various types and proper use of lifting equipment.
3. Illustrate the physical and mechanical properties of pipe.
4. Discuss the aspects of welding, cutting and general shop safety.
5. Discuss the theoretical principles associated with cutting, heating and bending steel.
6. Identify the integral components of the oxy-fuel system and their function.
7. Select appropriate tips and establish the gas pressures for various oxy-fuel operations.
8. Demonstrate the proper assembly of oxy-fuel equipment.
9. Review the proper start up and shut down procedure for using the oxy-fuel torch.
10. Demonstrate the proper techniques associated with the start up, operation and shut down of the torch to cut, heat and bend steel.
11. Supervise the apprentice in their practice of setting up, operating and shutting down the oxy-fuel torch system.
12. Supervise the apprentices in their practice of setting up, operating and shutting down the oxy-fuel torch system.
13. Provide individual guidance for the apprentices as they complete torch cutting activities.
14. Assess the apprentice's skills and recommend repeat of activities as necessary.
15. Illustrate methods of laying out pipe for manual cutting with the torch.
16. Demonstrate the proper techniques associated with cutting steel pipe with the torch.
17. Assess apprentice skills and recommend repeat of torch activities as necessary.
18. Make minor external repairs to equipment and accessories.
19. Illustrate the various methods of beveling plate and pipe.
20. Demonstrate the use of the mechanical beveling machines.

**Syllabus – Year 4, Semester 1 – P 401**

**Course Title:**

**Course Performance & Learning Objectives – Module 21 - Cutting and Welding  
(continued)**

21. Demonstrate the required techniques for using the oxy-fuel torch to manually bevel steel plate.
22. Supervise each apprentice in their practice of beveling plate with the oxy-fuel torch and mechanical beveling machine.
23. Apply skills and knowledge learned to beveling steel pipe.
24. Assess the apprentice's skills and recommend repeat of activities as necessary.
25. Demonstrate beveling pipe with the oxy-fuel torch beveling machine.
26. Supervise the apprentice in their practice of beveling pipe with the oxy-fuel torch machine.
27. Practice cutting, beveling operations.
28. Introduce the apprentice to plasma arc cutting principles.
29. Introduce the apprentice to the principles of the plasma arc cutting torch.
30. Demonstrate cutting aluminum and stainless steel plate and pipe with the plasma torch.
31. Supervise apprentice's practice of plasma arc cutting aluminum and stainless plate and pipe.
32. Provide an open lab for students to practice, complete lab assignments and prepare for written and practical examinations.
33. Supervise and provide individual instruction of student practice activities.
34. Assess the apprentice's skills and knowledge.
35. Review the basic safety precautions and personal protective equipment required for shielded metal arc welding (SMAW).
36. Illustrate the theoretical principles of shielded metal arc welding.
37. Identify the integral components and assemble the SMAW equipment.
38. Demonstrate striking the arc and producing weld beads on flat plate.
39. Discuss electrodes and the fundamental operating characteristics of SMAW.
40. Review striking the arc and producing flat weld beads on steel plate.
41. Supervise the apprentice in striking the arc and producing flat beads.
42. Demonstrate producing horizontal fillet welds in lap joints.
43. Supervise the apprentice in producing horizontal fillets in lap joints.
44. Demonstrate producing welds in square butt joints in the flat position (1G).
45. Supervise the apprentice's practice by providing individualized instruction of welding in the horizontal lap and flat square butt joints.
46. Discuss and provide examples of weld defects and discontinuities.
47. Discuss the aspects of bead sequencing and bead layers.
48. Demonstrate bead sequencing by producing multi-pass layers of stringer and weave beads in lap and T-joints in the vertical (3F) position.
49. Supervise the apprentice's practice of welding fillets in vertical lap and T joints.
50. Demonstrate welding butt joints in the vertical (3G) position.
51. Demonstrate welding fillets in the overhead (4F) position.
52. Supervise apprentice practice of welding joints in the horizontal (2G), vertical (3G) and overhead (4F) positions.
53. Introduce the apprentice to destructive weld testing techniques.

**Syllabus – Year 4, Semester 1 – P 401**  
**Course Title:**

**Course Performance & Learning Objectives – Module 21 - Cutting and Welding (continued)**

- 54. Demonstrate welding in the overhead position (4G) on steel plate butt joints.
- 55. Supervise the apprentice’s practice of overhead plate welding butt joints.
- 56. Introduce the apprentice to all position welding and the fit up and tacking of pipe.
- 57. Demonstrate welding pipe butt joints in the horizontal fixed (5G) position.
- 58. Conduct destructive testing of groove welded butt joints.
- 59. Supervise apprentice welding pipe in the horizontal fixed (5G) position.
- 60. Discuss the principles associated with shielded metal arc welding stainless steel.
- 61. Determine requirements and lay out parts for the fabrication of brackets and supports.
- 62. Layout and fabricate according to a drawing.
- 63. Evaluate fabrications using destructive and non-destructive testing to insure accuracy and weld quality.

**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**

Name	Telephone Number	Email Address



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 4, Semester 2 – P 402 Course Title:

Module 22: Advanced Drawing and Blueprint Reading (108 hours)

108 hours (Lecture/Lab)

<b>Class Information</b>	<b>Instructor Information</b>
Day(s) – TBD	Name – TBD
Time – TBD	Phone – TBD
Room – TBD	Email – TBD
Day(s) – TBD	Name – TBD
Time – TBD	PH: (408) 453-6330
Room – TBD	Email – TBD

### Resources

1. American Technical Publishers, Inc., “Printreading for Residential and Light Commercial Construction Part 2”, Fourth Edition, 2005.
2. American Technical Publishers, Inc., “Plumbing – Design and Installation”, Second Edition, L.V. Ripka.
3. International Pipe Trades Joint Training Committee, Inc., “Advanced Plan Reading and Related Drawing for United Association Journeymen and Apprentices”, 1999.

### Course Performance & Learning Objectives – Module 22 - Advanced Drawing and Blueprint Reading

1. Describe basic print reading concepts.
2. Identify common types of drawings.
3. Discuss different types and styles of lines.
4. Describe size description for prints.
5. Describe shape descriptions of prints.
6. Describe written descriptions for prints.
7. Identify print conventions.
8. Identify standard symbols for plumbing that would be used on a construction print.
9. Identify standard electrical symbols for that would be used on a construction print.
10. Describe HVAC symbols that would appear on a construction print.
11. Identify standard architectural symbols that would be used on a construction print.
12. Identify standard plot plan symbols that would be used on a construction print.
13. Identify standard line types that would be used on a construction print.
14. Describe symbols used on prints for wood construction materials.

**Syllabus – Year 4, Semester 2 – P 402**

**Course Title:**

**Course Performance & Learning Objectives – Module 22 - Advanced Drawing and Blueprint Reading (continued)**

15. Identify common types and structural properties of wood.
16. List and describe common types and applications of concrete.
17. Describe common types of masonry construction materials.
18. Explain the function of common types of metal construction materials.
19. List common types of insulation used in building construction.
20. Identify common types of glass products used in building construction.
21. Describe the uses of gypsum products in construction.
22. List common materials used in roofing.
23. Describe common components of electrical systems.
24. List and describe common components used in mechanical systems.
25. Identify fundamental principles of platform framing.
26. Describe common methods of frame construction in addition to platform framing.
27. Identify fundamental principles in monolithic concrete construction.
28. List and describe common types of unit masonry construction.
29. Identify fundamental principles of metal framing.
30. Describe regional considerations for light frame construction.
31. Identify key elements used as a reference when reading plans for the multifamily dwelling.
32. List elements of the multifamily dwelling included in the Site Plan.
33. Identify information contained on the Foundation Plan for the multifamily dwelling.
34. List elements of the multifamily dwelling included on the Penthouse Floor Plan.
35. Describe components of the multifamily dwelling roof design found on the roof plan and details.
36. Describe key components of the multifamily dwelling design found on exterior elevations.
37. Describe types of building information contained on the Section Thru Decks.
38. List information for the multifamily dwelling contained on detail sections and elevations.
39. Describe elements of the multifamily dwelling included on wall and window details.
40. Identify elements included on stairway details for the multifamily dwelling.
41. Describe features that the elevations show for bathrooms and powder rooms of the multifamily dwelling.
42. Describe key components of the design of the commercial building.
43. Identify concrete work specifications for the commercial building.
44. List elements of the rough structure for the commercial building.
45. List and describe building codes that apply to stairways.
46. Identify where information for windows and doors may be found.
47. Describe the operation of the commercial building heating system.
48. Describe key components of the Branch Bank design.
49. List elements of the Branch Bank included on the Site Plan.
50. List elements of the Branch Bank included on the floor plan.
51. Identify information contained in elevations for the Branch Bank.
52. List information found on the foundation plan of the Branch Bank.



**Syllabus – Year 4, Semester 2 – P 402**

**Course Title:**

**Course Performance & Learning Objectives – Module 22 - Advanced Drawing and Blueprint Reading (continued)**

53. Describe components of the Branch Bank steel structure, roof, and lintels.
54. List elements of the Branch Bank included on the sections.
55. Identify information contained on the detail drawings for the Branch Bank.
56. List information for the Branch Bank included on the schedules.
57. Identify information found on the Geometric Plan.
58. List types of information included on the Grading Plan.
59. Describe the contents of the Utility Plan and related project details.
60. Identify common items included on a set of site details.
61. Describe information contained on the Photometric Plan.
62. Identify information found on the Foundation Plan.
63. Describe items found on section drawings.
64. List common information included in structural plans and related details and notes.
65. Identify general information and symbol references found on floor plans.
66. Describe information contained on elevations and schedules related to specific rooms.
67. Describe the purpose of specifications and explain how they are organized according to the CSI MasterFormat™.
68. List items contained in Division 1 – General Conditions of MasterFormat specifications.
69. Describe common elements found in Division 2 – Site Construction of MasterFormat specifications.
70. List items commonly contained in Division 3 – Concrete and Division 4 – Masonry of MasterFormat specifications.
71. Identify common types of information included in Division 5 – Metals of MasterFormat specifications.
72. Describe common elements found in Division 6 – Wood and Plastics of MasterFormat specifications.
73. Identify information commonly included in Division 7 – Thermal and Moisture Protection of MasterFormat specifications.
74. Identify common types of information contained in Division 8 – Doors and Windows of MasterFormat specifications.
75. Describe common elements found in Division 9 – Finishes of MasterFormat specifications.
76. List types of building features and systems contained in Division 10 – specialties of MasterFormat specifications.
77. Describe common elements found in Division 15 – Mechanical of MasterFormat specifications.
78. Describe common elements found in Division 16 – Electrical of MasterFormat specifications.
79. List common types of exterior finish materials included in takeoff.
80. List common types of interior finish materials included in a takeoff.

**Syllabus – Year 4, Semester 2 – P 402**  
**Course Title:**

**Course Performance & Learning Objectives – Module 22 - Advanced Drawing and Blueprint Reading (continued)**

81. Describe items contained in takeoffs for mechanical and electrical systems.
82. Describe basic theory and concepts of Computer Aided Design (CAD).
83. Visually portray CAD applications and its uses in the pipe trades.
84. Identify layout tools.
85. Research layout tools and equipment.
86. Demonstrate ability to use layout tools.
87. Create shop drawings for the commercial building prints.
88. Identify equipment on shop drawing.
89. Describe factors that determine the size of water supply piping.
90. Sizing water supply piping.
91. Describe advanced plan reading and sketching.
92. Discuss sleeve drawing and deck layout.
93. Identify drawing coordination and piping systems design.
94. Describe advanced plan reading and sketching.

**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**

Name	Telephone Number	Email Address



# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 5, Semester 1 – P 501 Course Title:

Module 23: Process Piping Installations (54 hours)  
Module 24: Medical Gas Installations (54 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. International Pipe Trades Joint Training Committee, Inc., “High Purity Piping Training Program”.
2. Ruth Carranza Production, “Silicon Run”, I and II Videos.
3. United Association Medical Gas Certified Instructors, “Certified Medical Gas Systems Installers and Brazer Qualification”- Training Course, 2005.
4. National Fire Protection Association (NFPA), “NFPA 99C Gas and Vacuum Systems”, 2005 Edition.
5. Brazing Workmanship Certification.

### Course Performance & Learning Objectives – Module 23 - Process Piping Installations

1. Identify risks of working with hazardous materials commonly used in high purity piping installations.
2. Describe information, procedures, regulations, and requirements for safely working with hazardous materials in high purity piping installations.
3. Identify risks of working with common process gases found in high purity piping installations.
4. Describe procedures for safely working with and monitoring process gases.
5. Describe basic principles and requirements of high purity water (HPW) production.
6. Describe theory of operation and processes of typical water purification technologies.
7. Define basic principles of contamination control to ensure process and product purity.

**Syllabus – Year 5, Semester 1 – P 501**

**Course Title:**

**Course Performance & Learning Objectives – Module 23 - Process Piping Installations (continued)**

8. Describe physical and chemical properties of common metal alloys used in high purity piping systems.
9. Describe plastics used in high purity piping systems.
10. Describe proper handling, installation and use of plastic piping in high purity water applications.
11. Describe the importance of maintaining high purity standards for process gases and UPW used in the manufacture of semiconductor devices.
12. Describe the pharmaceutical and biotech manufacturing (bio-pharmaceutical) industry utilities and clean steam parameters.
13. Describe the pharmaceutical and biotech manufacturing (bio-pharmaceutical) industry water treatment.
14. Describe the process of microbiological control during pretreatment and final treatment.
15. Describe water system passivation processes.
16. Describe instrumentation, control and monitoring used within pharmaceutical water systems.
17. Describe validation procedures in a pharmaceutical process.
18. Discuss regulations and standards related to the bio-pharmaceutical industry.
19. Administer the final examination.

**Course Performance & Learning Objectives – Module 24 - Medical Gas Installations**

1. Present class overview.
2. Describe gas and vacuum systems.
3. Define Level 1 medical air supply systems.
4. Describe medical-surgical vacuum systems.
5. Describe instrument air supply systems and Level 1 valves.
6. Define station outlets and inlets.
7. Describe manufactured assemblies.
8. Identify pressure and vacuum indicators.
9. Describe Level 1 warning systems.
10. Describe Level 1 distribution.
11. Describe performance criteria and testing.
12. Describe Level 1 support gases.
13. Define Level 2 requirements.
14. Define Level 3 requirements.
15. Review material from sessions 1-10.
16. Give practice exam covering all worksheet material.
17. Administer third party exam.
18. Describe brazing medical gas piping.
19. Identify requirements for brazing qualification test.

**Syllabus – Year 5, Semester 1 – P 501**  
**Course Title:**

**Course Performance & Learning Objectives – Module 24 - Medical Gas Installations (continued)**

- 20. Provide the apprentice with opportunity to gain hands-on-experience by practicing brazing.
- 21. Administer brazing qualification exam.

**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**

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# Commercial Plumbing Apprenticeship Program



## Syllabus – Year 5, Semester 2 – P 501

### Course Title:

- Module 25: Customer Service and Administrative Skills (6 hours)
- Module 26: Pumps and Valves (24 hours)
- Module 27: Tube Bending (12 hours)
- Module 28: Code Review (12 hours)
- Module 29: Special Topics (54 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. Joint Plumbing Apprentice & Journeyman Training, Inc. “A Guide to Service Work”, 1994.
2. International Pipe Trades Joint Training Committee, Inc., “Pipe, fittings, valves, supports and fasteners for United Association Journeyworkers & Apprentices”. Washington, D.C., Author, 2005
3. American Water Works Association, “Water Transmission and Distribution”, Third Ed. Denver, CO, 2003.
4. International Pipe Trades Joint Training Committee, Inc., “Water Supply for United Association Journeyworkers & Apprentices”, Washington, D.C., 2004.
5. International Pipe Trades Joint Training Committee, Inc., “Pumps for United Association Journeymen & Apprentices”, Washington, D.C., 2000.
6. F.J. Callahan, Swagelok Tube Fitters Manual, Swagelok Company, Solon, Ohio USA, 1998.
7. Swagelok—TM Swagelok Company © 1999, 2003 Swagelok Company Printed in U.S.A., “Hand Tube Bender Manual”, GLLMa, [www.swagelok.com/downloads/webcatalogs/EN/MS-13-43.PDF](http://www.swagelok.com/downloads/webcatalogs/EN/MS-13-43.PDF).
8. IAPMO, Uniform Plumbing Code Illustrated Training Manual.
9. IAPMO, Uniform Plumbing Code 2006 Edition, 2005.
10. IAPMO, Uniform Plumbing Code Study Guide, 2006 Edition.
11. American Technical Publishers, Inc., Plumbing Design and Installation, 2<sup>nd</sup> Edition, 2002.
12. International Pipe Trades Joint Training Committee, Inc., Plumbing Fixtures and Appliances, 2001.

## Syllabus – Year 5, Semester 2 – P 501

### Course Title:

#### Course Performance & Learning Objectives – Module 25 - Customer Service and Administrative Skills

1. Describe characteristics of good public and customer relations.
2. Identify communication skills as they relate to providing good customer service.
3. Discuss how professionalism and ethics are demonstrated on the job.
4. Identify office procedures associated with jobsite work.
5. Identify documentation completed as part of each job.
6. Identify ways to comply with job specifications.
7. Discuss basic computer and technology knowledge.

#### Course Performance & Learning Objectives – Module 26 - Pumps and Valves

1. Describe pump applications and operating theory.
2. Define terminology used to assess levels of pump and system operation.
3. Describe the operation of various pump designs including:
  - a. Identifying the two basic classifications of pumps.
  - b. Describing the basic operation of reciprocating type pumps.
  - c. Describing the basic operation of rotary type pumps.
  - d. Explaining the basic operation of centrifugal pumps.
  - e. Describing the design and operation of various centrifugal pump impellers.
4. Apply general rules for proper pump installation.
5. Install and maintain booster pumps.
6. Install and maintain submersible pumps.
7. Install and maintain ejector pumps.
8. Install and maintain circulating pumps.
9. Install and maintain vacuum pumps
10. Describe the design, operation and maintenance of a compressed air system.
11. Understand the function and ratings of valves.
12. Select general purpose valve designs appropriate for basic operating functions.
13. Describe the characteristics of typical general purpose valves.
14. Identify the common variable features available when ordering valves.
15. Describe the factors that are critical to valve installation.
16. Replace selected valve in a plumbing system.
17. Install system controls in a plumbing system.

## Syllabus – Year 5, Semester 2 – P 501

### Course Title:

#### Course Performance & Learning Objectives – Module 27 - Tube Bending

1. Discuss general tube bending concepts.
2. Discuss tube bending procedures.
3. The apprentice will get hands-on experience with tube bending.

#### Course Performance & Learning Objectives – Module 28 - Code Review

1. Review the purpose, procedures and various types of plumbing system tests.
2. Describe national, state and local standards and model codes.
3. Review general information of UPC.
4. Review basic fittings and hangers and supports common to plumbing systems.
5. Review and understand code sections for UPC, Plumbing Fixtures and Fixture Fittings, Chapter 4.
6. Identify ADA requirements for Plumbing Fixtures and fittings regarding accessibility.
7. Review and understand code sections for UPC, Water Heaters, Chapter 5.
8. Review and understand code sections for UPC, Water Supply and Distribution, Chapter 6.
9. Review and understand code sections for UPC, Sanitary Drainage, Chapter 7.
10. Review and understand code sections for UPC, Indirect Wastes, Chapter 8.
11. Review and understand code sections for UPC, Vents, Chapter 9.
12. Review and understand code sections for UPC, Traps and Interceptors, Chapter 10.
13. Review and understand code sections for UPC, Storm Drainage, Chapter 11.
14. Review and understand code sections for UPC, Fuel Piping, Chapter 12.
15. Review and understand code sections for UPC Chapter 13, Health Care Facilities.
16. Demonstrate knowledge of UPC codes by completing Module 28 Final Exam.

#### Course Performance & Learning Objectives – Special Topics

Apprentices will select two electives from a list of special topics.



**Syllabus – Year 5, Semester 2 – P 501**  
**Course Title:**

**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**

Name	Telephone Number	Email Address

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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

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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

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 #:** PHDA 401

**Course Title:** Adapted Movement

**Credit Status:**

Credit course  
 Noncredit course

**Catalog Description:**

This course is designed for students with disabilities. Provides personal instruction, addressing the individual needs of each student. Will focus on improving muscular strength and endurance, cardiovascular endurance, flexibility, balance and coordination. Will also promote the awareness and application of personal wellness through physical activity.

**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 course provides the student with the opportunity to learn and practice skills needed to improve their overall health and wellbeing. The student will engage in an exercise program developed with their individual needs and abilities in mind. Successful completion of this course will allow the student to thrive and become a more independent and productive member of society.

**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:** Rita O'Loughlin **Date:** 1/28/19

**Division Curriculum Representative:** Ben Schwartzman **Date:** 1/28/19

**Date of Approval by Division Curriculum Committee:** 10/23/18

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



# Submissions Course Outline Editor

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## Student Resource and Support Programs

### PHDA 401 ADAPTED MOVEMENT

[Edit Course Outline](#)

PHDA 401 ADAPTED MOVEMENT

Summer 2019

3 hours laboratory per week.

0 Units

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: Unlimited Repeatability.

Criteria: This is an adapted physical education course serving the needs of students with disabilities. This course will be offered on the Foothill campus and throughout the community. As a result, the student demographics may differ or change depending on the location of the class, as well as the needs, interests, and ability levels of the students. Because this is an adapted course the students taking the course would greatly benefit from repeated practice and participation.

#### 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: 6/8/18

#### Division Dean Information -

Seat Count: 30

Load Factor: .045

FOAP Code: 114000131101083580

#### 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:**

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**Need/Justification -**

This course will be part of the adapted physical education curriculum providing lifelong learning and enrichment opportunities on the Foothill campus and throughout the community. Students will greatly benefit from the opportunity to repeat this noncredit course. The course was developed in response to expressed community interest and needs. The course falls under the area of noncredit, per Title 5, Education Programs for Persons with Substantial Disabilities.

**1. Description -**

This course is designed for students with disabilities. Provides personal instruction, addressing the individual needs of each student. Will focus on improving muscular strength and endurance, cardiovascular endurance, flexibility, balance and coordination. Will also promote the awareness and application of personal wellness through physical activity.

Prerequisite: None

Co-requisite: None

Advisory: None

**2. Course Objectives -**

The student will be able to:

- A. Demonstrate proper technique of exercises.
- B. Perform appropriate muscular strength and endurance exercises for improving daily activities of life.
- C. Demonstrate exercises that improve balance and coordination.
- D. Perform basic flexibility exercises.
- E. Demonstrate the understanding of the benefits of lifelong participation in physical activity.

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

Appropriate classroom for movement activity and appropriate chairs.

**4. Course Content (Body of knowledge) -**

- A. Principles of fitness
  1. Cardiovascular exercise
  2. Muscular strength
  3. Muscular endurance
  4. Flexibility
  5. Balance and coordination
- B. Application of exercise program
  1. Proper breathing technique
  2. Proper exercise technique
  3. Proper body mechanics and posture
  4. Range of motion
- C. Equipment
  1. Dumbbells
  2. Resistance bands
  3. Medicine balls
  4. J-cords
- D. Benefits of participating in lifelong physical activity
  1. Heart disease
    - a. Cardiovascular exercise
    - b. Nutrition and diet
  2. Obesity
    - a. Cardiovascular exercise
    - b. Nutrition and diet

- c. Mobility concerns
  - 3. Inactivity
    - a. Heart disease and stroke
    - b. Mobility concerns
    - c. Mental health
- E. Application of appropriate personal fitness program
  - 1. Cardiovascular exercise development
  - 2. Muscular strength and endurance development
  - 3. Balance and coordination activities
  - 4. Basic flexibility exercises
  - 5. Recreational activities

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

**6. Methods of Evaluation -**

- A. Written self-evaluation
- B. Measurable progress on SEC

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

Instructor-prepared materials.

**8. Disciplines -**

Physical Education (Adapted): Disabled Student Programs and Services

**9. Method of Instruction -**

Instructor discussion, demonstration and interaction

**10. Lab Content -**

During the periods of instruction the student will be:

- A. Demonstrating proper warm up activities
- B. Demonstrating skill by performing each exercise with awareness and the application of proper technique

**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 -**

Optional reading and writing assignments as recommended by instructor.

Courses not Taught in Four Years - 2019 list

Division	Course Number	Short Title	Extension granted in 2016	Extension granted last time - 2017 (if applicable)	Note
SRC	ALCB_F223.	CAREER RESOURCES			
SRC	ALCB_F413.	RELAXATION TECHNIQUES			
SRC	ALLD_F206.	PARAGRAPH REMEDIATION			
SRC	ALLD_F210.	UNDERSTAND LEARNING DIFFER			
BSS	ANTH_F067B	CULTURES OF THE WORLD: BELIZE			
APPR	APPR_F159.	ADVANCED ARC WELDING			
APPR	APPR_F166.	JOB SUPERVISION			
APPR	APPT_F121.	INTRO TO RESID PLUMB/SAFETY/TO	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F122.	RESIDENTIAL DRAINAGE SYSTEMS	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F123.	RESIDENTIAL GAS & WATER INSTAL	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F124.	MATHEMATICS FOR RESIDENTIAL PL	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F125.	RESIDENTIAL BLUEPRINT READING	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F126.	RESID PIPING LAYOUT/INSTALL/FI	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F127.	RESIDENTIAL PLUMBING CODE	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APPT_F128.	RESIDENTIAL GAS INSTALL;SERV W	Yes	Approved 3/21; will be offered winter 2018 or spring 2018	
APPR	APRT_F111.	COMPTR LITRCY/TRADE APPRENTICE	Yes	Granted carryover approval from 2016	
APPR	APRT_F144A	INTRO MARINE SHT MTL TRAINING	Yes	Granted carryover approval from 2016	
APPR	APRT_F144B	INTRO MARINE SHT MTL TRAINING	Yes	Approved 3/21; will be offered winter 2018	
APPR	APRT_F151A	INTMED MARINE SHT MTS TRAINNG	Yes	Approved 3/21; will be offered winter 2018	
APPR	APRT_F155A	SAFETY/TOOLS SHT MTL, SID, DK	Yes	Approved 3/21; will be offered winter 2018	
APPR	APRT_F155B	BLUPRNT RDG/SHT MTL, SID, DK	Yes	Approved 3/21; will be offered winter 2018	
APPR	APRT_F156A	WELDING/SHT MTL, SIDNG, DECKIN	Yes	Approved 3/21; will be offered winter 2018	
APPR	APRT_F156B	MEAS/DRWNG/LFTNG SHT MTL,SD,DK	Yes	Approved 3/21; will be offered winter 2018	

Courses not Taught in Four Years - 2019 list

<b>Division</b>	<b>Course Number</b>	<b>Short Title</b>	<b>Extension granted in 2016</b>	<b>Extension granted last time - 2017 (if applicable)</b>	<b>Note</b>
APPR	APSM_F130.	SMQ-30 ADVANCED WELDING			
APPR	APSM_F134.	SMQ-34 ADVANCED LAYOUT FABRICA			
APPR	APSM_F135.	SMQ-35 PROJECT MGMT/TAKEOFFS/E			
APPR	APSM_F137.	SMQ-37 FINAL HVAC PROJECT			
APPR	APSM_F138.	SMQ-38 FINAL ARCHITEC/INDUST/O			
FA	ART_F072R	INDEPENDENT STUDY IN ART			
PSME	ASTR_F077.	SEMINAR EXCITING TOPICS ASTR			
KA	ATHL_F011C	FUNC FITNESS MEN'S BASKETBALL			
KA	ATHL_F011E	INTRCLG BASKETBALL (MEN)			
KA	ATHL_F011F	INTERCOLLEGIATE BSKTBALL II ME			
KA	ATHL_F012C	FUNC FITNESS WMN'S BASKETBALL			
KA	ATHL_F012E	INTRCLG BASKETBALL (WOMEN)			
KA	ATHL_F012F	INTRCLG BASKETBALL II (WOMEN)			
KA	ATHL_F021E	INTERCOLLEGIATE SOCCER (MEN)			
KA	ATHL_F022E	INTERCOLLEGIATE SOCCER (WOMEN)			
KA	ATHL_F032B	SPORT TECH/COND SWIMMING			
KA	ATHL_F032E	INTERCOLLEGIATE SWIM (MEN&WOM)			
KA	ATHL_F033E	INTERCOLLEGIATE WATER POLO (WM			
KA	ATHL_F042A	PRESEASON COND WMN'S VOLLEYBAL			
KA	ATHL_F042B	SPORT TECH/COND WMN'S VOLLEYBA			
KA	ATHL_F042E	INTERCOLLEGIATE VOLLEYBALL(WMN			
KA	ATHL_F044E	INTERCOLLEGIATE TENNIS (MEN)			
KA	ATHL_F045E	INTERCOLLEGIATE TENNIS (WOMEN)			
KA	ATHL_F073R	INDEPENDENT STUDY IN ATHLETICS			
BSS	BUSI_F054H	HONORS INSTITUTE SEMINAR BUSIN			
BSS	BUSI_F062.	PRINCIPLES OF SALESMANSHIP			
PSME	C S_F054C	VMWARE VIEW			
PSME	C S_F056A	ENTERPRISE WIRELESS LAN			
PSME	C S_F061A	WINDOWS 8 CONFIGURATION			
PSME	C S_F084A	DB-DRIVEN WEB APP DEVLPMNT			
PSME	CHEM_F070.	STUDY SKILLS/PROB-SOLV STRAT			

Courses not Taught in Four Years - 2019 list

Division	Course Number	Short Title	Extension granted in 2016	Extension granted last time - 2017 (if applicable)	Note
CNSL	CNSL_F090A	INTRO LEADERSHIP INDEP STUDY			
CNSL	CNSL_F090B	LEADERSHIP INDEP STUDY II			
CNSL	CNSL_F090C	LEADERSHIP INDEP STUDY III			
FA	COMM_F054A	FORENSIC SPEECH		Approved 3/21; will be offered spring 2017	
FA	COMM_F070R	INDEPENDENT STUDY COMM STUDIES			
FA	COMM_F071R	INDEPENDENT STUDY COMM STUDIES			
FA	COMM_F072R	INDEPENDENT STUDY COMM STUDIES			
FA	COMM_F073R	INDEPENDENT STUDY COMM STUDIES			
KA	DANC_F008.	DANCE PRODUCTION:REHEARSAL & P			
KA	DANC_F070R	INDEPENDENT STUDY IN DANCE			
KA	DANC_F071R	INDEPENDENT STUDY IN DANCE			
KA	DANC_F072R	INDEPENDENT STUDY IN DANCE			
KA	DANC_F073R	INDEPENDENT STUDY IN DANCE			
BHS	DMS_F071R	INDEPENDENT STUDY IN DMS			
BHS	DMS_F072R	INDEPENDENT STUDY IN DMS			
BHS	DMS_F073R	INDEPENDENT STUDY IN DMS			
LA	ESLL_F246.	APPLIED GRAMMAR/EDIT SKILLS			
LA	ESLL_F250.	RHETORICAL GRAMMAR FOR ESLL			
BSS	GEOG_F011.	INTRO MAPPING & SPATIAL REASON			
BSS	GEOG_F012.	INTRO GEOSPATIAL TECHNOLOGY			
BSS	HIST_F016.	INTRODUCTION TO ANCIENT ROME			
BSS	HIST_F016H	HONORS INTRO TO ANCIENT ROME			
BSS	HIST_F019.	HISTORY OF ASIA:CHIN/JAP			
BSS	HIST_F054H	HONORS INSTITUTE SEMINAR HIST		Approved 3/21; will be offered winter 2018 or spring 2018	
BHS	HORT_F090E	HORT & LANDSCAPE PHOTOGRAPHY			
BHS	HORT_F090K	LANDSCAPING WITH EDIBLES			
BHS	HORT_F090L	PLANT PROPAGATION:BASIC SKILLS			
APPR	JRYM_F101A	BASIC ELEC SHT MTL A/C	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	

Courses not Taught in Four Years - 2019 list

Division	Course Number	Short Title	Extension granted in 2016	Extension granted last time - 2017 (if applicable)	Note
APPR	JRYM_F101B	ADV ELEC SHT MTL A/C	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F102A	BASIC REFRIG SHT MTL A/C			
APPR	JRYM_F102B	ADV REFRIG SHT MTL A/C	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F103A	AIR DISTRIB SHT MTL A/C	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F103B	REFRIG THRY SHT MTL A/C	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F104.	SHT MTL JOURNEY LEVEL UPGRADE			
APPR	JRYM_F152A	HVAC BASIC SYS SHT MTL JRNYPRS	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F154.	RECIPROCATING REFRIGERATION	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F155A	BASIC ELEC SHT MTL A/C JRNYPRS	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F157.	HAZ MAT TRNG/TRADES	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F158.	HAZ MAT RECERT/TRADES	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F165.	PRE-AP INTRO SHEET METAL	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F166A	MARINE SHT METAL TRAIN I	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F166B	MARINE SHT METL TRAIN II	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F168A	JRYMLEVEL DIGITAL SYS I	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F168B	JRYMLEVEL DIGITAL SYS II	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	

Courses not Taught in Four Years - 2019 list

Division	Course Number	Short Title	Extension granted in 2016	Extension granted last time - 2017 (if applicable)	Note
APPR	JRYM_F169A	FIELD MEASURE& LAYOUT I	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F170A	ADV SHT MTL SERVICE I	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F170B	ADV SHT MTL SERVICE II	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F171B	SPECIAL CAD SM JOURNEY II			
APPR	JRYM_F171C	SPECIAL CAD SM JOURNEY III		Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F171D	SPECIAL CAD SM JOURNEY IV	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F172A	ELEC SYS OPER CONTRL DEV-JRYM	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F172B	HVAC TEST/BAL PROC-JRYM	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F173A	AIR DIST/MFG SYSTMS-JRYM	Yes	Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F173B	SYS TNST/TRBLSHOOTNG-JRYM		Approved 3/21; will be offered fall 2017, winter 2018 or spring 2018	
APPR	JRYM_F174A	ADVANCED WELDING			
KA	KINS_F055.	INTRO TO AQUATIC EXERCISE			
KA	KINS_F072R	INDEPENDENT STUDY KINESIOLOGY			
KA	KINS_F073R	INDEPENDENT STUDY KINESIOLOGY			
KA	KINS_F082.	APPLIED PRINC ADAPTIVE FITNESS			
KA	KINS_F083.	PHYSICAL DIMENSIONS OF AGING			
KA	KINS_F084.	FUNCTION FITNESS & ADAPT MOVEM			
KA	KINS_F085.	PRINC OF ADAPTIVE WATER EXERC			
BSS	LINC_F070A	WEB PAGE DESIGN I			
BSS	LINC_F072C	ADOBE INDESIGN I			
BSS	LINC_F085A	ADOBE FLASH I		Approved 3/21; will be offered spring 2017	
BSS	LINC_F085C	ADOBE FLASH OVERVIEW			



Courses not Taught in Four Years - 2019 list

Division	Course Number	Short Title	Extension granted in 2016	Extension granted last time - 2017 (if applicable)	Note
BSS	LINC_F086.	SCREENCASTING OVERVIEW		Approved 3/21; will be offered fall 2018	
PSME	MATH_F042.	MATH FOR ELEMENTARY TEACH			
FA	MDIA_F009.	GLOBAL MEDIA			
FA	MDIA_F032.	MOTION GRAPHICS			
FA	MDIA_F040.	DIGITAL SOUND, VIDEO & ANIMATI			
FA	MDIA_F051.	WEB VIDEO			
FA	MDIA_F081B	SOUND DESIGN FOR FILM/VIDEO		Approved 3/21; will be offered fall 2017	
FA	MUS_F002F	HISTORY OF AMERICAN MUSICAL TH			
FA	MUS_F007E	HISTORY OF THE BLUES	Yes	Approved 3/21; will be offered fall 2017	
FA	MUS_F041.	LIVE MUSIC PERFORMANCE WORKSHO	Yes	Approved 3/21; will be offered TBD	
FA	MUS_F072R	INDEPENDENT STUDY MUS/MUS TECH			
				Approved 3/21; will be offered summer 2018 at the latest	
LA	NCEL_F402.	VOCATNL ESL FOR AH:GERIATRIC H			
LA	NCEL_F403B	TRANSTN TO COLLEGE ESL PART II			
LA	NCEL_F447.	ADV VOCAB DEVL P READNG/WRITING			Formerly ESLL 247
SRC	PHDA_F022.	TEAM SPORTS SPEC POPULATIONS			
KA	PHED_F013B	ADVANCED WATER POLO			
KA	PHED_F024B	SKILLS OF GOLF COURSE PLAY			
KA	PHED_F026D	INTERMEDIATE DOUBLES TENNIS			
KA	PHED_F026E	ADVANCED DOUBLES TENNIS			
KA	PHED_F026F	AEROBIC TENNIS			
KA	PHED_F031D	TOURNAMENT FUTSOL: INDR SOOCER			
KA	PHED_F038D	INTERMEDIATE BASKETBALL			
KA	PHED_F038E	ADVANCED BASKETBALL			
KA	PHED_F040B	ADVANCED VOLLEYBALL			
KA	PHED_F041C	INTRM INDOOR CYCLE:HILLS/SPR			
KA	PHED_F071R	INDEPENDENT STUDY PHYSICAL EDU			
KA	PHED_F072R	INDEPENDENT STUDY PHYSICAL EDU			
KA	PHED_F073R	INDEPENDENT STUDY PHYSICAL EDU			
FA	PHOT_F078A	LANDSCAPE FIELD STUDY IN PHOTO			

Courses not Taught in Four Years - 2019 list

Division	Course Number	Short Title	Extension granted in 2016	Extension granted last time - 2017 (if applicable)	Note
BSS	POLI_F054H	HONORS INSTITUTE SEMINAR POLI			Approved 3/21; will be offered winter 2018 or spring 2018
PSME	PSE_F041.	CLASS PRACTICES: MIDDLE SCHOOL			
PSME	PSE_F042.	CLASS PRACTICES:ELEMENTARY SCI			
PSME	PSE_F043.	CLASS PRACTICES: HIGH SCHOOL S			
BHS	R T_F071.	ADV CLINICAL EXPER:MRI	Yes		Granted carryover approval from 2016
BSS	SOSC_F071R	INDEPENDENT STUDY SOCIAL SCIEN			
BSS	SOSC_F072R	INDEPENDENT STUDY SOCIAL SCIEN			
BSS	SOSC_F073R	INDEPENDENT STUDY SOCIAL SCIEN			
LA	SPAN_F010A	SPANISH FOR HERITAGE SPEAKERS	Yes		Approved 3/21; will be offered spring 2017
FA	THTR_F071R	INDEPENDENT STUDY THEATRE ARTS			
BSS	WMN_F070R	INDEPENDENT STUDY WMN'S STUDIE			
BSS	WMN_F071R	INDEPENDENT STUDY WMN'S STUDIE			
BSS	WMN_F072R	INDEPENDENT STUDY WMN'S STUDIE			
BSS	WMN_F073R	INDEPENDENT STUDY WMN'S STUDIE			

## **Update to English Proficiency Statement**

At their meeting on January 25, 2019, the English department approved a new English proficiency statement, for use on Course Outlines of Record (CORs) across campus.

### **Current statement (used in 2018-19 catalog):**

Demonstrated proficiency in English by placement as determined by score on the English placement test OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.

### **New statement (effective spring 2019 quarter):**

Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.

### **The following CORs include the English proficiency statement and will need to be updated:**

#### **As a prerequisite:**

CRWR 6, 39A

ENGL 1A, 1AH

THTR 2A, 2B

#### **As an Advisory statement:**

BIOL 8

BUSI 11, 18, 70, 87, 90A, 95, 96

CHLD 51A

COMM 1A, 1B, 2, 3, 4, 10, 12, 54A, 55

C S 1B, 2B, 3B, 3C

CNSL 6

CRWR 25A, 41A

ECON 1A, 1B, 9

ENGL 5, 7, 8, 11, 12, 14, 17 18A, 22, 24, 31, 34C, 37, 40, 41, 49, 50C, 80

GEOG 1, 2, 5, 10

HIST 3A, 3B, 3C, 4A, 4B, 4C, 8, 9, 10, 16, 17A, 17B, 17C, 18, 19, 20

HUMN 58

JRNL 2

MATH 1A, 1B, 1C, 1D, 2A, 2B, 10, 11, 12, 17, 22, 42, 44, 48A, 48B, 48C, 217, 248A

MDIA 11, 12

PHT 200L

PHIL 24, 30

POLI 1, 2, 3, 9, 15

PSYC 21

RSPT 50A

SOSC 1, 2  
SPED 1, 2, 65  
WMN 5, 11, 21

**The following CORs include non-standard language related to English proficiency and might want to consider replacing the current language listed on the COR with the new statement:**

**As a prerequisite:**

ENGL 43A, 43AH, 43B, 43BH, 45A, 45AH, 45B, 45BH, 47A, 47AH, 47B, 47BH

**As an Advisory statement:**

ACTG 1A, 1B, 1BH, 52, 58, 59, 60, 65, 66, 67, 68A, 68B, 68C, 75, 76  
CNSL 86, 87, 88, 89

[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