College Curriculum Committee Meeting Agenda
Tuesday, May 28, 2024
2:00 p.m. – 3:30 p.m.
Administrative Conference Room 1901; virtual option via Zoom

Item	Time*	Action	Attachment(s)	Presenter(s)
1. Minutes: May 14, 2024	2:00	Action	#5/28/24-1	Kaupp
2. Report Out and Check-in	2:02	Discussion		All
3. Public Comment on Items Not on Agenda (CCC cannot discuss or take action)	2:12	Information		
4. Announcements a. New Course Proposals b. Division Reps for 2024-25	2:17	Information	#5/28/24-2–42	CCC Team
5. New Degree Application: Public Health ADT	2:30	2nd Read/ Action	#5/28/24-43	Kaupp
6. New Certificate Application: Archaeological Field Work	2:33	2nd Read/ Action	#5/28/24-44	Kaupp
7. GE Application: Area V: Sheet Metal Apprenticeship Program	2:38	2nd Read/ Action	#5/28/24-45	Kaupp
8. GE Application: Area VII: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1)		2nd Read/ Action	#5/28/24-46	Kaupp
9. GE Application: Area VII: Sheet Metal Apprenticeship Program		2nd Read/ Action	#5/28/24-47	Kaupp
10. New Certificate Application: Retail Operations Specialist	2:43	1st Read	#5/28/24-48	Kaupp
11. Stand Alone Application: ALTW 434	2:48	1st Read	#5/28/24-49	Kaupp
12. GE Application: Area V: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1)	2:51	1st Read	#5/28/24-50	Kaupp
13. GE Application: Area V: Steamfitting and Pipefitting Technology Apprenticeship Program		1st Read	#5/28/24-51	Kaupp
14. GE Application: Area VI: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1)		1st Read	#5/28/24-52	Kaupp
15. GE Application: Area VII: Steamfitting and Pipefitting Technology Apprenticeship Program		1st Read	#5/28/24-53	Kaupp
16. Streamlining Student Graduation Petition Process (follow-up to resolution)	2:57	Discussion		Connell/Lee
17. Quarter vs. Semester	3:07	Discussion		Kaupp
18. CCC Priorities for 2024-25	3:17	Discussion		Kaupp
19. Good of the Order	3:27			Kaupp
20. Adjournment	3:30			Kaupp

**Times listed are approximate*

Attachments:

#5/28/24-1	Draft Minutes: May 14, 2024
#5/28/24-2–42	New Course Proposals: APEL 119A, EMS 60C, EMS 61C, EMS 62C, LINC 51C, LINC 51D, MTEC 76A, MTEC 449, MTEC 450A, MTEC 451A, MTEC 451B, MTEC 451C, MTEC 452A, MTEC 452B, MTEC 453A, MTEC 454A, MTEC 455A, MTEC 455B, MTEC 455C, MTEC 457A, MTEC 457B, MTEC 457C, MTEC 460A, MTEC 462A, MTEC 462B, MTEC 462C, MTEC 470A, MTEC 470B, MTEC 470C, MTEC 470D, MTEC 470E, MTEC 470F, MTEC 472B, MTEC 472C, MTEC 480A, MTEC 482A, MTEC 486A, MTEC 488A, MTEC 488B, MTEC 488C, MTEC 490A
#5/28/24-43	New Degree Application: Public Health ADT
#5/28/24-44	New Certificate Application: Archaeological Field Work
#5/28/24-45	Foothill General Education Application for Area V—Communication & Analytical Thinking: Sheet Metal Apprenticeship Program
#5/28/24-46	Foothill General Education Application for Area VII—Lifelong Learning: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)
#5/28/24-47	Foothill General Education Application for Area VII—Lifelong Learning: Sheet Metal Apprenticeship Program
#5/28/24-48	New Certificate Application: Retail Operations Specialist
#5/28/24-49	Stand Alone Application: ALTW 434
#5/28/24-50	Foothill General Education Application for Area V—Communication & Analytical Thinking: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)
#5/28/24-51	Foothill General Education Application for Area V—Communication & Analytical Thinking: Steamfitting and Pipefitting Technology Apprenticeship Program
#5/28/24-52	Foothill General Education Application for Area VI—United States Cultures & Communities: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)
#5/28/24-53	Foothill General Education Application for Area VII—Lifelong Learning: Steamfitting and Pipefitting Technology Apprenticeship Program

2023-2024 Curriculum Committee Meetings:

Fall 2023 Quarter	Winter 2024 Quarter	Spring 2024 Quarter
~~10/3/23~~	~~1/16/24~~	~~4/16/24~~
~~10/17/23~~	~~1/30/24~~	~~4/30/24~~
~~10/31/23~~	~~2/13/24~~	~~5/14/24~~
~~11/14/23~~	~~2/27/24~~	5/28/24
~~11/28/23~~	~~3/12/24~~	6/11/24

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

2023-2024 Curriculum Deadlines:

~~*12/1/23*~~	Deadline to submit courses to CSU for CSU GE approval (Articulation Office).
~~*12/1/23*~~	Deadline to submit courses to UC/CSU for IGETC approval (Articulation Office).

~~*4/19/24*~~	Deadline to submit curriculum sheet updates for 2024-25 catalog (Faculty/Divisions).
6/1/24	Deadline to submit new/revised courses to UCOP for UC transferability (Articulation Office).
6/21/24	Deadline to submit course updates and local GE applications for 2025-26 catalog (Faculty/Divisions).
Ongoing	Submission of courses for C-ID approval and course-to-course articulation with individual colleges and universities (Articulation Office).

Distribution:
Micaela Agyare (LRC), Chris Allen (Dean, APPR), Ben Armerding (LA), Jeff Bissell (KA), Sam Bliss (De Anza AVP Instruction), Cynthia Brannvall (FAC), Rachelle Campbell (HSH), Zach Cembellin (Dean, STEM), Anthony Cervantes (Dean, Enrollment Services), Sam Connell (BSS), Stephanie Crosby (Dean, SRC), Cathy Draper (HSH), Angie Dupree (BSS), Kelly Edwards (KA), Jordan Fong (FAC), Valerie Fong (Dean, LA), Evan Gilstrap (Articulation Officer), Stacy Gleixner (VP Instruction), Kurt Hueg (Administrator Co-Chair), Maritza Jackson Sandoval (CNSL), Ben Kaupp (Faculty Co-Chair), Andy Lee (CNSL), Don Mac Neil (KA), Brian Murphy (APPR), Tim Myres (APPR), Teresa Ong (AVP Workforce), Sarah Parikh (STEM), Eric Reed (LRC), Richard Saroyan (SRC), Amy Sarver (LA), Paul Starer (APPR), Shae St. Onge-Cole (HSH), Kyle Taylor (STEM), Mary Vanatta (Curriculum Coordinator), Voltaire Villanueva (AS President), Catherina Wong (De Anza CCC Faculty Co-Chair), Erik Woodbury (De Anza AS President)

Updated 4/16/24

COLLEGE CURRICULUM COMMITTEE

Committee Members – 2023-24

Meeting Date: 5/28/24

Co-Chairs (2)

✔*	Ben Kaupp	408-874-6380	Vice President, Academic Senate (tiebreaker vote only) kauppben@fhda.edu
✔*	Kurt Hueg	7179	Associate Vice President of Instruction huegkurt@fhda.edu

Voting Membership (1 vote per division)

✔	Micaela Agyare	7086	LRC	agyaremicaela@fhda.edu
	Ben Armerding	7453	LA	armerdingbenjamin@fhda.edu
	Jeff Bissell	7663	KA	bisselljeff@fhda.edu
✔*	Cynthia Brannvall	7477	FAC	brannvallcynthia@fhda.edu
	Zach Cembellin	7383	Dean—STEM	cembellinzachary@fhda.edu
✔*	Sam Connell	7197	BSS	connellsamuel@fhda.edu
✔*	Cathy Draper	7249	HSH	drapercatherine@fhda.edu
✔*	Angie Dupree		BSS	dupreeangelica@fhda.edu
✔	Kelly Edwards	7327	KA	edwardskelly@fhda.edu
✔*	Jordan Fong	7272	FAC	fongjordan@fhda.edu
✔	Valerie Fong	7135	Dean—LA	fongvalerie@fhda.edu
✔*	Evan Gilstrap	7675	Articulation	gilstrapevan@fhda.edu
	Maritza Jackson Sandoval	7409	CNSL	jacksonsandovalmaritza@fhda.edu
✔*	Andy Lee	7783	CNSL	leeandrew@fhda.edu
	Brian Murphy		APPR	brian@pttc.edu
✔*	Tim Myres		APPR	timm@smw104jatc.org
✔*	Sarah Parikh	7748	STEM	parikhsarah@fhda.edu
✔*	Eric Reed	7091	LRC	reederic@fhda.edu
✔	Richard Saroyan	7232	SRC	saroyanrichard@fhda.edu
✔	Amy Sarver	7459	LA	sarveramy@fhda.edu
	Shae St. Onge-Cole	7818	HSH	stonge-coleshaelyn@fhda.edu
✔*	Kyle Taylor	7126	STEM	taylorkyle@fhda.edu

Non-Voting Membership (4)

			ASFC Rep.	
✔*	Mary Vanatta	7439	Curr. Coordinator	vanattamary@fhda.edu
			Evaluations	
			SLO Coordinator	

Visitors

Chris Allen*, Gina Firenzi, Patricia Gibbs, Matthew Hajny, Andrew Stafford, Paul Starer

** Indicates in-person attendance*

College Curriculum Committee
Meeting Minutes
Tuesday, May 14, 2024
2:00 p.m. – 3:30 p.m.
Administrative Conference Room 1901; virtual option via Zoom

Item	Discussion
1. Minutes: April 30, 2024	**Approved by consensus.**
2. Report Out and Check-in	**Speaker: All** Apprenticeship: Myres shared continuing to work on GE apps. BSS: Dupree mentioned new course proposals and cert. on today's agenda; working on Title 5 updates. Counseling: Jackson Sandoval shared feedback from division faculty re: GE recommendations doc: in agreement w/ sections 1 & 3, and encourage aligning w/ De Anza in keeping Natural Sciences lab requirement (section 2). Fine Arts & Comm: J. Fong shared reps surveyed division faculty re: GE recommendations doc: 90% agree that Lifelong Learning important and 80% agree it be kept as requirement. Shared details of specific questions from faculty re: specifics of Lifelong Learning requirement. Working on Title 5 updates and new noncredit courses. HSH: Draper shared EMS dept. working on new course. Kinesiology & Athletics: Bissell shared division faculty definitely in favor of keeping Lifelong Learning. Working on new badminton courses. Language Arts: Sarver shared working on Title 5 updates. Noted general consensus among division faculty in support of keeping Lifelong Learning. LRC: Reed shared 100% of division faculty support GE recommendations doc. STEM: Taylor shared working on Title 5 updates. Noted division faculty in favor of keeping Natural Sciences lab requirement. SRC: Saroyan shared division faculty support Lifelong Learning, but hasn't conducted any sort of formal survey. Gilstrap mentioned recently shared CSU GE & IGETC results, noting that if faculty wish to resubmit (for next cycle) any course which was denied, he can work with them to update COR. Mentioned Common Course Numbering faculty convenings next month and ASCCC survey on the topic, which Gilstrap shared w/ faculty of Phase 1 courses. Noted that any faculty wishing to participate in convenings should notify Academic Senate President Voltaire Villanueva, as local Senate needs to confirm participation ahead of time. Hueg asked if Phase 1 is six courses—yes. Asked about timeline—Gilstrap responded, doing his best to keep Phase 1 depts. updated; current timeline: convenings in June, then template for each Phase 1 course will be created (target date of Aug. 15). Faculty will update courses based on templates, but not yet known what the process will be for submission (e.g., for UC transfer approval). Gilstrap stressed that convenings important for

	faculty to attend, because decisions will be made re: required language/COR elements to include on templates, among other things.
3. Public Comment on Items Not on Agenda	No comments.
4. Announcements a. New Course Proposals	**Speakers: CCC Team** The following proposals were presented: ANTH 15H; APEL 126A, 128A; BUSI 30; C S 11A, 12A; CRWR 425A; ECON 25H; MUS 401; NCEN 407, 412A, 422, 427G, 438, 440, 449, 450C, 480; SPAN 51C; THTR 426, 448F. Reps provided additional info about courses being proposed for their division; some mentioned inter-dept./division discussions taking place. Reed mentioned STEM division exploring creation of bachelor degree related to AI. Sarver noted noncredit proposals from Language Arts division all mirrored versions of existing credit courses. Brannvall noted the same for noncredit proposals from Fine Arts & Comm division. Sarver shared Spanish dept. might be creating cert. related to courses for health care workers. Hueg asked if Theatre Arts dept. creating noncredit cert. for new noncredit CTE courses—reps unsure. Connell commended all of the faculty working on new courses!
b. Building Trades Management BS Degree Title Change	Vanatta shared that BS degree being created by Apprenticeship division has had a second title change since it was approved by CCC in June, 2023. Original title was Industrial Technology and Building Construction Management. Re-approval by CCC not needed; this is simply an info item. Allen noted degree was resubmitted to the state in January and title change was based on feedback received.
c. CCCCO Approval of Semiconductor Processing CA!	Vanatta shared we recently received state approval for our Semiconductor Processing CA!
d. Spring Plenary Update	Packet of resolutions adopted at recent state-wide plenary.
5. Recommendations for Revisions of Local General Education Requirements	**Speaker: Ben Kaupp** Second read of document. Section 1 has been updated since first read, to make clear that recommendation is to lower the requirement for Lifelong Learning to at least one course. Brannvall shared questions from division faculty: who is making these recommendations; can GE requirements be dept. specific—Kaupp responded, CCC making recommendation to Academic Senate, who will then make recommendation to the college; GE cannot be dept. specific. Connell shared reps surveyed division faculty: majority in favor of keeping both Lifelong Learning and Natural Sciences lab requirement. Shared question: why are we not in dialogue w/ De Anza to align lab requirement—Kaupp responded, we are in dialogue but they haven't made their decision yet. Gilstrap in favor of keeping Lifelong Learning and reducing to at least one course, which gives students the opportunity to choose how they want to fulfill requirement. Reminded the group of the need to discuss total units for new GE pattern, noting that if we keep Lifelong Learning (1-4 unit range), total will be 31-39 units. Current Foothill GE is 30-44 units. Parikh asked if this incl. lab for Natural Sciences—Gilstrap responded, yes. Mathews provided perspective as faculty teaching a course specifically focused on GE (noted many Foothill GE science courses usually taken by students as part of their major). Background as a science educator, and has a lot of experience in teaching the process of scientific reasoning to people who aren't necessarily interested in science. Believes lab component is critical for teaching students how to apply the skills they're learning in lecture, and pointed out how it supports

	Foothill's mission of "… [equipping] students with critical thinking skills to address complex societal challenges…" Concerned that discussions at CCC have not touched on what students might be missing if they aren't required to complete a lab, and provided a few examples from his course, incl. students learning how to predict real-world events, such as this past weekend's geomagnetic storm, and critically evaluate ideas they encounter, such as the flat earth myth. For many students, his lab is their first opportunity to work through full scientific process. Asked the group to please consider this in their decision making. Brannvall recalled that CCC's discussions didn't come from a place of not valuing lab, but rather that most Natural Sciences courses have imbedded labs—Mathews responded, most courses with imbedded labs taken by students in the major; argued that those without imbedded labs commonly taken by GE students. Kaupp acknowledged that CCC's discussions have been focused on Lifelong Learning, and perhaps insufficient time spent discussing lab requirement. Discussion occurred about how many students lab requirement may affect, in general; Mathews believes those affected by removal of lab requirement likely to be students in non-science majors. Kaupp suggested new language for section 2: "After thorough evaluation and discussion, we recommend retaining the lab requirement for Natural Sciences courses. This decision is based on our commitment to delivering a rigorous science education that integrates practical, hands-on learning experiences essential for scientific understanding and application. Maintaining the lab component ensures that our students are not only theoretically proficient but also practically skilled, preparing them for further academic pursuits, as well as providing critical thinking skills in life. We believe that preserving this requirement is vital for fostering a deeper engagement with the scientific process and enhancing the overall quality of our science education at Foothill College." Gilstrap stressed the need to align w/ De Anza in any decision we make re: local GE. Kaupp noted this is simply CCC's recommendation to Academic Senate; once De Anza's CCC makes their recommendation, the two Senate Presidents will discuss each college's recommendations. Connell asked for clarification about why Natural Sciences lab requirement is up for discussion—Gilstrap responded, new Title 5 language doesn't require a lab for local GE, so we need to make the decision locally. Parikh noticed that sections 1 & 2 mention aligning w/ De Anza but section 3 does not—Gilstrap responded, section 3 related to moving courses from an area of Foothill's current GE pattern, which does not align w/ De Anza's current GE pattern. Motion to approve with updated language for section 2. Natural Sciences (Area 5) Lab **M/S** (Connell, J. Fong). **Approved.** Kaupp will forward document to Academic Senate for consideration, and share it w/ De Anza's CCC Faculty Co-Chair.
6. New Certificate Application: Pre-STEM	**Speaker: Ben Kaupp** Second read of new Pre-STEM Certificate of Achievement. Parikh mentioned ongoing discussions about Semiconductor apprenticeship program, noting additional stackable certs. may be created and title of this cert. might change. Would like to still move forward with second read today. Hueg mentioned discussions re: submission of cert. to

	BACCC and suggested CCC postpone voting to approve. Parikh doesn't think anything needs to change about cert. and believes CCC can still move forward. Gilstrap mentioned plan to add new MATH 47 course to cert. once it's active, and asked how cert. will be affected if MATH 47 not successful—Cembellin responded, noting we won't be allowed to require students to take MATH 47, but we can require MATH 1A w/ support coreq. Discussion occurred re: cert. title. Hueg doesn't believe there's pushback about the intention of the cert. to prepare students to enter AS degree pathway, but noted question about how this cert. qualifies as workforce/CTE. Parikh believes it is workforce/CTE and mentioned plans to create additional certs. to help prepare students in Semiconductor program. Discussion occurred re: timing of CCC vote; Vanatta noted cert. needs BACCC approval (and Advisory Board recommendation) before it may be sent to FHDA board. Group decided to bring cert. back for another read before voting, after Hueg and Parikh are able to meet and discuss concerns. Third read and possible action will occur at future meeting.
7. GE Application: Area III: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1)	**Speaker: Ben Kaupp** Second read of GE application, which would approve Foothill GE Area III for students who complete the full major requirements for Air Conditioning and Refrigeration Technology (Pathway #1), not one individual course. No comments. Motion to approve items 7-9 **M/S** (Draper, Brannvall). **Approved.**
8. GE Application: Area III: Steamfitting and Pipefitting Technology Apprenticeship Program	**Speaker: Ben Kaupp** Second read of GE application, which would approve Foothill GE Area III for students who complete the full major requirements for Steamfitting and Pipefitting Technology, not one individual course. No comments. *See item 7 for motion/approval details.*
9. GE Application: Area IV: Steamfitting and Pipefitting Technology Apprenticeship Program	**Speaker: Ben Kaupp** Second read of GE application, which would approve Foothill GE Area IV for students who complete the full major requirements for Steamfitting and Pipefitting Technology, not one individual course. No comments. *See item 7 for motion/approval details.*
10. New Degree Application: Public Health ADT	**Speaker: Ben Kaupp** First read of new Public Health ADT. Gilstrap explained that existing Public Health Science ADT changing to Public Health, and we're required to submit as new degree, similar to other ADTs changing to 2.0 versions. Also noted the C-ID descriptors have changed and required resubmission. Hueg asked if there are any changes to the courses—Gilstrap responded, yes, there are a lot; provided examples. Second read and possible action will occur at next meeting.
11. New Certificate Application: Archaeological Field Work	**Speaker: Ben Kaupp** First read of new Archaeological Field Work Certificate of Achievement. No comments. Second read and possible action will occur at next meeting.

12. GE Application: Area V: Sheet Metal Apprenticeship Program	**Speaker: Ben Kaupp** First read of GE application, which would approve Foothill GE Area V for students who complete the full major requirements for Sheet Metal, not one individual course. No comments. Second read and possible action will occur at next meeting.
13. GE Application: Area VII: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1)	**Speaker: Ben Kaupp** First read of GE application, which would approve Foothill GE Area VII for students who complete the full major requirements for Air Conditioning and Refrigeration Technology (Pathway #1), not one individual course. No comments. Second read and possible action will occur at next meeting.
14. GE Application: Area VII: Sheet Metal Apprenticeship Program	**Speaker: Ben Kaupp** First read of GE application, which would approve Foothill GE Area VII for students who complete the full major requirements for Sheet Metal, not one individual course. No comments. Second read and possible action will occur at next meeting.
15. Noncredit/Credit for Prior Learning Workgroup	**Speaker: Kurt Hueg** Hueg recently attended ASCCC noncredit conference, with presentations from state leaders and colleges doing a lot of noncredit. Big push from the state for workforce/CTE mirrored noncredit, to transition students from noncredit to credit pathways. Many colleges also offering other types of noncredit, such as courses for older adults. Foothill needs to decide how we're going to organize and categorize our new noncredit courses. There's still a lack of direction from the CCCCO, to some extent, but we know the general categories of noncredit we're invested in (basic skills, workforce/CTE). Need to establish our own policies on certain aspects; e.g., how to move students taking noncredit into credit pathways and how to grant them credit (via Credit for Prior Learning). Also need to make decisions about standard language to use in course titles and other areas of COR for courses for older adults, to help students easily find such courses in the catalog. And need to discuss what we mean by "mirrored" noncredit; e.g., will we grant credit to students who have taken the noncredit version? Some colleges don't allow for that. Need to establish policy, as well as discuss details about scheduling of mirrored courses. Creating a workgroup to make recommendations to CCC, open to anyone who wants to participate. Kaupp asked who would like to participate: Brannvall, Draper, J. Fong, Sarver. Hueg believes workgroup will also likely discuss Credit for Prior Learning, as it relates to noncredit. Connell asked if workgroup's discussions could impact all the new noncredit courses being created—Hueg responded, yes. Connell asked if these courses the same as community education—Hueg responded, no, community education courses are not formal curriculum.
16. CCC Priorities for 2024-25	**Speaker: Ben Kaupp** Need to determine CCC's priorities for next year. Asked reps to discuss topic with constituents and bring suggestions to next meeting; also asked reps to begin discussing who will serve as CCC reps next year. Gilstrap shared his list of suggestions: discuss pros/cons of changing start of academic year from fall to summer; discuss pros/cons of changing from quarter to semester; additional discussions which need

	to occur re: local GE changes (e.g., modifying/creating GE application forms). Hueg mentioned Common Course Numbering.
17. Good of the Order	
18. Adjournment	**3:28 PM**

Attendees: Chris Allen* (Dean, APPR), Jeff Bissell (KA), Cynthia Brannvall* (FAC), Zach Cembellin* (Dean, STEM), Sam Connell* (BSS), Cathy Draper* (HSH), Angie Dupree* (BSS), Kelly Edwards (KA), Gina Firenzi (APPR), Jordan Fong* (FAC), Valerie Fong* (Dean, LA), Evan Gilstrap* (Articulation Officer), Matthew Hajny (APPR), Kurt Hueg* (Administrator Co-Chair), Maritza Jackson Sandoval* (CNSL), Ben Kaupp* (Faculty Co-Chair), Geoff Mathews* (STEM), Tim Myres* (APPR), Sarah Parikh* (STEM), Ikuko Rakow (LA), Eric Reed* (LRC), Richard Saroyan (SRC), Amy Sarver* (LA), Andrew Stafford (APPR), Paul Starer (APPR), Kyle Taylor* (STEM), Mary Vanatta* (Curriculum Coordinator)
** Indicates in-person attendance*

Minutes Recorded by: M. Vanatta

Course Change Request

New Course Proposal

Date Submitted: 03/26/24 11:58 am

Viewing: **APEL F119A : ORIENTATION TO THE ELECTRICAL TRADE, CPR, FIRST AID & OSHA 10**

Last edit: 05/15/24 1:40 pm

Changes proposed by: Kristina Vennarucci (11056116)

In Workflow

1. 1ED Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 04/16/24 9:08 am Tim Myres (TimM): Approved for 1ED Curriculum Rep

Course Proposal Form

Faculty Author	Kristina Vennarucci		
Effective Term	Summer 2025		
Subject	Apprenticeship: Electrician (APEL)	Course Number	F119A
Department	Apprenticeship (A P)		
Division	Apprenticeship (1ED)		
Units	2		
Hours	40 hours total: 18 hours lecture, 22 hours lab		
Course Title	ORIENTATION TO THE ELECTRICAL TRADE, CPR, FIRST AID & OSHA 10		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Orientating new apprentices to the electrical trade. Introduction of materials and tools of the electrical trade. Ladder, power, and hand tool safety. CPR and First Aid training and certification. OSHA 10 training and certification.
Proposed Discipline	Electricity

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

Certificate of Achievement
AS Degree

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

The SFJATC currently offers this content. Newly indentured apprentices must take this week-long course to fulfill the program CPR, First Aid, and OSHA 10 requirements.

Reviewer Comments

Key: 8971

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 05/13/24 2:38 pm

Viewing: EMS F060C : EMERGENCY MEDICINE SEMINAR I

Last edit: 05/21/24 7:52 am

Changes proposed by: Glenn Kurisu (20546642)

In Workflow

1. **1BH Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/17/24 12:35 pm
   Catherine Draper (drapercatherine): Approved for 1BH Curriculum Rep

Course Proposal Form

Faculty Author	Glenn Kurisu		
Effective Term	Summer 2025		
Subject	Emergency Medical Services (EMT/EMR/ Paramedic) (EMS)	Course Number	F060C
Department	Emergency Medical Services (EMT/EMR/ Paramedic) (EMS)		
Division	Health Sciences and Horticulture (1BH)		
Units	1.5		
Hours	1.5 hours lecture		
Course Title	EMERGENCY MEDICINE SEMINAR I		
Short Title			

Proposed Transferability	CSU Only
Proposed Description and Requisites:	This course provides enrichment of the core curriculum of respiratory and cardiovascular emergencies in emergency medicine. Through a combination of lectures, practical applications, and assessments, students will gain insights from an emergency physician's perspective, enhancing their skills in patient evaluation and management in prehospital and hospital settings. Intended for students in the Paramedic Program; enrollment is limited to students accepted in the program. Corequisite: EMS 60A.
Proposed Discipline	Emergency Medical Technologies

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

This course would be added to the Paramedic AS degree and Certificate.

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

This is the first of a 3 part seminar series from an emergency physician perspective. This class complements the lecture material from EMS 60A.

Reviewer Comments

Key: 9043

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 05/21/24 1:15 pm

Viewing: **EMS F061C : EMERGENCY MEDICINE SEMINAR II**

Last edit: 05/22/24 8:33 am

Changes proposed by: Glenn Kurisu (20546642)

In Workflow

1. **1BH Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 6:36 pm Rachelle Campbell (campbellrachelle): Approved for 1BH Curriculum Rep

Course Proposal Form

Faculty Author	Glenn Kurisu		
Effective Term	Summer 2025		
Subject	Emergency Medical Services (EMT/EMR/ Paramedic) (EMS)	Course Number	F061C
Department	Emergency Medical Services (EMT/EMR/ Paramedic) (EMS)		
Division	Health Sciences and Horticulture (1BH)		
Units	1.5		
Hours	1.5 hours lecture		
Course Title	EMERGENCY MEDICINE SEMINAR II		
Short Title			

Proposed Transferability	CSU Only
Proposed Description and Requisites:	This course provides enrichment of the core curriculum of cardiovascular and medical emergencies in emergency medicine. Through a combination of lectures, practical applications, and assessments, students will gain insights from an emergency practitioner's perspective, enhancing their skills in patient evaluation and management in prehospital and hospital settings. Intended for students in the Paramedic Program; enrollment is limited to students accepted in the program.
Proposed Discipline	Emergency Medical Technologies

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

This course would be added to the Paramedic AS degree and Certificate.

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

This is the second of a 3 part seminar series from an emergency practioner's perspective. This class complements the lecture material from EMS 61A.

Reviewer Comments

Key: 9048

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 05/21/24 1:21 pm

Viewing: EMS F062C : EMERGENCY MEDICINE SEMINAR III

Last edit: 05/22/24 8:34 am

Changes proposed by: Glenn Kurisu (20546642)

In Workflow

1. 1BH Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 6:36 pm Rachelle Campbell (campbellrachelle): Approved for 1BH Curriculum Rep

Course Proposal Form

Faculty Author	Glenn Kurisu		
Effective Term	Summer 2025		
Subject	Emergency Medical Services (EMT/EMR/ Paramedic) (EMS)	Course Number	F062C
Department	Emergency Medical Services (EMT/EMR/ Paramedic) (EMS)		
Division	Health Sciences and Horticulture (1BH)		
Units	1.5		
Hours	1.5 hours lecture		
Course Title	EMERGENCY MEDICINE SEMINAR III		
Short Title			

Proposed Transferability	CSU Only
Proposed Description and Requisites:	This course provides enrichment of the core curriculum of special population, pediatric and trauma emergencies in emergency medicine. Through a combination of lectures, practical applications, and assessments, students will gain insights from an emergency practitioner's perspective, enhancing their skills in patient evaluation and management in prehospital and hospital settings. Intended for students in the Paramedic Program; enrollment is limited to students accepted in the program.
Proposed Discipline	Emergency Medical Technologies

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

This course would be added to the Paramedic AS degree and Certificate.

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

This is the third class of a 3 part seminar series from an emergency practioner's perspective. This class complements the lecture material from EMS 62A.

Reviewer Comments

Key: 9049

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 05/13/24 2:06 pm

Viewing: **LINC F051C : ARTIFICIAL INTELLIGENCE LITERACY & ETHICS IN EDUCATION**

Last edit: 05/20/24 1:00 pm

Changes proposed by: Cassandra Pereira (10209946)

In Workflow

1. **1SS Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/17/24 7:35 am Angelica Dupree (dupreeangelica): Approved for 1SS Curriculum Rep

Course Proposal Form

Faculty Author	Cassandra Pereira		
Effective Term	Summer 2025		
Subject	Learning in New Media Classrooms (LINC)	Course Number	F051C
Department	Learning in New Media Classrooms (LINC)		
Division	Business and Social Sciences (1SS)		
Units	3		
Hours	3 hours lecture per week		
Course Title	ARTIFICIAL INTELLIGENCE LITERACY & ETHICS IN EDUCATION		
Short Title			

Proposed Transferability	CSU Only
Proposed Description and Requisites:	This course introduces educators to the foundational concepts of artificial intelligence, emphasizing its practical and ethical implications in educational settings. Students will explore the evolution of AI, its current applications in learning environments, and critical ethical issues such as data privacy, bias, and equity. The course will combine theoretical learning with case studies and practical exercises to enhance AI literacy among educators. Special emphasis will be placed on developing strategies to integrate AI responsibly in education, ensuring alignment with ethical standards and educational equity.
Proposed Discipline	Instructional Design/Technology

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

C.A. in AI Empowered Instruction (currently in development).

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

This will be a core course for the proposed C.A. in AI Empowered Instruction program, which is currently in development. The program is anticipated to launch in the 25-26 academic year.

Reviewer Comments

Key: 9018

Course Change Request

New Course Proposal

Date Submitted: 05/13/24 2:06 pm

Viewing: **LINC F051D : ARTIFICIAL INTELLIGENCE INTEGRATION IN EDUCATIONAL PRACTICES**

Last edit: 05/20/24 1:00 pm

Changes proposed by: Cassandra Pereira (10209946)

In Workflow

1. **1SS Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/17/24 7:35 am Angelica Dupree (dupreeangelica): Approved for 1SS Curriculum Rep

Course Proposal Form

Faculty Author	Cassandra Pereira		
Effective Term	Summer 2025		
Subject	Learning in New Media Classrooms (LINC)	Course Number	F051D
Department	Learning in New Media Classrooms (LINC)		
Division	Business and Social Sciences (1SS)		
Units	3		
Hours	3 hours lecture per week		
Course Title	ARTIFICIAL INTELLIGENCE INTEGRATION IN EDUCATIONAL PRACTICES		
Short Title			

Proposed Transferability	CSU Only
Proposed Description and Requisites:	This course focuses on practical applications of AI in education, providing educators with the skills needed to select, implement, and evaluate AI tools within the classroom. Students will analyze and evaluate various AI technologies, including machine learning and natural language processing, and engage in hands-on practice to enhance real-world understanding. Topics covered include designing AI-enhanced curricula that improves teaching effectiveness and student learning experiences, troubleshooting AI technologies, and overcoming institutional barriers to technology integration.
Proposed Discipline	Instructional Design/Technology

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

C.A. in AI Empowered Instruction (currently in development).

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

This will be a core course for the proposed C.A. in AI Empowered Instruction program, which is currently in development. The program is anticipated to launch in the 25-26 academic year.

Reviewer Comments

Key: 9019

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/19/24 1:16 pm

Viewing: **MTEC F076A : AUDIO PRODUCT DESIGN & MANAGEMENT**

Last edit: 05/23/24 9:35 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:27 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F076A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	4		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	AUDIO PRODUCT DESIGN & MANAGEMENT		
Short Title			

Proposed Transferability	CSU Only
Proposed Description and Requisites:	Learning the fundamental requirements and tools for designing and guiding the development of audio software. The course will provide an introduction to the different audio software development methodologies being practiced in the industry, an analysis of the sequence of activities an audio product designer needs to perform to bring a product from conception to completion, and an overview of the standard tools used in this craft. Students will ideate in brainstorming sessions and then take a few chosen product ideas through the entire creation lifecycle. Special emphasis will be provided on the real-world hiccups and hurdles an audio product designer may encounter as well as some of the qualities needed to be truly successful in this field.
Proposed Discipline	Commercial Music

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

Music Technology

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

This is a new direction we'd like to pursue within Music Tech. Local employers such as Dolby and Avid have asked for courses that teach students the fundamentals of audio product design and management. Our region is a particularly good market for these skills.

Reviewer Comments

Key: 9016

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:54 pm

Viewing: **MTEC F449. : HISTORY OF MUSIC TECHNOLOGY NONCREDIT**

Last edit: 05/22/24 8:53 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:32 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl
Effective Term	Summer 2025
Subject	Music Technology (MTEC)
Course Number	F449.
Department	Music Technology (MTEC)
Division	Fine Arts and Communication (1FA)
Units	0
Hours	4 HOURS LECTURE, 1 HOUR LAB
Course Title	HISTORY OF MUSIC TECHNOLOGY NONCREDIT
Short Title	
Proposed Transferability	None
Proposed Description and Requisites:	The history of music technology and sound recording from the earliest analog devices to current digital streaming services. How technological change is inseparable from economic, cultural and political change. Ways that music producers responded to different access of technologies shaped by geographical and economic factors. Historical, cultural and theoretical understanding of recorded sound, media, and digital distribution. How the digital era, laptop computers and mobile phones made home studios the dominant location for commercial record production. Hands-on experience with a variety of analog and digital audiovisual technologies. Identify hallmark sounds from commercially released recordings by historically significant audio engineers, music producers and artists.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 49.

Reviewer Comments

Key: 8991

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:56 pm

Viewing: **MTEC F450A : INTRODUCTION TO MUSIC TECHNOLOGY NONCREDIT**

Last edit: 05/22/24 8:56 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:32 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F450A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	INTRODUCTION TO MUSIC TECHNOLOGY NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Introduction to creating music with computers, keyboards, audio samples and beats using Pro Tools and other digital audio workstations. Basic principles and use of MIDI sequencing/audio software. Songwriting, musical composition, mixing, mastering and the basic elements of music (pitch, rhythm, harmony, style and form) as they relate to contemporary music. Basic music production using DAWs (Digital Audio Workstations). General computer literacy and media management. All styles are included, and prior musical training is not required.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 50A.

Reviewer Comments

Key: 8992

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:57 pm

Viewing: MTEC F451A : STUDIO RECORDING I NONCREDIT

Last edit: 05/22/24 8:58 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. 1FA Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 3:33 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F451A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	STUDIO RECORDING I NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Introduction to fundamental concepts and techniques of mixing boards, amplifiers, microphones, signal processors and their application to both live and studio sound reinforcement. Basic introduction to computer based recording with Avid Pro Tools HD systems. Microphone placement, physics of sound as it relates to recording, sound reinforcement and studio setup techniques.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 51A.

Reviewer Comments

Key: 8993

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:58 pm

Viewing: **MTEC F451B : STUDIO RECORDING II NONCREDIT**

Last edit: 05/23/24 8:25 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:34 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F451B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	STUDIO RECORDING II NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Introduction to multitrack recording and production using Avid Pro Tools HD systems. Contemporary recording studio production techniques including microphone selection, placement, analog and digital signal paths, speaker monitors and studio acoustics. Techniques for recording drums, bass, piano, guitar, woodwinds, strings and vocals. Practical hands-on experience with professional recording artists and student collaborations.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 51B.

Reviewer Comments

Key: 8994

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:59 pm

Viewing: MTEC F451C : STUDIO RECORDING III NONCREDIT

Last edit: 05/23/24 8:27 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. 1FA Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 3:34 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F451C
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	STUDIO RECORDING III NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Advanced recording studio techniques, concepts, and creative elements of professional music production. Advanced microphone techniques and acoustics. Planning and pre-production, studio teamwork, collaborating with musicians in the role of producer/ engineer. Mixing, mastering, post-production used in professional digital media content creation workflows. Utilizing analog and digital audio equipment in complex hybrid configurations. Successful completion of this course will prepare students for internship or entry-level employment position in a recording studio, audio for post facility, or mastering facility.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 51C.

Reviewer Comments

Key: 8995

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:00 pm

Viewing: **MTEC F452A : MIXING & MASTERING I NONCREDIT**

Last edit: 05/22/24 9:07 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:35 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F452A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	MIXING & MASTERING I NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Mixing and mastering multitrack recordings using Pro Tools. EQ, compression, reverb, delays, tempo maps, harmonic distortion, multi-band compression. Comparison and contrast of various styles of mixing including jazz, classical, country, rock, hip-hop and electronica, etc. Example exercises featuring professional recordings and mixes. Understanding and applying mixing concepts such as balance, dimension, and monitoring. Deliver final mixes that translate accurately to various speaker systems and listening environments.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 52A.

Reviewer Comments

Key: 8996

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:02 pm

Viewing: MTEC F452B : MIXING & MASTERING II NONCREDIT

Last edit: 05/23/24 8:30 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. 1FA Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 3:35 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F452B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	MIXING & MASTERING II NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Advanced mixing and mastering techniques with Pro Tools. EQ, compression, reverb, delays and tempo maps as applied to all styles of music including jazz, pop, rock, hip-hop, orchestral and electronica. Apply critical listening to mixes and enhance mixes with automation, audio plug-ins and external hardware equipment. Use multi-band compression and advancing audio processing in mastering. Study mixes of professional audio engineers and recording artists. Prepare to work in commercial production facilities and apply these techniques in a home studio. Learn professional collaboration workflows, file management and delivery to a wide range of formats including CD, DVD, MP3 and internet streaming. Although this course uses Pro Tools, the concepts and techniques can be applied to any digital audio workstation (Logic, Cubase, etc.) or any traditional analog mixing console.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 52B.

Reviewer Comments

Key: 8997

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:03 pm

Viewing: **MTEC F453A : AUDIO PLUG-INS & SIGNAL PROCESSING NONCREDIT**

Last edit: 05/22/24 9:12 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:36 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F453A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	AUDIO PLUG-INS & SIGNAL PROCESSING NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Creative applications of software plugins and outboard hardware used in contemporary music production and sound design. Signal processing, equalization, compression, Beat Detective, distortion, reverb, delay, pitch correction, modulation, advanced plugin automation techniques. Compare plugins and processors from different companies, including Sonnox, McDSP, Massey, Avid, Antares and Waves. Practice with a wide range of material and genres, including rock, pop, hip-hop, jazz, acoustic, orchestral, electronic and spoken word. Apply techniques to any digital audio workstation, including Pro Tools, Logic, Ableton Live and Studio One, and traditional analog mixing consoles.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 53A.

Reviewer Comments

Key: 8998

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:04 pm

Viewing: **MTEC F454A : MUSIC THEORY FOR AUDIO PRODUCERS NONCREDIT**

Last edit: 05/23/24 8:32 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:36 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F454A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	MUSIC THEORY FOR AUDIO PRODUCERS NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Introductory course in music theory as applied to audio production, music technology and songwriting. Study elements of music, including melody, rhythm, chords and musical forms. Understand traditional music notation as applied to MIDI sequencers, Pro Tools and other Digital Audio Workstations (DAWS). Edit drum and percussion notation to program beats, MIDI sequencer Event Lists, and digital sample libraries. Ear training exercises for audio engineers to make equalization and production decisions based on harmonic overtones, key signatures and chord progressions. Selected listening and analysis of famous composers and award-winning producers in a wide variety of styles. Study the Nashville number music notation shorthand system. Develop ability to quickly and effectively recognize chord changes and transpose to any key. Learn to read, write and conduct orchestral scores used in commercial recording studios. Apply traditional music theory concepts to modern digital audio editing software, such as Melodyne, Auto-Tune, Elastic Audio, and computer virtual instrument orchestration.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 54A.

Reviewer Comments

Key: 8999

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:31 pm

Viewing: **MTEC F455A : INTRODUCTION TO GAME AUDIO NONCREDIT**

Last edit: 05/22/24 9:16 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F455A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	INTRODUCTION TO GAME AUDIO NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Creating, editing, and mixing audio for film and video. Understanding aesthetic qualities of sound effects and music as they relate to story. Recording original sound elements and using commercial sound libraries. Editing, layering, and processing sound elements to create complex sound effects. Synchronizing audio to video using a digital audio workstation. Basics of mixing and mastering finished soundtracks for digital distribution.
Proposed Discipline	Commercial Music

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

NONE

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 55A.

Reviewer Comments

Key: 8981

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:37 pm

Viewing: **MTEC F455B : ADVANCED SOUND DESIGN FOR GAMES NONCREDIT**

Last edit: 05/22/24 9:18 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	ERIC KUEHNL

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F455B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	ADVANCED SOUND DESIGN FOR GAMES NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Designing and implementing sound effects for games and interactive media. Recording custom sound effects and working with commercial sound effects libraries. Advanced techniques for designing hard effects, foley sounds, and ambient backgrounds. Industry-standard workflows for sound effects implementation with audio middleware solutions. Hands-on experience with professional examples of game audio sound design on desktop, console, and mobile platforms.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 55B.

Reviewer Comments

Key: 8982

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:39 pm

Viewing: **MTEC F455C : MUSIC COMPOSITION FOR GAMES NONCREDIT**

Last edit: 05/22/24 9:22 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. 1FA Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F455C
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	MUSIC COMPOSITION FOR GAMES NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Composing, orchestrating, and implementing music for games and interactive multimedia. Fundamental composition and orchestration techniques for strings, brass, woodwinds, and percussion. Mixing and mastering finished compositions for optimal interactivity. Industry-standard workflows for interactive music implementation with sophisticated audio middleware solutions. Hands-on experience with professional examples of game music on desktop, console, and mobile platforms.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 55C.

Reviewer Comments

Key: 8983

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:43 pm

Viewing: **MTEC F457A : SOUND DESIGN FOR FILM & VIDEO NONCREDIT**

Last edit: 05/22/24 9:24 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F457A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	SOUND DESIGN FOR FILM & VIDEO NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Creating, editing, and mixing audio for film and video. Understanding aesthetic qualities of sound effects and music as they relate to story. Recording original sound elements and using commercial sound libraries. Editing, layering, and processing sound elements to create complex sound effects. Synchronizing audio to video using a digital audio workstation. Basics of mixing and mastering finished soundtracks for digital distribution.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 57A.

Reviewer Comments

Key: 8984

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:45 pm

Viewing: **MTEC F457B : SURROUND SOUND PRODUCTION NONCREDIT**

Last edit: 05/22/24 9:26 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F457B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	SURROUND SOUND PRODUCTION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Record, mix, and produce surround music with digital audio workstations. Calibrating surround speaker systems, recording surround music in the studio and concert hall, multichannel mixing for music and post, processing source sound elements using surround reverbs and delays, mastering music and post sessions to industry specifications, and encoding mixes into popular surround formats. Analysis of historically significant surround sound music recordings and film soundtracks.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 57B.

Reviewer Comments

Key: 8985

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:46 pm

Viewing: **MTEC F457C : MUSIC COMPOSITION FOR FILM & TV NONCREDIT**

Last edit: 05/22/24 9:28 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:31 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F457C
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 Hours Lecture, 3 Hours Lab		
Course Title	MUSIC COMPOSITION FOR FILM & TV NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Creative and technical aspects of composing music for film and television. Basic overview of modern composition and orchestration techniques for strings, brass, woodwinds, and percussion. Technical aspects of scoring using a digital audio workstation, virtual instruments, and MIDI. Generating a notated score for musicians to perform in a recording session. Analysis of historically significant film and television scores. Students will score several visual sequences featuring different types of dramatic content.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 57C.

Reviewer Comments

Key: 8986

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:05 pm

Viewing: **MTEC F460A : PRODUCING IN THE HOME STUDIO I NONCREDIT**

Last edit: 05/23/24 8:34 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F460A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	4 HOURS LECTURE, 1 HOUR LAB		
Course Title	PRODUCING IN THE HOME STUDIO I NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Design, set up and operation of an audio/video recording studio in a small environment. Space considerations, electrical requirements and acoustic treatment options. Computer requirements including processor speed, memory requirements, data storage devices and monitor selection/placement. MIDI keyboard types and compatibility, mixer selection and setup, cable selection and care, microphone design, and USB/firewire interface options. Software programs and compatibility issues. How to produce recordings from start to finish in a home studio.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 60A.

Reviewer Comments

Key: 9000

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:47 pm

Viewing: **MTEC F462A : COMPOSING & PRODUCING ELECTRONIC MUSIC I NONCREDIT**

Last edit: 05/22/24 9:31 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. 1FA Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F462A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	COMPOSING & PRODUCING ELECTRONIC MUSIC I NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Introduction to the tools and techniques used to create and perform electronic music in a variety of styles. Programming of virtual analog and digital synthesizers, developing techniques for recording unique instruments and sounds, creating custom single and multi-sample patches using software samplers, using algorithmic composition tools and techniques, building interactive performance systems using object-oriented programming environments, and adapting hardware and software for live performance.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 62A.

Reviewer Comments

Key: 8987

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:49 pm

Viewing: **MTEC F462B : COMPOSING & PRODUCING ELECTRONIC MUSIC II NONCREDIT**

Last edit: 05/22/24 9:33 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F462B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	COMPOSING & PRODUCING ELECTRONIC MUSIC II NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Creating and editing sounds with synthesizers, samplers, drum machines, and virtual instruments. Compose and produce music in a variety of styles, including commercial and experimental. Utilize MIDI and virtual instruments for songwriting, arranging, and orchestration. Program analog synthesizer modules, including oscillators, filters, ADSR envelope generators, and LFOs. Overview of third party virtual instruments and plugins. Create, edit, and arrange drum beats. Emulate acoustic instruments, violin sections, brass, woodwinds, and choir. Organize sound libraries and virtual instrument templates for music production, TV, film, websites, and video games. Work can be done in any major DAW that supports AU, AAX, or VST instruments, including Pro Tools, Logic, Cubase, Live, etc.
Proposed Discipline	COMMERCIAL MUSIC

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

NONE

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 62B.

Reviewer Comments

Key: 8988

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:50 pm

Viewing: **MTEC F462C : COMPOSING & PRODUCING ELECTRONIC MUSIC III NONCREDIT**

Last edit: 05/22/24 9:35 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:39 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl
Effective Term	Summer 2025
Subject	Music Technology (MTEC)
Course Number	F462C
Department	Music Technology (MTEC)
Division	Fine Arts and Communication (1FA)
Units	0
Hours	3 HOURS LECTURE, 3 HOURS LAB
Course Title	COMPOSING & PRODUCING ELECTRONIC MUSIC III NONCREDIT
Short Title	
Proposed Transferability	None
Proposed Description and Requisites:	Advanced techniques for electronic music production in a variety of genres. Recording and processing vocals. Advanced analog and digital synthesis and sound design techniques. Field recording of original samples for use in producing drum beats and textures. Mixing and mastering finished compositions for commercial distribution. Remixing existing songs from both stereo mixes and multi-channel stems. Creating dynamic, real-time live performances using a variety of hardware controllers.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 62C.

Reviewer Comments

Key: 8989

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:06 pm

Viewing: **MTEC F470A : PRO TOOLS 101-AVID CERTIFICATION NONCREDIT**

Last edit: 05/23/24 8:39 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:40 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F470A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRO TOOLS 101-AVID CERTIFICATION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Introduction to Pro Tools with Avid Certification training material. Basic audio editing tools and techniques, plug-ins and mixing in the Pro Tools environment. Build sessions that include multitrack recordings of live instruments, MIDI sequences, virtual instruments, audio loops and beats. Practical experience with examples from major label recording artists and feature films. Understanding menus, windows, preferences and system configurations for Pro Tools in home studios and professional facilities. Introduction to automation, dialog editing and audio post production for film and video. Required for Avid Pro Tools Certification.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 70A.

Reviewer Comments

Key: 9001

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:07 pm

Viewing: **MTEC F470B : PRO TOOLS 110-AVID CERTIFICATION NONCREDIT**

Last edit: 05/23/24 8:41 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:41 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F470B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRO TOOLS 110-AVID CERTIFICATION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Pro Tools production concepts and techniques with Avid Certification training material. Recording, editing, routing audio and MIDI data. Managing Pro Tools sessions, using virtual instruments, plug-ins, loop recording, Elastic Audio, Beat Detective and music notation. Conform loops and beats to any tempo. Introduction to control surfaces, automation modes and signal path workflows. Practical applications with examples from professional recording artists including pop, rock, jazz and hip-hop. Create tempo maps, meter changes and transpose key signatures. Required for Avid Pro Tools Certification.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 70B.

Reviewer Comments

Key: 9002

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:08 pm

Viewing: **MTEC F470C : PRO TOOLS 201-AVID CERTIFICATION NONCREDIT**

Last edit: 05/23/24 8:46 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:41 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F470C
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRO TOOLS 201-AVID CERTIFICATION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Avid Pro Tools Certified training material covers concepts and skills needed to operate Pro Tools in a professional recording studio environment. Introduction to Pro Tools HD system configurations. Pro Tools HD features, including control surfaces, automation, advanced editing, mixing, hardware setup, and session management. Practical examples and experience with exercise files from professional music, film, and TV productions. Required course for Avid Pro Tools Operator Level Certification. Prepares for enrollment in Pro Tools 300 Expert Level Certification courses.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 70C.

Reviewer Comments

Key: 9003

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:09 pm

Viewing: **MTEC F470D : PRO TOOLS 210M-AVID CERTIFICATION NONCREDIT**

Last edit: 05/23/24 9:10 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:41 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F470D
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRO TOOLS 210M-AVID CERTIFICATION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Avid Pro Tools Certified course completes skills needed to operate sophisticated Pro Tools systems in professional music production environments. Music production techniques, composing with MIDI, loop editing, sampling in Pro Tools, Beat Detective, drum replacement and augmentation, final mixing and mastering. Collaborate workflows between home studios and commercial recording facilities. Pro Tools keyboard shortcuts for increased efficiency. Practical examples and experience with exercise files from professional recording artists. Successful completion achieves Avid Pro Tools Operator Music Certification.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 70D.

Reviewer Comments

Key: 9004

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:10 pm

Viewing: **MTEC F470E : PRO TOOLS 210P-AVID CERTIFICATION NONCREDIT**

Last edit: 05/23/24 9:13 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:41 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F470E
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRO TOOLS 210P-AVID CERTIFICATION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Synchronizing Pro Tools for audio post production with film, video and multimedia. Recording and editing ADR (automated dialog replacement), music, sound effects and multichannel audio. Mixing stereo and surround sound formats synchronized to digital picture. Layback and export options for final delivery to broadcast industry formats including QuickTime and Avid media. Practical experience with examples from feature films, documentaries and TV commercials. Successful completion achieves Avid Pro Tools Operator Post Certification.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 70E.

Reviewer Comments

Key: 9005

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:11 pm

Viewing: **MTEC F470F : PRO TOOLS 310M-AVID CERTIFICATION NONCREDIT**

Last edit: 05/23/24 9:15 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:41 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F470F
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRO TOOLS 310M-AVID CERTIFICATION NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Advanced operation of Pro Tools in a professional music production environment. Audio recording, editing, MIDI, virtual instruments, final mix down, automation and mastering techniques. Integration of Pro Tools shortcuts and equipment configurations for increased efficiency in recording studio facility workflows. Hands-on experience with examples from major label recording artists, producers and mix engineers. Successful completion achieves Avid Pro Tools Expert Level Music Certification.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 70F.

Reviewer Comments

Key: 9006

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 6:52 pm

Viewing: **MTEC F472B : PRODUCING MUSIC WITH ABLETON LIVE NONCREDIT**

Last edit: 05/22/24 9:43 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F472B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRODUCING MUSIC WITH ABLETON LIVE NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Producing music with Ableton Live software. Compose, record, mix, improvise, produce and edit music. Study Ableton Live interface, edit audio, use plug-ins, MIDI sequencing and realtime mixing techniques. Compile live sets from audio clips, loops, samples in realtime and create songs in a variety of styles.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 72B.

Reviewer Comments

Key: 8990

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:12 pm

Viewing: **MTEC F472C : PRODUCING MUSIC WITH LOGIC PRO NONCREDIT**

Last edit: 05/23/24 9:18 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F472C
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	PRODUCING MUSIC WITH LOGIC PRO NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Producing music with Apple Logic Pro software. Understanding the Logic Pro interface, windows and editors, navigation, key commands, and screensets. MIDI editing, MIDI real-time control, audio recording and editing, and working with QuickTime video. Explore Logic Pro software instruments, including the ES2, EXS-24, Sculpture, UltraBeat, subtractive synthesizers, and vintage instruments. Study critical listening examples with interactive demos and tutorials. Elements of production design, music composition and song form, arrangement tools, and mixing techniques.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 72C.

Reviewer Comments

Key: 9007

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:13 pm

Viewing: **MTEC F480A : MUSIC BUSINESS NONCREDIT**

Last edit: 05/23/24 9:20 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F480A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	MUSIC BUSINESS NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Study of legal and business aspects of the music industry. Emphasis on publishing, licensing, and promotion. Copyright law, interaction between songwriters and music publishers, record companies, distributors and the rules that govern them. How music is licensed, service marks, trademarks and patents. The role of lawyers, agents, personal managers, producers and promoters. Licensing and copyright of intellectual properties in the growing multimedia industry and the internet. Synchronization of music in film, video and television. Career development and how major/independent labels market and distribute media.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 80A.

Reviewer Comments

Key: 9008

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:14 pm

Viewing: **MTEC F482A : CAREERS IN MUSIC TECHNOLOGY NONCREDIT**

Last edit: 05/23/24 9:22 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F482A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	CAREERS IN MUSIC TECHNOLOGY NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	An overview of the music technology industry and career opportunities. Study degree and certification programs that lead to job positions in the content creation industry. Develop advertising and social media marketing skills to promote and brand artists and producers. Learn entrepreneurial strategies to advance student's career and collaborate with professionals. Apply music technology concepts to a wide variety of fields, including software development, sound design, video production, game audio, the record industry, manufacturing, and live performance. Explore internship positions. Develop portfolios of content designed to enter the workforce or transfer to additional degree programs. Guest lectures from local industry professionals; field trips to studios, production facilities, and high tech companies.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 82A.

Reviewer Comments

Key: 9009

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:15 pm

Viewing: **MTEC F486A : SOUND REINFORCEMENT & EVENT STREAMING NONCREDIT**

Last edit: 05/23/24 9:24 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F486A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	SOUND REINFORCEMENT & EVENT STREAMING NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Setup and operation of sound reinforcement and live streaming systems for musical performances and event production. Basic design and operation of digital mixing boards and live streaming systems. Microphone type, design, construction, and selection. Loudspeaker monitor systems and their application with musical groups and event production. Audio-over-IP applications for sound reinforcement and event production. Stereo and multichannel recording techniques. Practice with live musicians in practice and performance settings.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 86A.

Reviewer Comments

Key: 9010

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:16 pm

Viewing: MTEC F488A : SONGWRITING I NONCREDIT

Last edit: 05/23/24 9:26 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F488A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	SONGWRITING I NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Workshop course for beginning songwriters that focuses on basic songwriting styles and techniques. Different songwriting basic methods are presented. Students are assigned weekly songwriting projects. This course is appropriate for basic levels of songwriting competency.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 88A.

Reviewer Comments

Key: 9011

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:17 pm

Viewing: MTEC F488B : SONGWRITING II NONCREDIT

Last edit: 05/23/24 9:28 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. 1FA Curriculum Rep
2. Curriculum Coordinator
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl		
Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F488B
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	SONGWRITING II NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Workshop course for intermediate songwriters that focuses on contemporary and songwriting methodology. Different songwriting components and structures are presented. Students are assigned weekly songwriting projects and are expected to submit finished songs with all the necessary components. Course includes analytical listening and discussion of various songwriting styles. Course is appropriate for medium levels of songwriting competency.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 88B.

Reviewer Comments

Key: 9012

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:18 pm

Viewing: MTEC F488C : SONGWRITING III NONCREDIT

Last edit: 05/23/24 9:30 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F488C
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	3 HOURS LECTURE, 3 HOURS LAB		
Course Title	SONGWRITING III NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Workshop course for advanced songwriters that focuses on higher-level topics such as self-criticism, rewriting and co-writing. Demonstrations of the practical use of technique and an understanding of the works of the most accomplished professional songwriters. Course is appropriate for advanced levels of songwriting competency.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 88C.

Reviewer Comments

Key: 9013

Preview Bridge

Course Change Request

New Course Proposal

Date Submitted: 04/17/24 7:19 pm

Viewing: **MTEC F490A : MUSIC TECHNOLOGY ENSEMBLE NONCREDIT**

Last edit: 05/23/24 9:32 am

Changes proposed by: Eric Kuehnl (20116797)

In Workflow

1. **1FA Curriculum Rep**
2. **Curriculum Coordinator**
3. Activation

Approval Path

1. 05/21/24 3:48 pm Jordan Fong (fongjordan): Approved for 1FA Curriculum Rep

Course Proposal Form

Faculty Author	Eric Kuehnl

Effective Term	Summer 2025		
Subject	Music Technology (MTEC)	Course Number	F490A
Department	Music Technology (MTEC)		
Division	Fine Arts and Communication (1FA)		
Units	0		
Hours	1 HOUR LECTURE, 3 HOURS LAB		
Course Title	MUSIC TECHNOLOGY ENSEMBLE NONCREDIT		
Short Title			

Proposed Transferability	None
Proposed Description and Requisites:	Select group performing varied literature in contemporary styles, including pop, rock, hip-hop, metal, and jazz. Designed to develop the performing skills needed by musicians in a studio recording environment. Open by audition to all students.
Proposed Discipline	Commercial Music

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

None

Are there any other departments that may be impacted from the addition of this course?

No

Comments & Other Relevant Information for Discussion:

Mirrored non-credit version of MTEC 90A.

Reviewer Comments

Key: 9014

Preview Bridge

Public Health, AS-T Degree

Basic Information

Faculty Author(s)

Users
Shirley Treanor
Catherine Draper

Department
Health

Division
Health Sciences and Horticulture

Title of Degree/Certificate
Public Health

Type of Award
AS-T Degree

Workforce/CTE Program:
Yes

Effective Catalog Edition:
2024-2025

AA-T or AS-T Degree Narrative

Program Goals and Objectives
The Associate in Science in Public Health for Transfer Degree prepares students for transfer as an upper division student in Health Science, Health Science with Health Education option, Health Science with Public Health option, Health Science with Community Health option, Health Science with Health Promotion & Disease Prevention, Health Education, Public Health, Public Health Promotion, Kinesiology with Health Education, Kinesiology with Health Science option, Kinesiology with Health and Wellness Promotion, Kinesiology with Health Promotion and Disease Prevention, and Collaborative Health and Human Services with Community Health option majors to the California State University system. The Public Health curriculum covers both personal and public health perspectives. The major prepares students to transfer as well as gain the necessary prerequisites to enter many allied health science programs.

The Associate in Science in Public Health for Transfer Degree meets the requirements to prepare students to transfer to California State Universities (CSUs). Students who complete the Associate in Science in Public Health for Transfer Degree will be ensured preferential and

seamless transfer status to local CSUs for Public Health majors and majors in related disciplines. The Associate in Science in Public Health for Transfer Degree requirements will fulfill the lower division major requirements at many CSUs. Students are advised, however, to meet with a counselor to assess the course requirements for specific CSUs.

Program Learning Outcomes

- Students will be able to identify, assess, utilize, and articulate credible information resources on personal and public health current issues, such as the internet, social media, media outlets, and libraries.
- Students will be able to effectively communicate strategies or tactics to improve health inequalities, such as advocacy, community organizing, and policy change.
- Students will obtain a critical understanding of and be able to apply knowledge of personal and public health in real life settings from the sub-disciplines of biology, chemistry, and statistics.

Catalog Description

The Associate in Science in Public Health for Transfer Degree prepares students for transfer to California State Universities (CSUs). Students who complete the degree will be ensured preferential transfer status to CSUs for Public Health majors and majors in related disciplines. The Associate in Science in Public Health for Transfer Degree requirements will fulfill the lower division major requirements at many CSUs. Students are advised, however, to meet with a counselor to determine the lower division course requirements for specific CSUs. This degree may also provide excellent preparation for other majors. The major in Public Health prepares students for careers in the health professions, local state and federal agencies, health departments, educational institutions, healthcare organizations and health insurance companies, research organizations, crisis agencies, and many other fields. This degree is designed to prepare graduates for public health and related programs at the bachelor's degree level.

Additional Information Required for State Submission:

TOP Code: 1201.00 - Health Occupations, General

CIP Code: 51.0001 - Health and Wellness, General

Distance Education: 50-99%

ADT Submission Form or Public Health
CCC Major or Area of Emphasis: Public Health
TOP Code: 1201.00

CSU Major(s): Health Science, Health Science with Health Education option, Health Science with Public Health option, Health Science with Community Health option, Health Science with Health Promotion & Disease Prevention, Health Education, Public Health, Public Health Promotion, Kinesiology with Health Education, Kinesiology with Health Science option, Kinesiology with Health and Wellness Promotion, Kinesiology with Health Promotion and Disease Prevention and Collaborative Health and Human Services with Community Health option.
Total Units: 23 *(all units are minimum semester units)*

In the four columns to the right under the **College Program Requirements**, enter the college's course identifier, title and the number of units comparable to the course indicated for the form. If the course may be double-counted with Cal-GETC, enter the GE Area to which the course is articulated. To review the GE Areas and associated unit requirements, please go to Chancellor's Office Academic Affairs page, RESOURCE section located at:

https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/What-we-do/Curriculum-and-Instruction-Unit/Templates-For-Approved-Transfer-Model-Curriculum

or the ASSIST website:

https://www.assist.org/.

The units indicated in the template are the **minimum** semester units required for the prescribed course or list. All courses must be CSU transferable. ***All courses with an identified C-ID Descriptor must be submitted to C-ID prior to submission of the Associate Degree for Transfer (ADT) proposal to the Chancellor's Office.***

Where no **C-ID Descriptor** is indicated, discipline faculty should compare their existing course to the example course(s) provided in the form at:

http://www.c-id.net/degreereview.html

Attach the appropriate ASSIST documentation as follows:

- *Articulation Agreement by Major* (***AAM***) demonstrating lower division preparation in the major at a CSU;
- *CSU Baccalaureate Level Course List by Department* (***BCT***) for the transfer courses; and/or,
- *CSU GE Certification Course List by Area* (***GECC***).

The acronyms ***AAM, BCT,*** and ***GECC*** will appear in **C-ID Descriptor** column directly next to the course to indicate which report will need to be attached to the proposal to support the course's inclusion in the transfer degree. To access ASSIST, please go to http://www.assist.org.

Associate in Science in Public Health for Transfer Degree College
Name: Foothill College

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
REQUIRED CORE: (13 units)					
Personal Health and Wellness (3)	PH 100	HLTH 21	Contemporary Health Concerns	4	N/A

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
Introduction to Public Health (3)	PH 101	HLTH 20	Introduction to Public Health	5	4
Introduction to Statistics (3)	MATH 110	MATH 10	Elementary Statistics	5	2
OR		OR			
Public Health Statistics (3)	PH 114	MATH 17	Integrated Statistics II	5	2
OR		OR			
Any statistics course articulated as Area 2	GECC	PSYC 7	Statistics for the Behavioral Sciences	5	2
		OR			
		SOC 7	Statistics for the Behavioral Sciences	5	2
Introduction to Biology with lab (4)	***AAM***	BIOL 1A	Principles of Cell Biology	6	5B/5C
		OR			
		BIOL 10	General Biology: Basic Principles	5	5B/5C
		OR			
		BIOL 14	Human Biology	5	5B/5C
LIST A: Select one of the following (4 units)					
Introduction to Chemistry (4)	CHEM 101	CHEM 25	Fundamentals of Chemistry	5	5A/5C
OR	**OR**	OR			
General Chemistry for Science Majors I, with Lab (5)	CHEM 110	CHEM 30A	Survey of Inorganic & Organic Chemistry	5	5A/5C
OR	**OR**	OR			
Human Anatomy with lab (4)	BIOL 110B	BIOL 41	Microbiology	6	5B/5C
OR	**OR**				
Human Physiology with lab (4)	BIOL 120B				
OR	**OR**				
Microbiology (4)	AAM				

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
LIST B: Select one of the following (3 units)					
Cultural Humility or Competence in Health and Social Services	PH 104				
Health and Social Justice	PH 102	HLTH 22	Health & Social Justice	4	4
Social Determinants of Health, Disparities and Equities	PH 113				
Multicultural Health	AAM				

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
Health Diversity	AAM				
Social Inequality	AAM				
LIST C: Select one of the following (3 units)					
Drugs, Health, and Society	PH 103	HLTH 23	Drugs, Health & Society	4	N/A
Explorations of Health Professions	PH 105				

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
Holistic Health	PH 106				
Stress Management	PH 107				
Investigating Disease Outbreaks	PH 108				
Global Health	PH 109				

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
Healthcare Systems	PH 110				
Foundations of Health Education	PH 111				
Health Information Technology	PH 115				
Women's Health	PH 116				

TRANSFER MODEL CURRICULUM (TMC)		COLLEGE PROGRAM REQUIREMENTS			
Course Title (units)	**C-ID Descriptor**	**Course ID**	**Course Title**	**Units**	**Cal-GETC**
Introduction to Human Sexuality	PSY 130	PSYC 49	Human Sexuality	4	4
Any course articulated as major preparation for the public health and related majors at CSU or UC.	AAM	ANTH 1	Introduction to Physical Anthropology	4	5B
		ANTH 1H	Honors Introduction to Physical Anthropology	4	5B
		ANTH 2A	Cultural Anthropology	4	4
		ANTH 2AH	Honors Cultural Anthropology	4	4
		BIOL 45	Introduction to Human Nutrition	4	5B
		ECON 1B	Principles of Microeconomics	5	4
		POLI 1	Political Science: Introduction to American Government & Politics	5	4
		POLI 2	Comparative Government & Politics	4	4
		POLI 2H	Honors Comparative Government & Politics	4	4
		PSYC 1	General Psychology	5	4
		PSYC 1H	Honors General Psychology	5	4
		PSYC 40	Human Development	5	4
		SOC 1	Introduction to Sociology	5	4
		SOC 1H	Honors Introduction to Sociology	5	4
Total Units for the Major:	**23**		**Total Units for the Major:**	32-35	
			Total Units that may be double-counted (***The transfer GE Area limits must not be exceeded***)		24
			General Education (Cal-GETC) Units		**34**
			Elective Units		34-37
			Total Degree Units (maximum)		**60**

Archaeological Field Work, Certificate of Achievement

Basic Information

Faculty Author(s)

Users
Samuel Connell

Department
Anthropology

Division
Business and Social Sciences

Title of Degree/Certificate
Archaeological Field Work

Type of Award
Certificate of Achievement

Workforce/CTE Program:
No

Effective Catalog Edition:
2023-2024

Certificate of Achievement Local Narrative

Program Goals and Objectives

The Certificate of Achievement in Archaeological Field Work prepares students for entry-level work in cultural resource management (CRM). The archaeological industry requires archaeology field schools for employment, and graduate schools across the globe require archaeology field schools for entry. This certificate program provides opportunities for students to actively engage in archaeological research in both field and laboratory settings. Courses are designed to introduce students to a diverse range of professional skills, including survey and excavation techniques, mapping and documentation, and artifact identification, processing, and analysis. Complementary courses emphasize public outreach and stakeholders with concepts such as traditional ecological knowledge (TEK), indigenous archaeology, and community-based participatory research woven into the program courses.

Program Learning Outcomes

- Students will be able to perform basic field methods in archaeology, to include survey, excavation, and laboratory analysis.

- Students will be able to understand the complex history of archaeologist and indigenous relationships through time.
- Students will be invested in public outcomes for archaeology, to include service experiences, community-based participatory research, and indigenous archaeology.
- Students will be able to explain the difference between Cultural Resource Management (CRM) archaeology and institutional academic archaeology.

Catalog Description

The Certificate of Achievement in Archaeological Field Work is designed for students who are seeking to learn field techniques in archaeology. The certificate program provides 14 units of instruction in key elements: basic Archaeology, survey, lab, excavations and applied archaeology. Courses can be taken in person and/or some online.

Program Requirements

Core Course Units: 8

Course List

Code	Title	Units
ANTH F008.	INTRODUCTION TO ARCHAEOLOGY	4
or ANTH F008H	HONORS INTRODUCTION TO ARCHAEOLOGY	4
ANTH F052.	ARCHAEOLOGICAL FIELD METHODS	4

Support Course Units: 6

Course List

Code	Title	Units
Select two or more units from the following:		
ANTH F016L	BASIC ARCHAEOLOGY LABORATORY	1
ANTH F017L	INTERMEDIATE ARCHAEOLOGY LABORATORY	2
ANTH F051.	ARCHAEOLOGY SURVEY	2
ANTH F057.	APPLIED ARCHAEOLOGY FIELD METHODS	1
And four or more units from the following:		
ANTH F003.	WORLD PREHISTORY: THE RISE & FALL OF EARLY CIVILIZATIONS	4
ANTH F004.	FIRST PEOPLES OF NORTH AMERICA	4
ANTH F012.	APPLIED ANTHROPOLOGY	4
ANTH F020.	NATIVE PEOPLES OF CALIFORNIA	4

Course List

Code	Title	Units
ANTH F022.	THE AZTEC, MAYA, INCA & THEIR PREDECESSORS: CIVILIZATIONS OF THE AMERICAS	4
ANTH F067A	CULTURES OF THE WORLD: ECUADOR	4
ANTH F067B	CULTURES OF THE WORLD: BELIZE	4
ANTH F067C	CULTURES OF THE WORLD: BRITISH ISLES	4

Total Units: 14

Proposed Sequence

Term	Units
Year 1, Spring	4
Year 1, Summer	4
Year 1, Fall	4
Year 1, Winter	2

Master Planning

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. There is currently a high demand for qualified individuals who understand archaeology methods. This program will allow students to achieve their goals whether it is to attend graduate schools, join the workforce directly, advance in place of employment, or transfer credit to a four-year college. The Certificate of Achievement in Archaeological Field Work is also a pivotal step for students who are retraining, returning to the workplace, and/or updating work skills.

Enrollment and Completer Projections

We expect more than 30 students to complete the program in the initial year. We can include the Ireland, Ecuador, Belize, Hawaii, and California areas of study in the program. Each year there will be at least three field program and lab components taking place through Foothill College. We are averaging over 100 unduplicated students per academic year.

Historical Enrollment Data

Course #	Course Title	Y1 - Annual Sections	Y1 - Annual Enrollment	Y2 - Annual Sections	Y2 - Annual Enrollment
ANTH 3	World Prehistory: The Rise & Fall of Early Civilizations	1	40	1	40
ANTH 4	First Peoples of North America	1	30	1	30
ANTH 8	Introduction to Archaeology	3	90	3	90
ANTH 8H	Honors Introduction to Archaeology	N/A	N/A	N/A	N/A

Course #	Course Title	Y1 - Annual Sections	Y1 - Annual Enrollment	Y2 - Annual Sections	Y2 - Annual Enrollment
ANTH 12	Applied Anthropology	1	30	1	30
ANTH 16L	Basic Archaeology Laboratory	2	55	2	55
ANTH 17L	Intermediate Archaeology Laboratory	1	20	1	20
ANTH 20	Native Peoples of California	1	20	1	20
ANTH 22	The Aztec, Maya, Inca & Their Predecessors: Civilizations of the Americas	1	20	1	20
ANTH 51	Archaeology Survey	2	55	2	55
ANTH 52	Archaeological Field Methods	1	30	1	30
ANTH 57	Applied Archaeology Field Methods	2	55	3	55
ANTH 67A	Cultures of the World: Ecuador	N/A	N/A	N/A	N/A
ANTH 67B	Cultures of the World: Belize	N/A	N/A	N/A	N/A
ANTH 67C	Cultures of the World: British Isles	N/A	N/A	N/A	N/A

Place of Program in Curriculum/Similar Programs

This certificate allows Foothill to formalize previously non-transcriptable certificates. It is something that is needed on campus.

Similar Programs at Other Colleges in Service Area

There is nothing in the region like this at the community colleges. Several local graduate schools offer MA programs in archaeology for CRM. Cabrillo College offered a program that is now closed. Palomar College in the San Diego area has tried a program similar to this and the current status is unclear. In Arizona, there is a program at Pima Community Colleges that is quite successful at training archaeological technicians in the region.

Additional Information Required for State Submission:

TOP Code 2202.20 - Archaeology

CIP Code 45.0301 - Archeology

Will any new resources be required (e.g., facilities, equipment, personnel)? No

Gainful Employment: No

Distance Education: 1-49%

ASSIST is best used in combination with seeing a counselor on your campus. It is intended to help students and counselors work together to establish an appropriate path toward transferring from a public California community college to a public California university.

Major Articulation Agreement

Anthropology, BA

Effective during the **2023-2024** academic year

To: California State University, Bakersfield	From: Foothill College
2023-2024 General Catalog, Semester	2023-2024 General Catalog, Quarter

GENERAL INFORMATION

This articulation agreement displays lower-division course requirements specific to the major. Students should always contact an academic advisor about degree requirements for their baccalaureate major.

Helpful Resources:

- CSUB Catalog
- Transfer Admission Requirements
- Academic Advising Student Centers
- CSUB Program Pathways Mapper

ABOUT THE MAJOR

The program in Anthropology administers one degree, a Bachelor of Arts. Students have the option of adding a concentration in Cultural Resource Management, which is designed to enhance the field training, laboratory analysis, heritage management laws, and applied skills necessary for employment in this rapidly growing field of professional applied anthropology and historic preservation.
The Anthropology program faculty stresses a close working relationship with students and strongly encourages students to take full advantage of the many opportunities the department provides for collaborative research with faculty, student internships, and other direct collaboration of professional skills.

For additional information, visit the following:
Department of Anthropology
Program Requirements - Anthropology, BA

MAJOR REQUIREMENTS

1 Complete the following

A

ANTH 1118	Introduction to Archaeology	**3.00**	**ANTH 8**	Introduction to Archaeology	**4.00**
ANTH 1208	Introduction to Biological Anthropology	**3.00**	**ANTH 1**	Introduction to Physical Anthropology	**4.00**
			OR		

			ANTH 1H	Honors Introduction to Physical Anthropology	**4.00**
ANTH 1318	Introduction to Cultural Anthropology	**3.00**	**ANTH 2A**	Cultural Anthropology	**4.00**
			OR		
			ANTH 2AH	Honors Cultural Anthropology	**4.00**
MATH 1209	Statistics in the Modern World	**3.00**	**MATH 17**	Integrated Statistics II	**5.00**

2 Complete the following

A

ANTH 2308	Native Peoples of North America	**3.00**	**ANTH 4**	First Peoples of North America	**4.00**
ANTH 2310	Peoples and Cultures of South Asia	**3.00**	No Course Articulated		

LOWER DIVISION ELECTIVES

3 Select 1 course from the following

A

ANTH 1109	World Archaeology	**3.00**	No Course Articulated		
ANTH 1120	Amazing Archaeology	**3.00**	No Course Articulated		
ANTH 1220	Evolution and Scientific Creationism	**3.00**	No Course Articulated		
ANTH 2100	Introductory Field Archaeology	**3.00**	**ANTH 52**	Archaeological Field Methods	**4.00**
ANTH 2128	Prehistory of the New World	**3.00**	**ANTH 3**	World Prehistory: The Rise & Fall of Early Civilizations	**4.00**

END OF AGREEMENT

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Course Number & Title: Sheet Metal Apprenticeship Program

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 V – Communication & Analytical Thinking:

Communication and analytical thinking curricula foster the ability to communicate knowledge, information, ideas, and feelings, and enhance the ability to evaluate, solve problems, and make decisions.

To accomplish this, a course meeting the Communication and Analytical Thinking General Education Requirement ***must*** offer students the opportunity to:

C1. Apply the analytical skills learned in the course to other disciplines;
C2. Develop competencies in communication or computation, and apply the appropriate technical, interpretive, and evaluative skills;
C3. Read, interpret, and analyze statements and then be able to express them in symbolic form when appropriate;
C4. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

Expected outcomes of a successful course in this area **should** include some or all of the following:

C5. Critically assess other people's ideas; and organize, edit, and evaluate their own ideas in order to articulate a position;
C6. Identify goals when applying analytical skills;
C7. Recognize limitations of applicable methodologies;
C8. Use current technologies for discovering information and techniques for communication, analysis, evaluation, problem solving, decision-making, and presentation.

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Course Number & Title: Sheet Metal 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:

C1. Apply the analytical skills learned in the course to other disciplines;

Matching course component(s):
Sheet metal students learn and employ analytical skills throughout their program that will translate across other coursework and discipline. For example, they will learn inductive and deductive reasoning, problem solving, causal reasoning and scientific method while on the job site and while in their hands on training courses. And that reasoning will be employed in a host of applications that cross other disciplines such as math, physics, environmental science to name just a few.

APSM 101 BTSM Program, Year 1, Semester 1, Module 1-7 (Classroom Survival Skills). Students during classroom lecture are taught to identify keywords, build effective study habits, and use online resources for course assignments and reading material. This discipline not only applies to classroom activities but directly relates to employable practices in the field and shop.

APSM 104 BTSM Program, Year 1, Semester 2, Module 4-9 (Communication Skills). Students during classroom lecture are taught effective communication skills in the construction industry. Throughout the lesson, students view scenarios depicting situations which require either verbal or written responses. In practicing effective communication, students view a situation and draft a professional email addressing the scenario posed and send to the instructor for review. Examples of professional writing are offered to guide students to develop this skill.

APSM 120 BTSM Program, Year 5, Semester 1, Module 20-5 (Right Triangles) A sheet metal worker's understanding of right triangles is the foundation in completing shop and field layout. The right triangle throughout the program is used to calculate duct offsets, layout equipment in a field setting, and allow for straight orientation of installed elements. There is a direct cross over with math and scientific data as a discipline in this course.

C2. Develop competencies in communication or computation, and apply the appropriate technical, interpretive, and evaluative skills;

Matching course component(s):
Sheet metal students are required to develop competencies in both communication and computation. As a part of their program, students are challenged to evaluate a problem, test solutions to that problem, and communicate to others what they have learned from these analytical processes. Sheet metal students are often required to switch between the discipline coding systems of math while fabricating a project and the discipline coding systems of other disciplines like communications and English when conveying the information they have learned. A main attribute of this field is communicating through symbols that are universally used throughout the field. A student must evaluate the symbols which are marked by other individuals and know how to build a project based on that notation. Shop notes also play a major role where students must learn how to interpret design intent of a mechanical system and later use that design intent to detail a project. Students must evaluate project documents and specifications to create a detail building plan.

APSM 102 BTSM Program, Year 1, Semester 1, Module 2-8 (Basic Layout). Students learn the symbols and markings that are typical in a sheet metal shop to identify brake and form lines. Students are equipped with the resources to receive material in a sheet metal shop notated with shop markings, and produce the desired project outcome based on symbol identification.

APSM 107 BTSM Program, Year 2, Semester 1, Module 7-4 (Intro to Plan Grid). Students gain an introductory use of the Autodesk software Plan Grid, a digital construction communication tool seen commonly in field

and shop activities. Students use the software to read mechanical plans, identify fittings, and communicate to the instructor for approval to fabricate. In a field setting, Plan grid is effectively used to notate changes to designs, problems seen in fabrication/installation, and necessary vendor information.

C3. Read, interpret, and analyze statements and then be able to express them in symbolic form when appropriate;

Matching course component(s):
Sheet metal students are continuously reading, interpreting and analyzing design intent prints. Students will use a range of different modalities to express what they have learned including written emails, notes and reports. Additionally, students will use non verbal communication within their HazCom course communicating through color diagrams, signs and symbols. Often students are called upon to utilize symbolic form when communicating construction standards.

APSM 102 BTSM Program, Year 1, Semester 1, Module 2-12 (HazCom). Through classroom lecture, students learn to properly identify OSHA pictograms used in hazard communication. There are 9 total pictograms used to relay information of potential hazards including flammables, oxidizers, corrosives, explosives, chemicals, Acute toxicity, environmental pollutants, health hazard, irritants, and gas cylinders. A sheet metal worker tasked with completing a job has to properly identify the use or exposure to these hazards, and notate accordingly.

APSM 113 BTSM Program, Year 3, Semester 1, Module 14-13 (Introduction to Welding Symbols) Students are required to understand welding symbols as recognized by the American Welding Society. Students should be able to analyze a weldment, and express the processes in symbolic form. This understanding is essential to completing welded assemblies which are capable of passing inspections.

APSM 103 BTSM Program, Year 1, Semester 1, Module 3-7 (Construction Standards). Students are tasked with reading and interpreting SMACNA standards for hanger layout, duct construction standards, field fabrication, etc. Through reading and understanding of these standards, students can create detailed construction drawings showing locations and methodologies of field and shop fabrication activities expressed in symbols.

C4. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

Matching course component(s):
Sheet metal students are called upon to clearly express their ideas throughout the course work of the program. They must use a variety of modalities to communicate in this discipline including, memos, email, oral presentations, and blueprint feedback. Sheet metal students often work through collaboration to express their work and ideas. Through written memos and reports students produce work explaining equipment functionality. Students must also verbally communicate the logical cycle of test functions for equipment. In collaboration with engineers, students will produce a written chart notating pressures. This process must be clear and precise for functionality.

APSM 103 BTSM Program, Year 1, Semester 2, Module 3-9 (Communication Skills). Students during classroom lecture are taught effective communication skills in the construction industry. Throughout the lesson students view scenarios depicting situations which require either verbal or written responses. In practicing effective communication, students view a situation and draft a professional email addressing the scenario posed.

APSM 122 BTSM Program, Year 4, Semester 4, Module 22-9 (Duct Leakage Testing Calculations and report forms). Students will perform the functions of duct leakage testing. This process involves analyzing job specifications for allowable leakage, understanding pressure test machine chart symbols, and producing an organized document used for official commissioning of a project which shows the operating conditions of an HVAC system.

APSM136 BTSM Program, Year 4, Semester 4, Module 36-9 (Mechanical Acceptance Testing). Students perform the functions of Mechanical Acceptance Testing and complete Non Residential Compliance Acceptance Forms (NRCA-MCH forms). NRCA forms are used to display compliance to California's Title 24

standards. The forms cover functional testing of HVAC and Hydronic systems. These forms are used as official documentation in the Testing Adjusting and balancing of a project, which is essential for commissioning.

Depth Map: should include some or all:

C5. Critically assess other people's ideas; and organize, edit, and evaluate their own ideas in order to articulate a position;

Matching course component(s):
Sheet metal students collaborate in a number of ways throughout their courses to assess each other's work and share and evaluate ideas. To start they must understand the design intent coming from the curriculum provider. By examining the plans and specs they must interpret a plan to proceed and where they have questions they must inquire through verbal instructions with a project manager. There is a clear process of RFI (Request for Information) where students learn to reach out verbally for clarification from project managers and engineers, interpret feedback, then offer revisions and take a final position. Students also learn to use this feedback loop when assessing responses from clients and customers and must take this information in for their final evaluation.

APSM 125 BTSM Program, Year 5, Semester 3, Module 25-4 (Preparation for Shop Drawings). Students analyze project drawings for "Grand Valley State University" in efforts to prepare a shop drawing used for field installation. In reviewing the documents, the project detailer gets an understanding of the design intent of the mechanical, structural, and electrical engineers, as well as the limitations in constructability of the project. Understanding jobsite specifications and environmental limitations, allows the detailer to produce a drawing showing HVAC and equipment placement, which satisfies the design intent, while remaining constructible.

The APSM 125 class which is referenced is very collaborative. In terms of peer review, this creation of the drawing is a method of peer review. It is understanding a design intent which comes from one source, and then gets vetted with constructability concerns addressed. The detailed drawing which is produced, is then sent to a sheet metal shop, where fabricators collaborate on building fittings to be installed based on cut sheets drawn by a detailer. The detailed plan is also sent to a field setting where the installers critically assess the installation drawings. Often in this process there are questions, requests for information, and clarity provided with verbal and written communication.

C6. Identify goals when applying analytical skills;

Matching course component(s):
Sheet metal students rely continuously on identifying project and building goals to complete coursework. Students must call on a number of analytical skills like deductive reasoning, problem solving, and assessing the cause and effect of certain systems to name a few. One way they accomplish this is to study the workings of the HVAC system; identifying areas of concern or problems, applying potential solutions, eventually working through a testing process to achieve a balanced system.

APSM 175A BTSM Program, Year 4, Semester 1, Module 153AB-4 (Fan Laws Lab Assignment) Students learn Fan Laws which allow for effective balancing of an HVAC or Hydronic system. The fan laws allow for a balancer to take active measurements of an HVAC system and increase or reduce flow based on the live measurements relation to design intent. By understanding the fan laws a balancer can identify the "goal" or design intent of an HVAC system and balance accordingly.

C7. Recognize limitations of applicable methodologies;

Matching course component(s):
The importance of problem solving is a value instilled in the sheet metal curriculum. A key to problem solving is to recognize when limitations arise. One way students learn this is recognizing the limitations of equipment and tools. Students then learn how to communicate through problems. There is a peer review process where students critique the methods being used on a project. Students are made aware of what happens when things go wrong and how to listen to multiple points of view in order to navigate around

limitations and lead to efficient design choices. Sheet metal students learn the industry methods such as knowledge of fitting or measuring with right triangles to ensure proper use of industry systems like the HVAC system.

APSM 159A BTSM Program, Year 4, Semester 1, Module 153A-9 (Measuring and Obtaining Fan Performance Data). Students understand the limitations of HVAC Fan equipment. Understanding the limitations of equipment attached to the HVAC system allows a balancer to analyze problems related to the design of the system. Often in the industry, equipment is incorrectly under or oversized creating issues with energy consumption, airflow, and construction methodologies such as material gauges.

APSM 120 BTSM Program, Year 5, Semester 1, Module 20-5 (Right Triangles) A sheet metal worker's understanding of right triangles is the foundation in completing shop and field layout. The right triangle throughout the program is used to calculate duct offsets, layout equipment in a field setting, and allow for straight orientation of installed elements. There is a direct cross over with math and scientific data as a discipline in this course.

C8. Use current technologies for discovering information and techniques for communication, analysis, evaluation, problem solving, decision-making, and presentation.

Matching course component(s):
Sheet metal students learn to use a number of technologies - Autocad / 3D modeling; Plan Grid; Bluebeam - within a course and throughout the program developing a mastery of the technology to assist in problem solving and decisions.
Additionally, for communication purposes mechanical prints play a pivotal role in their learning process. Students learn how to read, evaluate and create mechanical prints. To create these prints students must solve problems, make decisions and present their findings. Within this process students will go through an evaluation and heed feedback from project managers to make decisions on proper fittings.

APSM 127 BTSM Program, Year 5, Semester 4, Module 27-6 (The Floor Plan) Students learn and demonstrate understanding of the Autodesk software Autocad to create a floor plan used for field and shop communication. A detailer while modeling HVAC systems using Autocad, encounters issues in construction which get resolved through design revisions and requests for information to the project managers, architects, and engineers. The process of creating mechanical prints, is the communication which takes fittings from sheet metal shops, and installs them in the intended space.

APSM 107 BTSM Program, Year 2, Semester 1, Module 7-4 (Intro to Plan Grid). Students gain an introductory use of the Autodesk software Plan Grid, a digital construction communication tool seen commonly in field and shop activities. Students use the software to read mechanical plans, identify fittings, and communicate to the instructor for approval to fabricate. In a field setting, Plan grid is effectively used to notate changes to designs, problems seen in fabrication/installation, and necessary vendor information.

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):
Sheet metal students must communicate in a variety of formats. Whether it is engaging with other workers or supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively.

Sheet Metal courses including but not limited to (APSM 105, APSM 102, APSM 101) BTSM Program, Year 1, Semester 2, Modules 5- #1-#13 (FSD training), BTSM Program, Year 1, Semester 1, Modules 2- #1-#14 (Math, Layout Basics, and Safety), BTSM Program, Year 1, Semester 1, Modules 1- #1-#18 (Trade Introduction)

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

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

Matching course component(s):
Because the application of what sheet metal students learn and practice must be extremely precise to meet all existing codes and regulations, students learn and apply many mathematical concepts and data collection models.

Sheet Metal courses including but not limited to (APSM 116, APSM 119, APSM 127) BTSM Program, Year 3, Semester 4, Modules 16- #1-#14 (Plans and Specifications), BTSM Program, Year 3, Semester 4, Modules 19- #1-#12 (HVAC Air Systems and Duct Design), BTSM Program, Year 5, Semester 3, Modules 27- #1-#8 (Basic Autocad)

B3. Creative, critical, and analytical thinking (reasoning, questioning, problem solving, and consideration of consequence).

Matching course component(s):
Sheet metal students must communicate in a variety of formats. Whether it is engaging with other workers or supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively.

Sheet Metal courses including but not limited to (APSM 105, APSM 102, APSM 101) BTSM Program, Year 1, Semester 2, Modules 5-#1-#13 (FSD training), BTSM Program, Year 1, Semester 1, Modules 2-#1-#14 (Math, Layout Basics, and Safety)

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):
Students in the sheet metal program meet this standard in a variety of ways. Their training includes courses on the environmental impact of their work on the planet. They also learn about the role of their union in advancing the social and economic opportunities for historically marginalized groups. And through on the job training and other required program elements, sheet metal students also learn the real-world importance of their actions and behaviors on others.

Sheet Metal courses including but not limited to (APSM 122, APSM 119, APSM 175A, APSM 101) BTSM Program, Year 4, Semester 4, Modules 22-#1-#15 (Codes and Standards), BTSM Program, Year 3, Semester 4, Modules 19-#1-#12 (HVAC Air Systems and Duct Design), BTSM Program, Year 4, Semester 1, Modules 153A- #1-#10 (TABB Technician Certification BTSM Program, Year 1, Semester 1, Module 1-11 (Bias and Belonging)

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: Gina Firenzi Date: 5/3/24

Division Curriculum Rep: Timothy Myres Date: 5/7/24

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____Date: _____

General Education Review Request
AREA VII - LIFELONG LEARNING

Course Number & Title: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)

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 VII – Lifelong Learning:

Courses in this area provide students with the skills needed to continue learning after they leave college. Courses focus on the study of humans as integrated intellectual, physiological, social and psychological beings in relation to society and the environment. Full understanding and synthesis of a subject area usually occurs when the skills mastered in a course of study are applied to the context of another discipline. Students are given an opportunity to experience this concept in courses that provide opportunities that bridge subject areas so that students learn to function as independent and effective learners.

Physical activity courses are given inclusion to this area in recognition of the reality that you have to be healthy and live a long life in order to take advantage of lifelong learning. Foothill College deems that: Physical activity courses are acceptable, if they entail movement by the student and are overseen by a faculty member or coach. These courses can be taken for up to 2 units.

A course meeting the Lifelong Learning General Education Requirement ***must*** help students:
L1. Acquire and demonstrate knowledge, skills, and attitudes that support the application of information across two or more disciplines of study;
L2. Develop practical tools that can be integrated into problem solving and decision making with current day-to-day issues and which can be adapted to future situations;
L3. Identify current issues and concerns that influence health, communication or learning;
L4. Comprehend and apply health and well-being issues to the individual and to society;
L5. Find, evaluate, use and communicate information in all of its various formats and understand the ethical and legal implications of the use of that information.

In addition, a course meeting this requirement ***must*** include ***at least one*** of the following student learning outcomes:
L6. Define career and life planning strategies and resources including goal setting and time management, learning styles and self-awareness, building a positive work ethic and leadership qualities;
L7. Analyze beliefs, attitudes, biases, stereotypes, and behaviors in individuals and communities regarding temporary needs, problems and concerns facing society;
L8. Understand the importance of physical fitness and its impact on an individual's physical and mental health;
L9. Use technology to analyze problems and create solutions.

General Education Review Request
AREA VII - LIFELONG LEARNING

Course Number & Title: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)

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:

L1. Acquire and demonstrate knowledge, skills, and attitudes that support the application of information across two or more disciplines of study;

Matching course component(s):
The disciplines within the building trades require a multidisciplinary approach to the study and execution of their work. HVAC students, for example, will frequently need to call upon several disciplines concomitantly in a single project or class. And HVAC student's analysis of a schematic can require math, English, and social science.

(HVAC Program, Year 3, Semester 2, Module 15, 16, 17: Control Systems, Pneumatic Controls, DDC Controls)

The following apprenticeship courses: APPT 152, APPT 154, APPT 159

Example: This semester integrates principles from electrical and mechanical engineering through the study of control systems, emphasizing the application of these principles in practical settings.

L2. Develop practical tools that can be integrated into problem solving and decision making with current day-to-day issues and which can be adapted to future situations;

Matching course component(s):
In the spirit of this standard, HVAC students are learning skills and ways of thinking that have applications in all aspects of their lives. The problem-solving needed to determine the specs for fabrication of a component in a refrigeration system are easily applicable in determining personal decisions in a variety of everyday activities outside of college.

(HVAC Program, Year 2, Semester 1, Module 8 and 9: Refrigeration, Refrigeration Controls)

The following apprenticeship courses: APPT 153, APPT 154, APPT 158

Example: Courses focus on understanding mechanical and refrigeration systems, providing apprentices with the tools to make informed decisions regarding system maintenance and troubleshooting.

L3. Identify current issues and concerns that influence health, communication or learning;

Matching course component(s):
HVAC students are required to maintain currency in their field particularly in the areas of hazard mitigation and the handling, storage and disposal of hazardous materials.

(HVAC Program, Year 1, Semester 1, Module 3: Trade Related Safety & Environment)

The following apprenticeship courses: APPT 151, APPT 152

Example: Safety training including OSHA standards and workplace hazards helps apprentices understand and mitigate risks associated with HVACR work.

L4. Comprehend and apply health and well-being issues to the individual and to society;

Matching course component(s):
HVAC students, like many in the professional trades, have made conscious and informed decisions to become HVAC journeymen. They both know and live the economic value of their work on their own personal wellbeing and the betterment of society.

(HVAC Program,Year 5, Semester 1, Module 23 and 24: Air Side, Water Side Start Test & Balance)

The following apprenticeship courses: APPT 158, APPT 159

Example: Focuses on the importance of accurate system testing and balancing, critical for ensuring safe and healthy indoor air quality.

L5. Find, evaluate, use and communicate information in all of its various formats and understand the ethical and legal implications of the use of that information.

Matching course component(s):
HVAC students do not learn and work in a vacuum. Their testing and evaluation procedures include assessments of their technical skills and their understanding of their ethical and legal responsibilities in executing their jobs. Every HVAC student knows that not only their own personal survival depends on their safe execution of their jobs, but also the safety of many others who may occupy or otherwise inhabit the spaces they helped to fabricate.

(HVAC Program, Year 4, Semester 1, Module 19: Commercial HVACR Equipment)

The following apprenticeship courses: APPT 157, APPT 158

Example: Apprentices are taught to use technical documentation and CAD tools for system design and troubleshooting, enhancing their ability to use information effectively.

Depth Map: Additionally, must include at least one of the following:

L6. Define career and life planning strategies and resources including goal setting and time management, learning styles and self-awareness, building a positive work ethic and leadership qualities;

Matching course component(s):
The HVAC program is wraparound. Students receive assistance in many aspects of their lives and their careers. HVAC students are also provided the tools and resources to know where they need to improve and how they can get assistance making those improvements.

(HVAC Program, Year 1, Semester 1, Module 1: Union Heritage)

The following apprenticeship courses: APPT 151, APPT 129

Example: Orientation modules discuss career pathways in HVACR, helping apprentices plan their professional development.

L7. Analyze beliefs, attitudes, biases, stereotypes, and behaviors in individuals and communities regarding temporary needs, problems and concerns facing society;

Matching course component(s):

L8. Understand the importance of physical fitness and its impact on an individual's physical and mental health;

Matching course component(s):

L9. Use technology to analyze problems and create solutions.

Matching course component(s):
Students in the HVAC program are taught multiple technologies in the course of their study and practice, everything from auto-cad to airflow analysis.

(HVAC Program, Year 4, Semester 2, Module 21 and 22: Boilers and Chillers)

The following apprenticeship courses: APPT 158, APPT 159

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):
HVAC apprenticeship students complete coursework using analytical reading, writing, speaking skills including evaluation, synthesis and research throughout the program – specifically students learn about and describe control systems, safe work practices including handling high pressure gas cylinders, various heating equipment, and Personal Protective Equipment (PPE).

(HVAC Program, Year 3, Semester 2, Module 15 - Control Systems); (HVAC Program, Year 3, Semester 2, Module 16 - Pneumatic Controls); (HVAC Program, Year 3, Semester 2, Module 17 - DDC Controls)

The following apprenticeship courses: APPT 154, APPT 156

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

Matching course component(s):
HVAC Apprenticeship students use computation throughout the program including in units such as "APPT 155 Advanced Electrical Controls" that requires use of Ohm's Law to determine wiring schematic values, discussion of meter usage diagrams in the electrical sequence of operation, conducting meter usage and alternating lights labs, and describing HVAC system load calculations, designs, and balancing.

(HVAC Program, Year 3, Semester 1, Module 13 - Advanced Electrical Controls)

The following apprenticeship courses: APPT 155, APPT 156, APPT 158, APPT 159

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

Matching course component(s):
HVAC Apprenticeship students analyze the relationships of business and economic activities to the functioning of society as a whole in units on the evolution of service, identifying customers and constructive communication styles, including developing listening, clarifying and empathy skills. This is done in the process of developing a critical eye.

(HVAC Program, Year 1, Semester 1, Module 2 - Customer Service)

The following apprenticeship courses: APPT 151, APPT 154, APPT 158

B4. Community and global consciousness and responsibility (consideration of one's role in society at the local, regional, national, and global level in the context of cultural constructs and historical and contemporary events and issues).

Matching course component(s):

B5. Information competency (ability to identify an information need, to find, evaluate and use information to meet that need in a legal and ethical way) and digital literacy (to teach and assess basic computer concepts and skills so that people can use computer technology in everyday life to develop new social and economic opportunities for themselves, their families, and their communities).

Matching course component(s):

General Education Review Request
AREA VII - LIFELONG LEARNING

Requesting Faculty: Robert Cormia Date: 5/3/24

Division Curriculum Rep: Tim Myres Date: 5/8/24

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____ Date: _____

General Education Review Request
AREA VII – LIFELONG LEARNING

Course Number & Title: Sheet Metal Apprenticeship Program

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 VII – Lifelong Learning:

Courses in this area provide students with the skills needed to continue learning after they leave college. Courses focus on the study of humans as integrated intellectual, physiological, social and psychological beings in relation to society and the environment. Full understanding and synthesis of a subject area usually occurs when the skills mastered in a course of study are applied to the context of another discipline. Students are given an opportunity to experience this concept in courses that provide opportunities that bridge subject areas so that students learn to function as independent and effective learners.

Physical activity courses are given inclusion to this area in recognition of the reality that you have to be healthy and live a long life in order to take advantage of lifelong learning. Foothill College deems that: Physical activity courses are acceptable, if they entail movement by the student and are overseen by a faculty member or coach. These courses can be taken for up to 2 units.

A course meeting the Lifelong Learning General Education Requirement ***must*** help students:
L1. Acquire and demonstrate knowledge, skills, and attitudes that support the application of information across two or more disciplines of study;
L2. Develop practical tools that can be integrated into problem solving and decision making with current day-to-day issues and which can be adapted to future situations;
L3. Identify current issues and concerns that influence health, communication or learning;
L4. Comprehend and apply health and well-being issues to the individual and to society;
L5. Find, evaluate, use and communicate information in all of its various formats and understand the ethical and legal implications of the use of that information.

In addition, a course meeting this requirement ***must*** include ***at least one*** of the following student learning outcomes:
L6. Define career and life planning strategies and resources including goal setting and time management, learning styles and self-awareness, building a positive work ethic and leadership qualities;
L7. Analyze beliefs, attitudes, biases, stereotypes, and behaviors in individuals and communities regarding temporary needs, problems and concerns facing society;
L8. Understand the importance of physical fitness and its impact on an individual's physical and mental health;
L9. Use technology to analyze problems and create solutions.

General Education Review Request
AREA VII – LIFELONG LEARNING

Course Number & Title: Sheet Metal 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:

L1. Acquire and demonstrate knowledge, skills, and attitudes that support the application of information across two or more disciplines of study;

Matching course component(s):
Sheet metal students acquire and demonstrate the knowledge skills and attitudes towards information across many disciplines as they matriculate through their program of study. For example, students must learn the math skills necessary to complete a variety of requirements in the program where precise measurements are critical. Students in the program must also communicate their work to various stakeholders using the discipline's reading and writing conventions.

APSM 110 BTSM Program, Year 2, Semester 3, Module 10-6 (Measuring Techniques and Tools). Students gain an understanding on the types of measurements needed in the sheet metal industry, and the various tools that can correctly perform the task. The lesson covers various methods and practices to attain critical measurements in order to install architectural and mechanical systems. Measuring tools transfers to multi disciplines within the trade for fabrication as well as system design.

APSM 103 BTSM Program, Year 1, Semester 1, Module 3-3 (Geometric Principles). Students learn concepts of geometric principles and apply techniques learned to layout patterns. Principles in this course are used for layout concepts in the field, and in shop fabrication.

L2. Develop practical tools that can be integrated into problem solving and decision making with current day-to-day issues and which can be adapted to future situations;

Matching course component(s):
All the disciplinary requirements for the sheet metal program have practical daily applications that will serve the students in the program for the rest of their lives. Sheet metal students learn about the importance of mutual respect at the job sites where they train, which in turn reinforces their training in ethics, business standards, and the enriching features of diversity they've studied in their classes.

APSM 121 BTSM Program, Year 5, Semester 2, Module 21-4 (Preparing for a Project) Students will gain experience learning and preparing for simulated jobsite tasks of a project manager preparing for jobsite mobilization. Based on previous job success rates, proper jobsite planning leads to successful projects. Projects often include overcoming issues in design criteria or installation.

APSM 104 BTSM Program, Year 1, Semester 2, Module 4-9 (Communication Skills). Students during classroom lecture are taught effective communication skills in the construction industry. Students in the lesson are taught to analyze problems and develop proposed solutions which are effectively communicated and implemented.

L3. Identify current issues and concerns that influence health, communication or learning;

Matching course component(s):
As part of their course of study, sheet metal students learn details of the health and safety standards they must follow. In addition, the students must maintain currency in their discipline and renew their training when required.

APSM 119 BTSM Program, Year 4, Semester 1, Module 19-10 (Indoor Air Quality). Concepts of the scientific method are performed in the IAQ curriculum through an understanding of hazardous effects of an improperly installed or adjusted system. Technicians are able to analyze a system's functioning by symptoms experienced in the building occupants such as "Sick Building Syndrome" or CO2 poisoning. Once problems are noted, technicians can make corrections based on the hazards or inefficiencies experienced.

APSM 102 BTSM Program, Year 1, Semester 1, Module 2-11 (Managing Safety and Health). Students review real life jobsite fatalities and injuries and assess the root cause of the situation. In identifying the root cause of the issue, students develop and learn protocols to prevent jobsite injuries and fatalities with best practices.

APSM 102 BTSM Program. Year 1, Semester 1 Module 2- 14 (Stairways and Ladders) Students review, understand and practice OSHA requirements for stairways and ladders used in construction. This process involves an understanding of current OSHA requirements as well as implementation of inspection criteria, and the possibility of tagging ladders and stairways as unsafe.

L4. Comprehend and apply health and well-being issues to the individual and to society;

Matching course component(s):
The health and well-being of the individual and society is a core study and practice in the sheet metal program. The complexity of the work the students do mixed with the toxicity of some of the materials they work with make it necessary for students in the program to learn everything from how to recognize asbestos hazards to basic first aid and life safety.

APSM 104 BTSM Program, Year 1, Semester 3, Module 4-10 (Asbestos Awareness). Asbestos awareness training uses scientific evidence based on known hazards of Asbestos exposure experienced above the permissible exposure limit, and proper identification and mitigation of the hazard. Students and workers in the construction industry, often work in existing buildings which contain hazardous asbestos. Students cover the OSHA criteria for hazard assessment, monitoring, hazard communication and training.

APSM 101 BTSM Program, Year 1, Semester 1, Module 1-3 (Coyne First Aid and Basic Life Safety)
Students practice reasoning skills to properly identify and address first aid emergencies which can occur. The course builds a baseline of first aid/safety through an environment analysis, and information on proper handling of injured persons. Paramount through the first aid course is using reasoning skills to not put the first aid responder at risk of injury, and to provide the best immediate care to the injured. Injuries such as electrical burns, fire hazards, fall hazards or confined space injuries, can pose serious problems to an individual looking to provide help in basic life safety and first aid.

L5. Find, evaluate, use and communicate information in all of its various formats and understand the ethical and legal implications of the use of that information.

Matching course component(s):
Sheet metal students learn and work in an industry that is profoundly shaped by the legal implications of their work. They are therefore required to use all of their disciplinary knowledge to comply with the codes and standards of their profession.

APSM 119 BTSM Program, Year 4, Semester 1, Module 19-5 (Duct Leakage Testing) Students complete hands on Duct Leakage testing based on the information presented in class lecture. Students must calculate air leakage rates, demonstrate how to seal leaks, reference duct leakage standards, perform testing procedures, and determine the overall allowable leakage of a duct system. This hands on activity is then applied through certification testing completed through the International Certification Bureau. This process is necessary for commissioning of a project which legal documents are submitted. Communication of systems which do not perform to a criteria is required to installation teams, project foreman, and project managers.

APSM136 BTSM Program, Year 4, Semester 4, Module 36-9 (Mechanical Acceptance Testing). Students perform the functions of Mechanical Acceptance Testing and complete Non Residential Compliance Acceptance Forms (NRCA-MCH forms). NRCA forms are used to display compliance to California's Title 24 standards. The forms cover functional testing of HVAC and Hydronic systems. These forms are used as official documentation in the Testing Adjusting and balancing of a project, which is essential for commissioning.

General Education Review Request
AREA VII – LIFELONG LEARNING

Depth Map: Additionally, must include at least one of the following:

L6. Define career and life planning strategies and resources including goal setting and time management, learning styles and self-awareness, building a positive work ethic and leadership qualities;

Matching course component(s):
Students studying sheet metal are by definition in a career defining program. Their success in the program is supported in a number of ways including the support courses available to them in a tutorial setting.

APSM 101 BTSM Program, Year 1, Semester 1, Module 1-7 (Classroom Survival Skills). Students during classroom lecture are taught to identify keywords, build effective study habits, and use online resources for course assignments and reading material. Time management is a focus on the coursework as it applies to not only in classroom activities but directly relates to employable practices in the field and shop.

L7. Analyze beliefs, attitudes, biases, stereotypes, and behaviors in individuals and communities regarding temporary needs, problems and concerns facing society;

Matching course component(s):

L8. Understand the importance of physical fitness and its impact on an individual's physical and mental health;

Matching course component(s):

L9. Use technology to analyze problems and create solutions.

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):
Sheet metal students must communicate in a variety of formats. Whether it is engaging with other workers or supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively.

Sheet Metal courses including but not limited to (APSM 105, APSM 102, APSM 101)

BTSM Program, Year 1, Semester 2, Modules 5- #1-#13 (FSD training), BTSM Program, Year 1, Semester 1, Modules 2- #1-#14 (Math, Layout Basics, and Safety), BTSM Program, Year 1, Semester 1, Modules 1- #1-#18 (Trade Introduction)

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

Matching course component(s):
Because the application of what sheet metal students learn and practice must be extremely precise to meet all existing codes and regulations, students learn and apply many mathematical concepts and data collection models.

Sheet Metal courses including but not limited to (APSM 116, APSM 119, APSM 127)

BTSM Program, Year 3, Semester 4, Modules 16- #1-#14 (Plans and Specifications), BTSM Program, Year 3, Semester 4, Modules 19- #1-#12 (HVAC Air Systems and Duct Design), BTSM Program, Year 5, Semester 3, Modules 27- #1-#8 (Basic Autocad)

General Education Review Request
AREA VII – LIFELONG LEARNING

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

Matching course component(s):
Sheet metal students must communicate in a variety of formats. Whether it is engaging with other workers or supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively.

Sheet Metal courses including but not limited to (APSM 105, APSM 102, APSM 101)

BTSM Program, Year 1, Semester 2, Modules 5-#1-#13 (FSD training), BTSM Program, Year 1, Semester 1, Modules 2-#1-#14 (Math, Layout Basics, and Safety), BTSM Program, Year 1, Semester 1, Modules 1-#1-#18 (Trade Introduction)

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):
Students in the sheet metal program meet this standard in a variety of ways. Their training includes courses on the environmental impact of their work on the planet. They also learn about the role of their union in advancing the social and economic opportunities for historically marginalized groups. And through on the job training and other required program elements, sheet metal students also learn the real-world importance of their actions and behaviors on others.

Sheet Metal courses including but not limited to (APSM 122, APSM 119, APSM 175A, APSM 101)

BTSM Program, Year 4, Semester 4, Modules 22-#1-#15 (Codes and Standards), BTSM Program, Year 3, Semester 4, Modules 19-#1-#12 (HVAC Air Systems and Duct Design), BTSM Program, Year 4, Semester 1, Modules 153A- #1-#10 (TABB Technician Certification BTSM Program, Year 1, Semester 1, Module 1-11 (Bias and Belonging)

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):
APSM 101 BTSM Program, Year 1, Semester 1, Module 1-2 (Intro to Electronic Tablets). Students are given a tool of an IPad which is used for classroom activities throughout the apprenticeship program. Students develop best practices for maintaining the technology as well as professional communication and navigation of the tablet.

APSM 127 BTSM Program, Year 5, Semester 4, Module 27-6 (The Floor Plan) Students learn and demonstrate understanding of the Autodesk software Autocad to create a floor plan used for field and shop communication. A detailer while modeling HVAC systems using Autocad, encounters issues in construction which get resolved through design revisions and requests for information to the project managers, architects, and engineers. The process of creating mechanical prints, is the communication which takes fittings from sheet metal shops, and installs them in the intended space.

APSM 107 BTSM Program, Year 2, Semester 1, Module 7-4 (Intro to Plan Grid). Students gain an introductory use of the Autodesk software Plan Grid, a digital construction communication tool seen commonly in field and shop activities. Students use the software to read mechanical plans, identify fittings, and communicate to the instructor for approval to fabricate. In a field setting, Plan grid is effectively used to notate changes to designs, problems seen in fabrication/installation, and necessary vendor information.

Requesting Faculty: Robert Cormia Date: 5/6/24

General Education Review Request
AREA VII – LIFELONG LEARNING

Division Curriculum Rep: Tim Myres Date: 5/8/24

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____ Date: _____

Retail Operations Specialist, Certificate of Achievement

Basic Information

Faculty Author(s)

Users
Gina Firenzi

Department
Apprenticeship

Division
Apprenticeship

Title of Degree/Certificate
Retail Operations Specialist

Type of Award
Certificate of Achievement

Workforce/CTE Program:
Yes

Effective Catalog Edition:
2024-2025

Certificate of Achievement Workforce Narrative

Program Goals and Objectives
The general objective of the Certificate of Achievement in Retail Operations Specialist is to prepare students for entry-level positions in retail operations. The program involves recognizing the value of growth mindset and overcoming negative habits and barriers that hinder growth and success in the workplace. Students will also learn collaboration with team members, inventory management, cost and budget management, and revenue generation. Additionally, the program emphasizes the utilization of merchandising processes to build brand image and customer loyalty. The academic goal of the certificate is to create a pathway to an associate degree in Business Administration and facilitate transfer to a four-year institution.

Program Learning Outcomes

- Students will be able to identify fixed mindsets and promote growth mindsets and resiliency to be successful in the workplace.

- Students will be able to explain how retailers use merchandising processes to build a brand image and customer loyalty.
- Students will be able to discuss the process of inventory management, merchandising, and valuation strategies leading to excellent customer service and sales.
- Students will be able to recognize the financial implication of strategic retail decisions.
- Students will be able to demonstrate an understanding of decisions retailers make to satisfy customer needs in a rapidly changing and competitive environment.
- Students will be able to collaborate with team members to work through conflicts, problem solve, and achieve efficient results.
- Students will be able to establish and use Kaizen decision-making, goal setting, problem solving, and time management skills to address personal/professional development issues.
- Students will be able to assess the planning process and apply basic tenets in management and problem solving.
- Students will be able to understand best practices for effective management and analyze the impact on organizational performance.

Catalog Description

The Certificate of Achievement in Retail Operations Specialist provides students with in-class instruction and paid on-the-job training to kickstart their careers with Goodwill of Silicon Valley and advance in the retail industry. Upon completion of the certificate, students will acquire skills in retail merchandising, pricing, the Kaizen mentality, and methods to solve organizational and workplace challenges. Additionally, they will gain a fundamental understanding of business management. Graduates of the program will be eligible to receive a certificate of achievement from Foothill and a certificate from the CA State Division of Apprenticeship Standards and Federal Department of Labor Office of Apprenticeship.

Per California Code of Regulations, this program is limited to students admitted to the Goodwill Retail Operations Specialist Apprenticeship program.

Program Requirements

Core Course Units: 12

Course List

Code	Title	Units
APPR F140A	GOODWILL HUMAN & PROCESS DEVELOPMENT	4
APPR F140B	RETAIL MARKETING, MERCHANDISING & CUSTOMER SERVICE	4
BUSI F090A	PRINCIPLES OF MANAGEMENT	4

Total Units: 12

Proposed Sequence

Term	Units
Year 1, Fall	4
Year 1, Winter	4
Year 1, Spring	4

Master Planning

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. This certificate provides underrepresented students of color with an academic pathway to higher education and a progression toward a Business Administration degree.

Enrollment and Completer Projections

We project to have 14-16 students completed by Spring, 2024. The projection is based on our current enrollment. After five years, we project to have about 60-75 students completed the program.

Historical Enrollment Data

Course #	Course Title	Y1 - Annual Sections	Y1 - Annual Enrollment	Y2 - Annual Sections	Y2 - Annual Enrollment
APPR 140A	Goodwill Human & Process Development	1	21	N/A	N/A
APPR 140B	Retail Marketing, Merchandising & Customer Service	1	16	N/A	N/A
BUSI 090A	Principles of Management	1	16	N/A	N/A

Place of Program in Curriculum/Similar Programs

This program offers an opportunity for Foothill College to collaborate with Goodwill of Silicon Valley in providing instructional and support services to a newly registered non-traditional apprenticeship program known Retail Operations Specialist (Approved Standards #101119).

Similar Programs at Other Colleges in Service Area

There is no similar program offered in Foothill's service area. However, Las Positas Community College offers a similar program in partnership with another employer.

Additional Information Required for State Submission

TOP Code: 0506.50 - Retail Store Operations and Management

CIP Code: 52.1803 - Retailing and Retail Operations.

Will any new resources be required (e.g., facilities, equipment, personnel)? No

Gainful Employment: Yes

Distance Education: 100%

Labor Market Information Report
Customer Service Occupations
Foothill College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

December 2023

Recommendation

Based on all available data, there appears to be an "undersupply" of Customer Service workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara county). There is a projected annual gap of about 17,981 students in the Bay region and 4,221 students in the Silicon Valley Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0506.50 - Retail Store Operations and Management programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at Foothill College and in the region.

This report profiles Customer Service Occupations in the 12 county Bay region and in the Silicon Valley sub-region for an existing low unit, local certificate(s) for Customer Service Specialist at Foothill College.

- **Retail Salespersons (41-2031):** Sell merchandise, such as furniture, motor vehicles, appliances, or apparel to consumers. Excludes "Cashiers" (41-2011).
  Entry-Level Educational Requirement: No formal educational credential
  Training Requirement: Short-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 38%

- **Customer Service Representatives (43-4051):** Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints. Excludes individuals whose duties are primarily installation, sales, or repair.
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Short-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 42%

Occupational Demand

Table 1. Employment Outlook for Customer Service Occupations in Bay Region

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Retail Salespersons	72,742	72,839	96	0%	54,986	10,997	$15	$17
Customer Service Representatives	43,832	46,823	2,990	7%	35,022	7,004	$18	$22

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Total	**116,575**	**119,661**	**3,087**	**3%**	**90,007**	**18,001**		

Source: Lightcast 2022.3

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Customer Service Occupations in Silicon Valley Sub-region

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Retail Salespersons	16,824	16,455	-369	-2%	12,431	2,486	$17	$17
Customer Service Representatives	11,086	11,730	643	6%	8,674	1,735	$20	$23
Total	**27,910**	**28,184**	**274**	**1%**	**21,104**	**4,221**		

Source: Lightcast 2022.3

Silicon Valley Sub-Region includes: Santa Clara County

Job Postings in Bay Region and Silicon Valley Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months

Occupation	Bay Region	Silicon Valley
Retail Salespersons	37,227	8,338
Customer Service Representatives	20,149	4,294

Source: Lightcast

Table 4a. Top Job Titles for Customer Service Occupations for latest 12 months - Bay Region

Title	Bay	Title	Bay
Retail Sales Associates	5,183	Retail Sales Consultants	725
Sales Associates	4,921	Beauty Advisors	619
Customer Service Representatives	3,410	Retail Store Associates	514
Retail Associates	1,287	Customer Success Managers	480
Seasonal Sales Associates	1,061	Service Advisors	431
Customer Service Associates	1,024	Retail Sales Representatives	393
Store Associates	992	Outlet Sales Associates	361
Seasonal Retail Associates	898	Customer Service Specialists	334
Customer Service Cashiers	766	Sales Floor Associates	305

Source: Lightcast

Table 4b. Top Job Titles for Customer Service Occupations for latest 12 months - Silicon Valley Sub-Region

Title	Silicon Valley	Title	Silicon Valley
Sales Associates	1,236	Seasonal Retail Associates	160
Retail Sales Associates	1,028	Beauty Advisors	143
Customer Service Representatives	734	Customer Success Managers	137
Seasonal Sales Associates	270	Service Advisors	108
Retail Associates	253	Retail Store Associates	103
Customer Service Associates	237	Retail Sales Representatives	81
Store Associates	180	Client Service Representatives	78
Customer Service Cashiers	170	Customer Service Specialists	68
Retail Sales Consultants	161	Customer Service Agents	64

Source: Lightcast

Industry Concentration

Table 5. Industries hiring Customer Service Workers in Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2021)	Jobs in Industry (2026)	% Change (2021-26)	% Occupation Group in Industry (2022)
Clothing and Clothing Accessories Retailers	11,568	10,688	-8%	10%
Home Centers	5,132	4,546	-11%	4%
Department Stores	4,287	4,242	-1%	4%
Warehouse Clubs and Supercenters	4,388	4,147	-6%	3%
All Other General Merchandise Retailers	4,093	4,358	6%	3%
New Car Dealers	3,680	3,896	6%	3%
Supermarkets and Other Grocery (except Convenience) Stores	3,599	3,632	1%	3%
Electronics and Appliance Retailers	3,536	2,713	-23%	3%
Sporting Goods Retailers	3,279	3,281	0%	3%
Shoe Retailers	3,171	2,926	-8%	3%

Source: Lightcast 2022.3

Table 6. Top Employers Posting Customer Service Occupations in Bay Region and Silicon Valley Sub-Region

Employer	Bay	Employer	Silicon Valley
Macy's	1,387	Macy's	322
AT&T	1,181	AT&T	221

Employer	Bay	Employer	Silicon Valley
Gap	797	Nordstrom	214
Walgreens Boots Alliance	781	Walgreens Boots Alliance	148
T-Mobile US	639	T-Mobile US	140
TJX	611	Bloomingdale's	136

Source: Lightcast

Educational Supply

There are seven (7) community colleges in the Bay Region issuing 20 awards on average annually (last 3 years ending 2021-22) on TOP 0506.50 - Retail Store Operations and Management. In the Silicon Valley Sub-Region, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

Table 7a. Community College Awards on TOP 0506.50 - Retail Store Operations and Management in Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Chabot	East Bay	0	1	0	1
Laney	East Bay	0	0	0	0
Las Positas	East Bay	0	0	0	0
Los Medanos	East Bay	0	0	0	0
San Francisco	Mid-Peninsula	0	0	0	0
San Mateo	Mid-Peninsula	0	0	18	18
Solano	North Bay	1	0	0	1
Total		**1**	**1**	**18**	**20**

Source: Data Mart

Note: The annual average for awards is 2019-20 to 2021-22.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 18,001 annual openings for the Customer Service occupational cluster and 20 annual (3-year average) awards for an annual undersupply of 17,981 students. In the Silicon Valley Sub-Region, there is also a gap with 4,221 annual openings and no annual (3-year average) awards for an annual undersupply of 4,221 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0506.50 - Retail Store Operations and Management

Metric Outcomes	Bay All CTE Programs	Foothill All CTE Programs	State 0506.50	Bay 0506.50	Silicon Valley 0506.50	Foothill 0506.50
Students with a Job Closely Related to Their Field of Study	74%	88%	62%	N/A	N/A	N/A
Median Annual Earnings for SWP Exiting Students	$53,090	$73,174	$34,904	$38,377	N/A	N/A
Median Change in Earnings for SWP Exiting Students	24%	42%	38%	61%	N/A	N/A

Metric Outcomes	Bay All CTE Programs	Foothill All CTE Programs	State 0506.50	Bay 0506.50	Silicon Valley 0506.50	Foothill 0506.50
Exiting Students Who Attained the Living Wage	54%	66%	50%	N/A	N/A	N/A

Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

Skills and Education

Table 9. Top Skills for Customer Service Occupations in Bay Region

Skill	Posting	Skill	Posting
Merchandising	17,943	Retail Operations	2,636
Selling Techniques	11,458	General Mathematics	2,542
Product Knowledge	7,784	Customer Relationship Management	2,541
Cash Register	7,689	Warehousing	2,272
Cash Handling	4,164	Inventory Management	2,093
Loss Prevention	3,829	Customer Support	2,035
Marketing	3,526	Customer Inquiries	1,968
Visual Merchandising	3,308	Housekeeping	1,931
Point Of Sale	3,221	Balancing (Ledger/Billing)	1,894
Stocking Merchandise	2,722	Outbound Calls	1,843

Source: Lightcast

Source: Lightcast

Table 10. Education Requirements for Customer Service Occupations in Bay Region

Education Level	Job Postings	% of Total
High school or GED	18,674	71%
Associate degree	2,045	8%
Bachelor's degree & higher	5,682	21%

Source: Lightcast

Note: 60% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

Sources

O*Net Online
Lightcast
CTE LaunchBoard www.calpassplus.org

Launchboard
Statewide CTE Outcomes Survey
Employment Development Department Unemployment Insurance Dataset
Living Insight Center for Community Economic Development
Chancellor's Office MIS system

Contacts

For more information, please contact:

- Leila Jamoosian, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (COE), leila@baccc.net
- John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, jcarrese@ccsf.edu or (415) 267-6544

ALTW F434. : CAREER PATH EXPLORATION: STEM CAREERS FOR STUDENTS WITH LEARNING DIFFERENCES

Proposal Type
New Course

Effective Term
Fall 2024

Subject
Adaptive Learning: Transition to Work (ALTW)

Course Number
F434.

Department
Adaptive Learning (A L)

Division
Student Resource and Support Programs (1SR)

Units
0

Former ID

Cross Listed

Related Courses

Maximum Units
0

Does this course meet on a weekly basis?
Yes

Weekly Lecture Hours
2

Weekly Lab Hours
0

Weekly Out of Class Hours
4

Special Hourly Notation

Total Contact Hours
24

Total Student Learning Hours
72

Repeatability Statement
Unlimited Repeatability

Repeatability Criteria
As a course for the disabled, there is significant pedagogical research showing that this population is often best served through repetition of existing curriculum.

Credit Status
Non-Credit

Degree Status
Non-Applicable

Is Basic Skills applicable to this course?
No

Grading
Non-Credit Course (Receives no Grade)

Will credit by exam be allowed for this course?
No

Honors
No

Degree or Certificate Requirement
None of the above (Stand Alone course)

Stand Alone

If a Foothill credit course is not part of a state-approved associate's degree, certificate of achievement, or the Foothill 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 that 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.

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

• Temporary means the course will be incorporated into a new degree or certificate that is not yet State approved.

• Permanent means there are no plans to add the course to a State approved degree or certificate, nor to the Foothill GE pattern.

Please select
Permanent

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:
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 provided in the box below and/or uploaded as an attachment.

Evidence

TTW represents Foothill's commitment to serving disabled populations. As such, this program has a unique set of goals that in the current Title 5 environment cannot lead to certification. Students who successfully complete courses within the TTW program are expected to have developed the independence and skills needed to determine if they will be successful in traditional college classes.

Attach evidence

Need/Justification
Students who successfully complete courses within the TTW program are expected to have developed the independence and skills needed to determine if they will be successful in traditional college courses. This program brings to the table students who have traditionally

been excluded from career paths capable of supporting independence in adulthood and as such it is crucial for the college to support this vulnerable population.

Course Description
Specifically designed for students with learning differences, this course aims to broaden student's horizons and inspire them to consider careers in Science, Technology, Engineering, and Mathematics (STEM). Through a combination of experiential learning and guest lectures, students will gain valuable insights into various STEM fields. The curriculum emphasizes hands-on activities, interactive projects, and real-world scenarios to provide a practical understanding of STEM concepts. The guest lectures, featuring professionals from diverse STEM backgrounds, offer students the opportunity to connect with role models and explore potential career paths. By the end of the course, participants will have a clearer understanding of possibilities within STEM and the confidence to pursue their interests in these dynamic fields.

Course Prerequisites

Course Corequisites

Course Advisories

Course Objectives
The student will be able to:

1. Articulate and understand future career paths available to them in STEM fields.
2. Demonstrate basic knowledge of computer components and programming languages.
3. Communicate with stakeholders in STEM fields.
4. Work in a group environment to effectively complete technical tasks.

Course Content

1. Career exploration
    1. Guest lectures
    2. Career path options
    3. Minimum qualifications and education requirements
    4. Job searching skills
2. Computer programming
    1. Vocabulary and component identification
    2. Basic device assembly
    3. Programming
    4. Troubleshooting and testing
3. Communication skills
    1. Introductions and networking
    2. Appropriate work/school behavior
4. Group work

1. Teamwork
2. Leadership
3. Following instructions
4. Conflict resolution

Lab Content
Not applicable.

Special Facilities and/or Equipment
Dedicated classroom space to support long-term experiential learning projects; technology tools as applicable.

Methods of Evaluation

Methods of Evaluation may include but are not limited to the following:
Instructor observation
Group projects
Final project
Presentations

Methods of Instruction

Methods of Instruction may include but are not limited to the following:
Lecture
Individual and group research
Project-based learning
Cooperative experiential education

Representative Text(s)

Please provide justification for any texts that are older than 5 years

Other Materials
No outside course materials required.

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

1. Short paragraph response to discussion questions
2. Visits to organizations in the community related to STEM fields
3. Presentations

Authorized Discipline(s):
Adapted Computer Technology: Disabled Students Programs and Services OR Computer Information Systems OR Developmental Disabilities: Disabled Students Programs and Services OR Robotics OR Specialized Instruction (Disabled Student Programs and Services): Vocational Noncredit

Faculty Service Area (FSA Code)
DEVELOPMENTAL DISABILITIES

Taxonomy of Program Code (TOP Code)
4930.31 - Living Skills, Disabled

Foothill faculty, through our Academic Senate and Curriculum Committee, ask you to consider the Guiding Principles for Equitable CORs document (available at https://foothill.edu/curriculum/process.html) while creating or revising this COR.

Please describe how you have incorporated principles of equity during this revision:
2/27/24 - In creating this COR, we have considered and ensured that students from a wide variety of backgrounds are given access to career paths that are traditionally closed to them. In instructional design and pedagogy, we are following best practices of universal design for learning. We highlight role models with whom marginalized students can identify. By providing all supplies and not requiring any supplemental texts, the course also provides access to educational experiences that would normally be closed to those without the financial or geographic advantages that allow for exposure to technology career paths.

Articulation Office Only

C-ID Notation

IGETC Notation

CSU GE Notation

Transferability
None

Validation Date
N/A

Division Dean Only

Seat Count

Load

FOAP Codes:

Fund Code

Org Code

Account Code
1320

Program Code

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Course Number & Title: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center Students)

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 V – Communication & Analytical Thinking:

Communication and analytical thinking curricula foster the ability to communicate knowledge, information, ideas, and feelings, and enhance the ability to evaluate, solve problems, and make decisions.

To accomplish this, a course meeting the Communication and Analytical Thinking General Education Requirement ***must*** offer students the opportunity to:
C1. Apply the analytical skills learned in the course to other disciplines;
C2. Develop competencies in communication or computation, and apply the appropriate technical, interpretive, and evaluative skills;
C3. Read, interpret, and analyze statements and then be able to express them in symbolic form when appropriate;
C4. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

Expected outcomes of a successful course in this area **should** include some or all of the following:
C5. Critically assess other people's ideas; and organize, edit, and evaluate their own ideas in order to articulate a position;
C6. Identify goals when applying analytical skills;
C7. Recognize limitations of applicable methodologies;
C8. Use current technologies for discovering information and techniques for communication, analysis, evaluation, problem solving, decision-making, and presentation.

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Course Number & Title: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)

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:

C1. Apply the analytical skills learned in the course to other disciplines;

Matching course component(s):
HVAC students utilize analytical skills through the troubleshooting and problem solving curriculum they are involved with. Students will use a number of different reasoning techniques such as deduction and induction as well as cause and effect and problem solving to make decisions. The analytics explored in this curriculum extends to areas of measurement, mathematics, and science. For example, several assignments call for measuring air pressure, temperature and humidity to determine a properly fit and working system.

APPT 155 (HVAC Program, Year 3, Semester 1, Module 13, Advanced Electrical Controls) This session covers three lab exercises using Ohm's Law calculations: a lab in which the Journeyworker will draw and wire up the alternating operation of multiple lights using momentary contact push button switches, along with a lab in which the Journeyworker will perform a meter usage lab that is wired up in the lab and will answer test question with actual meter measurements, and a lab pertaining to meter usage diagram electrical sequence of operation. The session also includes labs pertaining to troubleshooting refrigeration, heating, or air-conditioning systems.

APPT 155 (HVAC Program. Year 3, Semester 1, Module 14, Heating and Air Conditioning Systems) This session covers steam heating distribution systems, air-source heat pump systems, water-source and geothermal heat pump systems, fuel oil heating systems and miscellaneous heating systems. Installing, servicing, and troubleshooting air-source heat pump systems, water-source, geothermal heat pump systems, and HVAC systems is discussed in this session as well.

C2. Develop competencies in communication or computation, and apply the appropriate technical, interpretive, and evaluative skills;

Matching course component(s):
HVAC students develop both communication and computation skills backed by their technical and evaluative curriculum. For one, students take a Customer Service course where they must learn how to communicate the systems as well as problems in a way to build and insure customer satisfaction. Students must do this both in writing as well as verbally. This process also involves evaluating customer needs and care and to find ways of interpreting concerns the customers may have. Additionally, HVAC students must learn computation to avoid concerns customers may have. This involves learning precision of measurement and diagramming systems for efficiency.

APPT 151 (HVAC Program, Year 1, Semester 1, Module 2, Customer Service) Topics covered in this section include customer satisfaction, communication skills, and the evolution and proper application of quality service. Various communication styles and recovery skills will be thoroughly covered. The identification of difficult service situations – such as indifferent, irate, and demanding customers – will be reviewed.

APPT 155 (HVAC Program, Year 3, Semester 1, Module 13, Advanced Electrical Controls) This session covers three lab exercises using Ohm's Law calculations: a lab in which the Journeyworker will draw and wire up the alternating operation of multiple lights using momentary contact push button switches, along with a lab in which the Journeyworker will perform a meter usage lab that is wired up in the lab and will answer test question with actual meter measurements, and a lab pertaining to meter usage diagram electrical sequence of operation. The session also includes labs pertaining to troubleshooting refrigeration, heating, or air-conditioning systems.

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

APPT 158 (HVAC Program, Year 4, Semester 2, Module 22, Chillers) This session covers installing, servicing, and chiller troubleshooting scenarios along with Trane Air Conditioning Clinic, Helical Rotary Water Chillers, Carrier Tech Service Training, Troubleshooting Reciprocating Liquid Chillers, and Ice Storage Systems.

C3. Read, interpret, and analyze statements and then be able to express them in symbolic form when appropriate;

Matching course component(s):
HVAC students write several reports where they must learn to read, interpret and analyze the work of others while getting feedback from peers/co-workers to produce an end result. Specifically, students take part in a series of labs where they will symbolically learn how to draw up plans for troubleshooting different components of refrigeration, heating and air conditioning systems. Another main component of the HVAC curriculum centers on students being able to read and interpret the psychometric chart. Students must understand this chart with such detail that they can determine problems along what way.

APPT 155 (HVAC Program, Year 3, Semester 1, Module 13, Advanced Electrical Controls) This session covers three lab exercises using Ohm's Law calculations: a lab in which the Journeyworker will draw and wire up the alternating operation of multiple lights using momentary contact push button switches, along with a lab in which the Journeyworker will perform a meter usage lab that is wired up in the lab and will answer test question with actual meter measurements, and a lab pertaining to meter usage diagram electrical sequence of operation. The session also includes labs pertaining to troubleshooting refrigeration, heating, or air-conditioning systems, a lab covering Carrier 30 GA wiring schematic sequence of operation, and a lab covering the Carrier 50 DA wiring schematic sequence of operation.

APPT 159 (HVAC Program, Year 5, Semester 1, Module 23, Start-up Airside) This session covers a review of basic science, an introduction to testing, balancing, and adjusting. It will review properties of air and the psychometric chart, along with problems in the psychometric chart. Air distribution systems, accessories and air flow in ducts will also be discussed. Instruments for measuring air temperature, humidity and air pressure and when to use them and how to perform start-up and initial tests will be discussed. This session contains a Fan Laws Lab, Fan Law Written Lab, and an Air Balance Lab.

C4. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

Matching course component(s):
HVAC students learn to communicate and express their ideas using universally understood terms of the industry. Students work on projects that are evaluated and received by project managers and journeymen who rely on the precise communication of the student. Something unique to this field is the ability of students to understand the discipline and the systems so well that they can communicate it to customers. This means students must be able to logically explain (sometimes in the simplest way) how something works.

APPT 151 (HVAC Program, Year 1, Semester 1, Module 2, Customer Service) Topics covered in this section include customer satisfaction, communication skills, and the evolution and proper application of quality service. Various communication styles and recovery skills will be thoroughly covered. The identification of difficult service situations – such as indifferent, irate, and demanding customers – will be reviewed.

APPT 159 (HVAC Program, Year 5, Semester 1. Module 23 & 24)
Start, Test & Balance – Start-up - This session covers a review of basic science, an introduction to testing, balancing, and adjusting. It will review properties of air and the psychometric chart, along with problems in the psychometric chart. Air distribution systems, accessories and air flow in ducts will also be discussed. Instruments for measuring air temperature, humidity and air pressure and when to use them and how to perform start-up and initial tests will be discussed. This session contains a Fan Laws Lab, Fan Law Written Lab, and an Air Balance Lab.

Start, Test & Balance – Water Side - This session covers hydronic balancing instruments, devices, and start up and initial tests of hydronic systems. A direct and reverse water lab will be conducted, and fluid flow in piping systems and centrifugal pumps will be discussed.

Depth Map: should include some or all:

C5. Critically assess other people's ideas; and organize, edit, and evaluate their own ideas in order to articulate a position;

Matching course component(s):
HVAC students are given a number of projects to work through where they are asked to evaluate someone's previous work or idea and form their own opinion and position on such. For example, the instructor will introduce students to a previous mechanical schedule/blueprints. Students are then asked to critique that schedule and propose changes and recommendations for improvement. There are several labs where students are paired and given drawings to analyze and propose solutions for. Additionally, students are taught the process of troubleshooting where they build on an existing idea. In their classes, instructors will give open-ended problems that need diagnosis and in small groups or individually students will examine feedback from each other and the instructor and offer new proposed solutions.

APPT 152 (HVAC Program, Year 1, Semester 2, Module 6, Basic Refrigeration and Heating) This session covers an introduction to air conditioning, electric meter principles, temperature, pressure, thermodynamics, and indoor air quality. Along with forced air furnace components and controls, forced air heating distribution systems, and combustion and fuels being discussed, the session covers HVACR and the refrigeration cycle/system print reading. Forced air furnace components and controls, forced air heating distribution systems, and combustion and fuels will be covered as well. The apprentices will get practice of plotting several different psychometric scenarios and deriving pertinent information.

APPT 158 (HVAC Program, Year 4, Semester 2, Module 22, Chillers) This session covers installing, servicing, and chiller troubleshooting scenarios along with Trane Air Conditioning Clinic, Helical Rotary Water Chillers, Carrier Tech Service Training - Book Title: Troubleshooting Reciprocating Liquid Chillers, and Ice Storage Systems.

APPT 159 (HVAC Program, Year 5, Semester 1, Module 23 & 24, Air Side & Water Side Balancing) This session covers a review of basic science, an introduction to testing, balancing, and adjusting. It will review properties of air and the psychometric chart, along with problems in the psychometric chart. Air distribution systems, accessories and air flow in ducts will also be discussed. Instruments for measuring air temperature, humidity and air pressure and when to use them and how to perform start-up and initial tests will be discussed. This session contains a Fan Laws Lab, Fan Law Written Lab, and an Air Balance Lab. The Instructor will present blueprints and mechanical schedules to the class. The Instructor will lay out the scenarios and the students will give feedback on their ideas on how to solve the issues found.

The instructor will then go through how to solve each scenario and analyze how each student solved the problems. The students will be given a chance to evaluate their ideas and see how they can improve on system start-up and balancing.

C6. Identify goals when applying analytical skills;

Matching course component(s):
HVAC students utilize analytical thinking throughout their program. Part of this thinking approach requires the students to start with a goal and through a process figure out ways of achieving that goal. There are several courses within the program where students work on self-paced projects. This autonomy allows students to establish the goals, experiment, test, balance and achieve them on their own. Students are often encouraged to critically think about their process. Some students start with their weaker goals first to get them out of the way whereas other students develop a process for starting with their strengths.

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

APPT 159 (HVAC Program, Year 5, Semester 1. Module 23 & 24)
Start, Test & Balance – Start-up - This session covers a review of basic science, an introduction to testing, balancing, and adjusting. It will review properties of air and the psychometric chart, along with problems in the psychometric chart. Air distribution systems, accessories and air flow in ducts will also be discussed. Instruments for measuring air temperature, humidity and air pressure and when to use them and how to perform start-up and initial tests will be discussed. This session contains a Fan Laws Lab, Fan Law Written Lab, and an Air Balance Lab.

Start, Test & Balance – Water Side - This session covers hydronic balancing instruments, devices, and start up and initial tests of hydronic systems. A direct and reverse water lab will be conducted, and fluid flow in piping systems and centrifugal pumps will be discussed.

C7. Recognize limitations of applicable methodologies;

Matching course component(s):
HVAC students must understand the limitations of the systems as well as the external concerns and barriers such as safety procedures. Students take a specific course on safety and environmental limitations which covers fire safety and OSHA procedures.

APPT 151 (HVAC Program, Year 1, Semester 1, Module 3, Trade Related Safety & Environment) This session covers various procedures including: fire safety, aerial lift, crane, and OSHA safety, and electrical safety. Expectations for OSHA certification, introduction to OSHA standards, workplace hazards, back safety, and heat illness will be discussed. Journeyworkers will also participate in an arc flash lab activity after being exposed to NFPA7OE arc flash information.

C8. Use current technologies for discovering information and techniques for communication, analysis, evaluation, problem solving, decision-making, and presentation.

Matching course component(s):
HVAC students are continuously learning the technologies that support refrigeration and HVAC systems. This includes updates and recent technologies. Specific to the field is a new Human Interface Software for Air Conditioning units that connects phones and computers to the systems. Students will learn this system, use the system and teach it to clients/customers.

APPT 152 (HVAC Program, Year 1, Semester 2, Module 6, Basic Refrigeration and Heating) This session covers an introduction to air conditioning, electric meter principles, temperature, pressure, thermodynamics, and indoor air quality. Along with forced air furnace components and controls, forced air heating distribution systems, and combustion and fuels being discussed, the session covers HVACR and the refrigeration cycle/system print reading. Forced air furnace components and controls, forced air heating distribution systems, and combustion and fuels will be covered as well. The apprentices will get practice of plotting several different psychometric scenarios and deriving pertinent information.

APPT 157 (HVAC Program, Year 4, Semester 1, Module 19, Commercial HVACR Equipment) This session will cover compressor lab room activities including disassembling and reassembling various semi-hermetic refrigerant compressors. Sizing, selecting, and installing the piping to the cooling tower pump along with: basic equipment installation methods, equipment selection, control, and installation, air in the system, pipe size and layout, radiation required, and hydronic terms will also be discussed.

Breadth Mapping: please indicate all that apply (if applicable)

B1. Communication (analytical reading, writing, speaking, and listening skills including evaluation, synthesis, and research).

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Matching course component(s):
HVAC apprenticeship students complete coursework using analytical reading, writing, speaking skills including evaluation, synthesis and research throughout the program – specifically students learn about and describe control systems, safe work practices including handling high pressure gas cylinders, various heating equipment, and Personal Protective Equipment (PPE). (HVAC Program, Year 3, Semester 2, Module 15 - Control Systems); (HVAC Program, Year 3, Semester 2, Module 16 - Pneumatic Controls); (HVAC Program, Year 3, Semester 2, Module 17 - DDC Controls)

The following apprenticeship courses: (APPT 154)

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

Matching course component(s):
HVAC Apprenticeship students use computation throughout the program including in units such as "APPT 155 Advanced Electrical Controls" that requires use of Ohm's Law to determine wiring schematic values, discussion of meter usage diagrams in the electrical sequence of operation, conducting meter usage and alternating lights labs, and describing HVAC system load calculations, designs, and balancing. (HVAC Program, Year 3, Semester 1, Module 13 - Advanced Electrical Controls)

The following apprenticeship courses: (APPT 155)

B3. Creative, critical, and analytical thinking (reasoning, questioning, problem solving, and consideration of consequence).

Matching course component(s):
HVAC Apprenticeship students analyze the relationships of business and economic activities to the functioning of society as a whole in units on the evolution of service, identifying customers and constructive communication styles, including developing listening, clarifying and empathy skills. This is done in the process of developing a critical eye. (HVAC Program, Year 1, Semester 1, Module 2 - Customer Service)

The following apprenticeship courses: (APPT 151)

B4. Community and global consciousness and responsibility (consideration of one's role in society at the local, regional, national, and global level in the context of cultural constructs and historical and contemporary events and issues).

Matching course component(s):

B5. Information competency (ability to identify an information need, to find, evaluate and use information to meet that need in a legal and ethical way) and digital literacy (to teach and assess basic computer concepts and skills so that people can use computer technology in everyday life to develop new social and economic opportunities for themselves, their families, and their communities).

Matching course component(s):

Requesting Faculty: Gina Firenzi Date: 5/17/24

Division Curriculum Rep: Tim Myres Date: 5/21/24

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____Date: _____

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Course Number & Title: Steamfitting and Pipefitting Technology Apprenticeship Program

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 V – Communication & Analytical Thinking:

Communication and analytical thinking curricula foster the ability to communicate knowledge, information, ideas, and feelings, and enhance the ability to evaluate, solve problems, and make decisions.

To accomplish this, a course meeting the Communication and Analytical Thinking General Education Requirement ***must*** offer students the opportunity to:
C1. Apply the analytical skills learned in the course to other disciplines;
C2. Develop competencies in communication or computation, and apply the appropriate technical, interpretive, and evaluative skills;
C3. Read, interpret, and analyze statements and then be able to express them in symbolic form when appropriate;
C4. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

Expected outcomes of a successful course in this area **should** include some or all of the following:
C5. Critically assess other people's ideas; and organize, edit, and evaluate their own ideas in order to articulate a position;
C6. Identify goals when applying analytical skills;
C7. Recognize limitations of applicable methodologies;
C8. Use current technologies for discovering information and techniques for communication, analysis, evaluation, problem solving, decision-making, and presentation.

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Course Number & Title: Steamfitting and Pipefitting 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:

C1. Apply the analytical skills learned in the course to other disciplines;

Matching course component(s):
Steamfitter students are consistently learning how to troubleshoot and problem solve using analytical reasoning skills. They study mistakes in their industry to learn of past failures and how to prevent reoccurrence. They learn cause and effect reasoning and induction to understand environmental impacts. Students' analytical reasoning will help develop skills of other disciplines primarily in math and science. Several math concepts such as pythagorean theorem, trigonometric functions, volumes, geometry and measurement are part of the foundation of this curriculum.

APPT 145 Advanced Trade Math for Steamfitters-Year 3 Semester 1 Module 13-Steamfitter students learn the trade related math concepts that are used in the industry on a regular basis. For Example pythagorean theorem, trigonometric functions, volumes and areas.

APPT 144A Relates Science Year 2 Semester 2 Module 10-Steamfitter students including but not limited to the application unit conversions, study phase changes, the scientific method, pressure temperature relationships and how it can be applied to other classes and the Steamfitting industry.

C2. Develop competencies in communication or computation, and apply the appropriate technical, interpretive, and evaluative skills;

Matching course component(s):
Steamfitter students develop communication competencies through a series of groupwork and team building exercises. Students must learn to communicate through the universal language and concepts of the trade. Then through a series of presentations they must use the appropriate technical language. One project on corrosion problems asks students in pairs/small groups to diagnose and troubleshoot (evaluative and interpretive skills) to solve corrosion problems.

A major project Steamfitter students must complete is their SuperFund site report. Through this report students study environmental hazard sites. They will study how the site came to be and interpret the impact it had on the environment as well as the populations impacted. Students will also research and give an evaluation on how the site could be remedied. Students will gain knowledge of ample EPA technical terms through this project.

APPT 143B-Beginning Fit up, Tacking, and Welding-Students work in small groups or pairs to apply techniques learned to build a complicated piping spool as a class evaluation.

APPT 144A Related Science Year 2 Semester 2 Module 10- Students are required to create and present a science project or write and present a science report to the class. Anticipate, diagnose and deal with corrosion problems.

APPT 139A Industrial Install Year 5 Semester 1 Module 21-Students are required to research and present to the class on SuperFund sites in the Bay Area.

C3. Read, interpret, and analyze statements and then be able to express them in symbolic form when appropriate;

Matching course component(s):

Steamfitter students are consistently evaluating and analyzing schematics and blueprints to complete projects. Job sites rely on technical drawings that use universally understood symbols within the industry. Students must understand these symbols and communicate potential concerns and problems using this form of communication.

APPT 148-Advance Drawing and Blueprint Reading Year 4 Semester 1 Module 17-Students learn to critically analyze complicated piping systems and schematics that are from actual job sites. They learn symbols, sizing, and technological systems such as CAD to model piping systems.

APPT 146 Steam Technology Year 3 Semester 2 Module 14-Students learn and understand the properties of heat and steam. They learn how to interpret and use steam saturation charts and graphs.

C4. Clearly and precisely express their ideas in a logical and organized manner using the discipline-appropriate language.

Matching course component(s):
Steamfitter students learn the appropriate, universally understood, terms and concepts of the trades industry. This is exercised in their course projects, reports as well as in collaboration with other trades professionals on the jobsite. Starting with vocabulary and definitions of commonly used terms, the students then learn to express their ideas and raise potential concerns using these terms effectively. An example of this exists where students are challenged to communicate with crane operators using only hand signals. Students must communicate their message in an organized way to make sure the operator can carry out their tasks.

APPT 141 Basic Steamfitting Skills Year 1 Semester 1 Module 3-Students learn the trade appropriate nomenclature that is used in the industry to be able to communicate on a jobsite effectively.

APPT 139A Industrial Install Year 5 Semester 1 Module 21-Students are required to research and present to the class on SuperFund sites in the Bay Area.

APPT 146 Steam Technology Year 3 Semester 2 Module 14-Students are required to learn and communicate the vocabulary relating to steam and the steamfitting industry. They are required to build a steam project or write a paper and present it to the class.

APPT 147B Industrial Rigging Year 4 Semester 2 Module 20-Students are required to learn to communicate with a crane operator using hand signals. They also work in groups or teams to figure out the best way to accomplish rigging and manipulate heavy odd shaped spools by calculating the center of gravity.

Depth Map: <u>should</u> include some or all:

C5. Critically assess other people's ideas; and organize, edit, and evaluate their own ideas in order to articulate a position;

Matching course component(s):
Steamfitter students will learn to assess prior jobsite projects studying both successes and failures to analytically find ways to improve on ideas. One major project steamfitter students must do is their SuperFund Research Report. The students study prior toxic sites tracing the work that was completed to build the site back into EPA compliance. Students make the connection of previous work to connect where small problems impact major populations and environmental concerns. They collect information from experts and secondary sources to articulate their position.

APPT 139A Industrial Install Year 5 Semester 1 Module 21-Students are required to research and present to the class on SuperFund sites in the Bay Area.

C6. Identify goals when applying analytical skills;

Matching course component(s):

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

There are several projects that steamfitting students must do where identifying a goal becomes the focal point. From there students must work through a testing and experimenting process to achieve results. A major study for Steamfitting students is to learn from historical SuperFund sites in the Bay Area. Students must study a site identifying the problems that caused the toxic results devaluing the land then identify goals where the site could be remedied or fixed to bring it back into compliance.

APPT 148-Advance Drawing and Blueprint Reading Year 4 Semester 1 Module 17-Students learn to critically analyze complicated piping systems and schematics that are from actual job sites. They learn symbols, sizing, and technological systems such as CAD to model piping systems. They are able to identify overall goals of the system and apply the analytical skills in the design.

APPT 139A Industrial Install Year 5 Semester 1 Module 21-Students are required to research and present to the class on SuperFund sites in the Bay Area.

C7. Recognize limitations of applicable methodologies;

Matching course component(s):
Steamfitting students must learn to recognize the two major limitations of the field - environmental impact concerns and technical challenges. Starting with the limits of their equipment and potential for equipment failures and the impact those failures can have on the environment. Additionally, students take classes in safety and hazards to prevent problems and protect themselves and their team. There are classes in the curriculum dedicated entirely to studying risks within the profession such as the mixing of gasses.

APPT 147B Industrial Rigging Year 4 Semester 2 Module 20-Students learn crane and rigging equipment limitations. Safe Working Loads and structural load requirements**.**

APPT 139A Industrial Install Year 5 Semester 1 Module 21-Students must be able to describe limitations of work areas and risks of working with different gasses. In addition the must be able to describe limitations of materials used and reasons they are used for specific systems.

APPT 146 Steam Technology Year 3 Semester 2 Module 14-Students must be able to describe and understand thermodynamic expansion and be able to calculate coefficients of different materials to understand limitations of piping routing or designs.

C8. Use current technologies for discovering information and techniques for communication, analysis, evaluation, problem solving, decision-making, and presentation.

Matching course component(s):
Steamfitting students get exposure to the most current technology in the trades. Through hands-on exposure, students develop a competency in AutoCad, Revit, and Blue Beam utilizing these technologies to create and modify blueprints for job sites.

APPT 148-Advance Drawing and Blueprint Reading Year 4 Semester 1 Module 17-Students must get familiar with Auto Cad, Revit, and Blue Beam in order to interpret blueprints for effective communication on a jobsite or fabrication shop.

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):
Steamfitter Pipefitter Technology Program students must communicate in a variety of formats. Whether it is engaging with other apprenticeship students, workers, supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively using discipline specific terms.

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Pipefitter Program courses demonstrating B1 Communication skills include but are not limited to:
APPT 144A Year 2 Module 2 Related Science - where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

APPT139A Year 5 Semester 5 Industrial Installations.

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

Matching course component(s):
Because the application of what Steamfitter Pipefitter Technology Program students learn and practice must be extremely precise to meet all existing codes and regulations, students learn and apply many mathematical concepts and data collection models.

Steamfitter Pipefitter Technology Program courses demonstrating B2 Computation include but are not limited to:
APPT 145 Year 3 Semester 1 Module 13 Advanced Trade Math Apprentices are required to apply mathematical concepts in practical application.

B3. Creative, critical, and analytical thinking (reasoning, questioning, problem solving, and consideration of consequence).

Matching course component(s):
Students in the Steamfitter Pipefitter Technology Program must communicate in a variety of formats. Whether it is engaging with other apprenticeship students, workers, supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively using discipline specific terms.
Pipefitter Program courses demonstrating Standard B3 skills include but are not limited to:
APPT 134B Industrial Safety Year 2 semester 2 Module 12 OSHA 30- The Triangle Shirtwaist Factory fire in the Greenwich Village area of New York City. Students learn to express their ideas in a logical and organized manner using discipline specific-appropriate language by researching, discussing and writing about or presenting on case studies such as the Triangle Shirtwaist Factory fire.

APPT 145 Year 3 Semester 1 Module 13 Advanced Trade Math Apprentices are required to apply mathematical concepts in practical applications.

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):
Students in the Steamfitter Pipefitter Technology Program meet standard B4 in a variety of ways. Their training includes courses on the environmental impact of their work on the planet. They also learn about the role of their union in advancing the social and economic opportunities for historically marginalized groups. And through on the job training and other required program elements, sheet metal students also learn the real-world importance of their actions and behaviors on others.

Pipefitter Program courses demonstrating Standard B4 skills include but are not limited to:
APPT139A Year 5 Semester 5 Industrial Installations Students expand their community and global consciousness.

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).

General Education Review Request
AREA V – COMMUNICATION & ANALYTICAL THINKING

Matching course component(s):

Requesting Faculty: Gina Firenzi Date: 5/17/24

Division Curriculum Rep: Tim Myres Date: 5/21/24

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____ Date: _____

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

Course Number & Title: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)

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 VI –United States Cultures & Communities:

United States Cultures and Communities courses critically explore the current and historical interaction of different groups of Americans. These courses discourage discriminatory attitudes towards others by providing an empirical understanding of and appreciation for the marginalized groups that have been important in the development of United States history and culture, and the value of diverse cultural groups to American society.

Courses meeting the GE requirement in United States Cultures and Communities ***must*** include ***all of the following*** student learning outcomes:

U1. Demonstrate detailed knowledge of and sensitivity to at least one U.S. group categorized by race/ethnicity, gender, class, disability, sexual identity or religious belief who has suffered a history of systematic oppression and discrimination.
U2. Critically analyze the degree of (or dynamics of) the interaction between at least one marginalized culture or community and the dominant U.S. culture, or between two marginalized communities or cultures.
U3. Develop and articulate an awareness of one's own culturally-determined perspective and how it might be viewed from the perspective of others.

In addition, courses meeting the GE requirement for United States Cultures and Communities ***must i*****nclude** ***at least three*** of the following student learning outcomes:

U4. Critically examine the contributions of many groups to a particular aspect of United States culture;
U5. Evaluate and analyze the interaction of at least one marginalized culture with the dominant U.S. culture;
U6. Evaluate and analyze the interaction between at least two marginalized cultures or communities within the framework of United States society;
U7. Explain culture as a concept and how it can unite or divide people into various groups;
U8. Apply information about groups presented in the class to contemporary social and cultural relations;
U9. Analyze and interpret how culture shapes human development and behavior.

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

Course Number & Title: Air Conditioning and Refrigeration Technology Apprenticeship Program (Pathway #1 - Pipe Trades Training Center students)

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:

U1. Demonstrate detailed knowledge of and sensitivity to at least one U.S. group categorized by race/ethnicity, gender, class, disability, sexual identity or religious belief who has suffered a history of systematic oppression and discrimination;

Matching course component(s):
HVAC program course modules demonstrating Depth area U1 include but are not limited to…

APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Apprenticeship Orientation Module / Union Heritage
The Union Heritage class discusses the history and importance of unions and the labor movement and how they helped address discrimination against systemically oppressed people from lower, working-class and BIPOC groups. Students learn applied examples of this, such as how the Industrial Workers of the World (IWW) union wanted to abolish capitalism because of its systemic and negative effects on BIPOC people, women, children, and families.

The section of material on the study of our union's cultural traditions and "standards of excellence" covers the treatment of others – roles and responsibilities of various people in interactions in society. The standard of excellence is emphasized throughout the entire program and is a common theme throughout the program.

APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Apprenticeship Orientation Module / Prevention of Harassment / Training
All State Apprenticeship Programs, including the HVAC Technology Program, must have policies and training in place on the prevention of harassment, including sexual and other forms of harassment, bias, bystander responsibilities, laws and rights, and procedures. All HVAC program students take this training and are assessed on it.

HVAC Technology Program students not only receive implicit bias training in specific modules in their program. This training is reinforced at least yearly through onsite job training, where real-world expectations require students to both understand and navigate the power dynamics of the actual world.

U2. Critically analyze the degree of (or dynamics of) the interaction between at least one marginalized culture or community and the dominant U.S. culture, or between two marginalized communities or cultures;

Matching course component(s):
HVAC program course modules demonstrating Depth area U2 include but are not limited to…

APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Apprenticeship Orientation Module / Prevention of Harassment / Training
All State Apprenticeship Programs, including the HVAC Technology Program, must have policies and training in place on the prevention of harassment, including sexual and other forms of harassment, bias, bystander responsibilities, laws and rights, and procedures. All HVAC program students take this training and are assessed on it.

HVAC Technology Program students not only receive implicit bias training in specific modules in their program. This training is reinforced at least yearly through onsite job training, where real-world expectations require students to both understand and navigate the power dynamics of the actual world.

APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Apprenticeship Orientation Module /

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

Union Heritage
The Union Heritage class discusses the history and importance of unions and the labor movement and how they helped address discrimination against systemically oppressed people from lower, working-class and BIPOC groups. Students learn applied examples of this, such as how the Industrial Workers of the World (IWW) union wanted to abolish capitalism because of its systemic and negative effects on BIPOC people, women, children, and families.

The section of material on the study of our union's cultural traditions and "standards of excellence" covers the treatment of others – roles and responsibilities of various people in interactions in society. The standard of excellence is emphasized throughout the entire program and is a common theme throughout the program.

APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Module 3 – Trade Related Safety and Environments
Introduces students to fundamentally important labor organizations such as the US Occupational and Safety and Health Administration (OSHA) – (part of the US Department of Labor). Students learn how OSHA's mission is to set and enforce health and safety standards; enforce anti-retaliation provisions of the OSH Act and other federal whistleblower laws; provide and support training, outreach, education, and assistance; and ensure state OSHA programs are at least as effective as federal OSHA, furthering a national system of worker safety and health protections.

Students are familiarized with the State level, California Occupational Safety and Health Act (Cal OSHA), OSHA/CalOSHA and learn how these organizations were created to protect employees' right to safe and healthful workplaces. Students learn how the Cal-OSHA Act was enacted in 1973 by the California Legislature to assure safe and healthful working conditions for all California working men and women and about its aim to protect workers and have everyone work in safe and healthy environments.

Students learn how Cal/OSHA was created by the Occupational Safety and Health Act of 1973 to enforce effective standards, assist, and encourage employers to maintain safe and healthful working conditions, and to provide for enforcement, research, information, education, and training in the field of occupational safety and health. Students learn the rights and responsibilities of employers and employees. More specifically applied examples are about workers' rights to refuse dangerous or hazardous work (a prominent example), protection from retaliation by employers, compliance, hazard assessment, and the right to receive records of exposures and investigations.

Before instructors ever introduce different HVAC material, every class discusses safety as paramount – and reinforces the goal of safe and productive employment. This is an example of how the program characterizes labor (marginalized group or culture) and management (dominant group or culture) and marginalized cultures. In this way, HVAC program courses examine how labor arrangements and unions bring people that are or have been traditionally marginalized into the middle class.

APPT 159 Year 5 Semester 1 – Start, Test and Balance – Module 23 – Advanced Systems, Air Flow, and Air Side Balancing
Shown throughout the experiments in the class. One applied example is Genentech's "clean room" facilities – where HVAC students examine the importance of getting equitable outcomes for marginalized communities through research treatments for illness. Students investigate different diseases and their impacts on various DEI communities and examine how to work in clean room facilities. Scientific research of this kind needs to be done in an appropriate environment i.e. Silicon Valley Chip manufacturing (one HVAC standard) and pharmaceutical research (a different HVAC standard). Students get HVAC/pharmaceutical training for going into contaminated areas where there is a need for higher filtration through High Efficiency Particulate Air (HEPA) filtration. Students learn about the need for, and effects of, HEPA on systems (filters out 99.990 percent of contaminants) that keeps people safe and provides appropriate conditions for clean room facilities.

This requires advanced knowledge of safety systems and protocols that ensure employees remain safe and free of contamination. Students learn about advanced personal protective equipment (PPE) and earn decontamination certification of both tools and persons.

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

U3. Develop and articulate an awareness of one's own culturally-determined perspective and how it might be viewed from the perspective of others.

Matching course component(s):
HVAC program course modules demonstrating Depth area U3 include but are not limited to…

APPT 154 – Year 2 Semester 2 – Electrical Controls and Fundamentals – Module 12 - Industrial Safety
In this module, HVAC students learn about the Environmental Protection Agency (EPA), as it applies to the HVAC area - it's history, why it's here to protect us, laws, regulations, and policies aimed at creating and maintaining healthy environments protecting human health as well as the process of how they are to be administered and enforced fairly and effectively.

Students learn how the EPA's work extends to various groups - communities, individuals, businesses, and state, local and tribal governments – and provides access to accurate information sufficient to help various constituents to effectively participate in learning about and managing human health and environmental risks.

Applied examples may be on such topics as environmental justice processes around how contaminated lands and toxic sites are identified, cleaned up, and revitalized by responsible parties. Students take a certification test on this material – on toxic materials and the environment.

Depth Map: Additionally, must include at least three of the following:

U4. Critically examine the contributions of many groups to a particular aspect of United States culture;

Matching course component(s):

U5. Evaluate and analyze the interaction of at least one marginalized culture with the dominant U.S. culture;

Matching course component(s):
APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Apprenticeship Orientation Module / Union Heritage
The Union Heritage class discusses the history and importance of unions and the labor movement and how they helped address discrimination against systemically oppressed people from lower, working-class and BIPOC groups. Students learn applied examples of this, such as how the Industrial Workers of the World (IWW) union wanted to abolish capitalism because of its systemic and negative effects on BIPOC people, women, children, and families.

The section of material on the study of our union's cultural traditions and "standards of excellence" covers the treatment of others – roles and responsibilities of various people in interactions in society. The standard of excellence is emphasized throughout the entire program and is a common theme throughout the program.

U6. Evaluate and analyze the interaction between at least two marginalized cultures or communities within the framework of United States society;

Matching course component(s):
APPT 151 Year 1 Semester 1 - Basic Refrigeration Service Skills – Module 1 Apprenticeship Orientation / Union Heritage
The Union Heritage class discusses the history and importance of unions and the labor movement and how they helped address discrimination against systemically oppressed people from lower- and working-class and BIPOC groups. Students learn applied examples of this, such as how the Industrial Workers of the World (IWW) union wanted to abolish capitalism because of its systemic and negative effects on BIPOC people, women, children, and families.

The section of material on the study of our union's cultural traditions and "standards of excellence" covers the treatment of others – roles and responsibilities of various people in interactions in society. The standard of excellence is emphasized throughout the entire program and is a common theme throughout the program.

U7. Explain culture as a concept and how it can unite or divide people into various groups;

Matching course component(s):

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

U8. Apply information about groups presented in the class to contemporary social and cultural relations;

Matching course component(s):
APPT 158 – Year 4 – Advanced Refrigeration and Chiller - Module 22 – Chillers.
Students learn about the discovery of Legionnaires Disease – from a faulty HVAC system at a major conference at an American Legion site in Philadelphia – a deadly airborne pathogen disease directly related to the improper installation, function and/or maintenance of HVAC technology. Students learn how to recognize signs of airborne pathogens (i.e. black mold). As an applied example of the interplay of social and cultural relations (human needs for safe, clean, pathogen free, and comfortable environments in terms of air temperature and quality /large gathering spots and the technology used to create comfortable and safe environments). Students learn how Legionnaires Disease was discovered in the 1970s as an airborne pathogen / bacterium that thrives in and can be transmitted by water droplets originating in hot water tanks, cooling towers, and the evaporative condensers of large air conditioning systems, such as those commonly found in hotels, community centers, government buildings, hospitals, schools, airports, colleges, and large office buildings. Students examine contemporary examples of Legionnaires Disease and its relationship to our social and cultural relations (understanding HVAC systems technology and ensuring its proper set up and maintenance) from all around the world.

U9. Analyze and interpret how culture shapes human development and behavior.

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):
HVAC Technology Program students must communicate in a variety of formats. Whether it is engaging with other apprenticeship students, workers, supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively using discipline specific terms.

HVAC Program courses demonstrating *B1 Communication* skills include but are not limited to:
APPT 144A Year 2 Module 2 Related Science - where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

APPT139A Year 5 Semester 5 Industrial Installations.

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

Matching course component(s):
Because the application of what HVAC Technology Program students learn and practice must be extremely precise to meet all existing codes and regulations, students learn and apply many mathematical concepts and data collection models.

HVAC Technology Program courses demonstrating *B2 Computation* include but are not limited to:
APPT 145 Year 3 Semester 1 Module 13 Advanced Trade Math - Apprentices are required to apply mathematical concepts in practical applications.

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

Matching course component(s):
Students in the HVAC Technology Program must communicate in a variety of formats. Whether it is engaging with other apprenticeship students, workers, supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively using discipline specific terms.

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

HVAC Program courses demonstrating Standard *B3* skills include but are not limited to:

APPT 134B Industrial Safety Year 2 semester 2 Module 12 - OSHA 30- The Triangle Shirtwaist Factory fire in the Greenwich Village area of New York City. Students learn to express their ideas in a logical and organized manner using discipline specific-appropriate language by researching, discussing and writing about or presenting on case studies such as the Triangle Shirtwaist Factory fire.

APPT 145 Year 3 Semester 1 Module 13 Advanced Trade Math - Apprentices are required to apply mathematical concepts in practical applications.

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):
Students in the HVAC Technology Program meet standard B4 in many ways. Their training includes courses on the environmental impact of their work on the planet. They also learn about the role of their union in advancing the social and economic opportunities for historically marginalized groups. And through on the job training and other required program elements, HVAC students also learn the real-world importance of their actions and behaviors on others.

HVAC Program courses demonstrating Standard *B4* skills include but are not limited to:
APPT139A Year 5 Semester 5 Industrial Installations - Students expand their community and global consciousness and responsibility by learning about large scale geopolitical factors that interact to shape industrial work in the US and globally. One example used in this class is the US "Creating Helpful Incentives to Produce Semiconductors" (CHIPS) Act of 2022. As applied examples, students specifically research CHIPS act industrial facilities in Austin and Phoenix and examine the interaction between politics, geographic regions, cultures and industries as inter-related cultural factors there.

APPT 144A Year 2 Module 2 Related Science where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

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):
Because the application of what HVAC Technology Program students learn and practice must be extremely precise to meet all existing codes and regulations, students learn information competency – including digital literacy - throughout the program.

HVAC Program courses demonstrating Standard *B5* skills include but are not limited to:
APPT 144A Year 2 Module 2 Related where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

APPT 134B Industrial Safety Year 2 semester 2 Module 12 OSHA 30 - The Triangle Shirtwaist Factory fire in the Greenwich Village area of New York City. Students learn to express their ideas in a logical and organized manner using discipline specific-appropriate language by researching, discussing, and writing about or presenting on case studies such as the Triangle Shirtwaist Factory fire.

Requesting Faculty: Patricia Gibbs Date: May 20, 2024

Division Curr Rep: Tim Myres Date: 5/22/24

General Education Review Request
AREA VI - UNITED STATES CULTURES & COMMUNITIES

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____ Date: _____

General Education Review Request
AREA VII – LIFELONG LEARNING

Course Number & Title: Steamfitting and Pipefitting Technology Apprenticeship Program

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 VII – Lifelong Learning:

Courses in this area provide students with the skills needed to continue learning after they leave college. Courses focus on the study of humans as integrated intellectual, physiological, social and psychological beings in relation to society and the environment. Full understanding and synthesis of a subject area usually occurs when the skills mastered in a course of study are applied to the context of another discipline. Students are given an opportunity to experience this concept in courses that provide opportunities that bridge subject areas so that students learn to function as independent and effective learners.

Physical activity courses are given inclusion to this area in recognition of the reality that you have to be healthy and live a long life in order to take advantage of lifelong learning. Foothill College deems that: Physical activity courses are acceptable, if they entail movement by the student and are overseen by a faculty member or coach. These courses can be taken for up to 2 units.

A course meeting the Lifelong Learning General Education Requirement ***must*** help students:

L1. Acquire and demonstrate knowledge, skills, and attitudes that support the application of information across two or more disciplines of study;
L2. Develop practical tools that can be integrated into problem solving and decision making with current day-to-day issues and which can be adapted to future situations;
L3. Identify current issues and concerns that influence health, communication or learning;
L4. Comprehend and apply health and well-being issues to the individual and to society;
L5. Find, evaluate, use and communicate information in all of its various formats and understand the ethical and legal implications of the use of that information.

In addition, a course meeting this requirement ***must*** include ***at least one*** of the following student learning outcomes:

L6. Define career and life planning strategies and resources including goal setting and time management, learning styles and self-awareness, building a positive work ethic and leadership qualities;
L7. Analyze beliefs, attitudes, biases, stereotypes, and behaviors in individuals and communities regarding temporary needs, problems and concerns facing society;
L8. Understand the importance of physical fitness and its impact on an individual's physical and mental health;
L9. Use technology to analyze problems and create solutions.

General Education Review Request
AREA VII – LIFELONG LEARNING

Course Number & Title: Steamfitting and Pipefitting 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:

L1. Acquire and demonstrate knowledge, skills, and attitudes that support the application of information across two or more disciplines of study;

Matching course component(s):
Steam fitting students acquire the skills, attitudes and discipline expectations from a variety of different disciplines during their course of study. Students develop GE level competence in areas as diverse as social science, math, and communications. They must also apply them across disciplines and to various stakeholders.

Develop the ability to utilize knowledge and skills from various disciplines effectively. Example: **APPT 146** Year 3, Semester 2, Module 14 (Steam Theory and Application) integrates principles from physics, engineering, and safety management.

L2. Develop practical tools that can be integrated into problem solving and decision making with current day-to-day issues and which can be adapted to future situations;

Matching course component(s):
The skills and tools steam fitting students learn have myriad applications beyond their profession. For example, the math and communication levels needed to read, understand, and explain a blueprint or schematic far exceed those need to identify a bank error and to seek redress for the error.

Equip students with practical skills and tools for informed decision making and problem solving. Example: **APPT 143** Year 2, Semester 1, Module 9 (Cutting and Welding) offers hands-on experience with welding equipment, focusing on practical applications of thermal dynamics in metal fabrication.

L3. Identify current issues and concerns that influence health, communication or learning;

Matching course component(s):
Steam fitting students of necessity must learn and understand the significant health and safety concerns that come with participation in the profession. Notably their learning is embedded in protecting their own safety and the safety of the public who use and rely on the infrastructure the trade professions install and maintain.

Recognize and address contemporary challenges affecting personal and community health, effective communication, and learning processes. Example: **APPT 134B** Year 1, Semester 1, Module 2 (Construction Safety) addresses workplace safety protocols, highlighting their impact on personal health and safety communication.

L4. Comprehend and apply health and well-being issues to the individual and to society;

Matching course component(s):
Steam fitting students of necessity must learn and understand the significant health and safety concerns that come with participation in the profession. Notably their learning is embedded in protecting their own safety and the safety of the public who use and rely on the infrastructure the trade professions install and maintain.

Understand and implement practices that promote personal and societal health and well-being. Example: **Health Awareness Monthly Meetings** & Physical fitness sessions integrated throughout the curriculum emphasize the importance of maintaining physical health as part of professional training. **APPT 139A Industrial Install Year 5 Semester 1 Module 21.** Environmental safety such as Superfund sites.

General Education Review Request
AREA VII – LIFELONG LEARNING

L5. Find, evaluate, use and communicate information in all of its various formats and understand the ethical and legal implications of the use of that information.

Matching course component(s):
Steam fitting students train and work within a legal and code environment that mandates not only their learning the laws, rules, and codes that govern their industry, but also their origins and importance. For the public to have confidence in the work the trades do in general and steam fitting students do in specific, the students in the program are evaluated throughout on their adherence to safety protocols.

The ability to locate, evaluate, and use information effectively to accomplish a specific purpose. Example: **APPT 139B Medical Gas Code Year 5 Semester 1 Module 22**-Focus on Federal and Local regulations and code for installing Medical Gas Piping. **APPT 134B Industrial Safety**- OSHA 30 Focus on Federal and State level safety code and regulations.

Depth Map: Additionally, must include at least one of the following:

L6. Define career and life planning strategies and resources including goal setting and time management, learning styles and self-awareness, building a positive work ethic and leadership qualities;

Matching course component(s):
Students studying in the steam fitting program are by definition in a career defining program. Their success in the program is supported in a number of ways including the support courses available to them in a tutorial setting.

Formulate and utilize strategies and resources for effective career and life planning. Example: **APPT 141 Year 1, Semester 1, Module 1** (Union Heritage) introduces apprentices to the history and structure of trade unions, aiding in career orientation and long-term professional planning.

L7. Analyze beliefs, attitudes, biases, stereotypes, and behaviors in individuals and communities regarding temporary needs, problems and concerns facing society;

Matching course component(s):

L8. Understand the importance of physical fitness and its impact on an individual's physical and mental health;

Matching course component(s):
Monthly Physical/Mental Health Meetings

L9. Use technology to analyze problems and create solutions.

Matching course component(s):
APPT 148 Advanced Drawing and Blueprint Reading- Uses CAD technology and other computer softwares to analyze piping systems for potential problems and find solutions.

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):
Steamfitter Pipefitter Technology Program students must communicate in a variety of formats. Whether it is engaging with other apprenticeship students, workers, supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively using discipline specific terms.

Pipefitter Program courses demonstrating *B1 Communication* skills include but are not limited to:

General Education Review Request
AREA VII – LIFELONG LEARNING

APPT 144A Year 2 Module 2 Related Science - where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

APPT139A Year 5 Semester 5 Industrial Installations.

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

Matching course component(s):
Because the application of what Steamfitter Pipefitter Technology Program students learn and practice must be extremely precise to meet all existing codes and regulations, students learn and apply many mathematical concepts and data collection models.

Steamfitter Pipefitter Technology Program courses demonstrating *B2 Computation* include but are not limited to:
APPT 145 Year 3 Semester 1 Module 13 Advanced Trade Math - Apprentices are required to apply mathematical concepts in practical applications.

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

Matching course component(s):
Students in the Steamfitter Pipefitter Technology Program must communicate in a variety of formats. Whether it is engaging with other apprenticeship students, workers, supervisors, or with customers and the public, students in this program are required to express themselves clearly, concisely, and persuasively using discipline specific terms.

Pipefitter Program courses demonstrating Standard *B3* skills include but are not limited to:
APPT 134B Industrial Safety Year 2 semester 2 Module 12 - OSHA 30- The Triangle Shirtwaist Factory fire in the Greenwich Village area of New York City. Students learn to express their ideas in a logical and organized manner using discipline specific-appropriate language by researching, discussing and writing about or presenting on case studies such as the Triangle Shirtwaist Factory fire.

APPT 145 Year 3 Semester 1 Module 13 Advanced Trade Math - Apprentices are required to apply mathematical concepts in practical applications.

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):
Students in the Pipefitter Technology Program meet standard B4 in many ways. Their training includes courses on the environmental impact of their work on the planet. They also learn about the role of their union in advancing the social and economic opportunities for historically marginalized groups. And through on the job training and other required program elements, sheet metal students also learn the real-world importance of their actions and behaviors on others.

Pipefitter Program courses demonstrating Standard *B4* skills include but are not limited to:
APPT139A Year 5 Semester 5 Industrial Installations - Students expand their community and global consciousness and responsibility by learning about large scale geopolitical factors that interact to shape industrial work in the US and globally. One example used in this class is the US “Creating Helpful Incentives to Produce Semiconductors” (CHIPS) Act of 2022. As applied examples, students specifically research CHIPS act industrial facilities in Austin and Phoenix and examine the interaction between politics, geographic regions, cultures and industries as inter-related cultural factors there.

General Education Review Request
AREA VII – LIFELONG LEARNING

APPT 144A Year 2 Module 2 Related Science where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

APPT 146 Year 3 Semester 2 Module 14-Steam Theory.

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):
Because the application of what Steamfitter Pipefitter Technology Program students learn and practice must be extremely precise to meet all existing codes and regulations, students learn information competency – including digital literacy - throughout the program.

Pipefitter Program courses demonstrating Standard *B5* skills include but are not limited to:
APPT 144A Year 2 Module 2 Related where apprentices are required to do a science project presentation or paper requiring a significant amount of research based on the scientific process and scientific evidence.

APPT 134B Industrial Safety Year 2 semester 2 Module 12 OSHA 3.

Requesting Faculty: Robert Cormia Date: 5/17/24

Division Curriculum Rep: Tim Myres Date: 5/21/24

FOR USE BY GE SUBCOMMITTEE:

Review Committee Members: N/A

Recommended for Approval: _____ Not Recommended for Approval: _____ Date: _____

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

Note: application did not go to subcommittee

FOR USE BY CURRICULUM OFFICE:

Approved: _____ Denied: _____ CCC Co-Chair Signature: _____ Date: _____