

College Curriculum Committee Meeting Agenda

Tuesday, November 14, 2023

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: October 31, 2023	2:00	Action	#11/14/23-1	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. Credit for Prior Learning & Noncredit Workgroups	2:17	Information		CCC Team
5. New Certificate Proposal: Archaeological Field Work	2:20	Action	#11/14/23-2	Kaupp
6. Stand Alone Application: MATH 233	2:25	2nd Read/ Action	#11/14/23-3, 5	Kaupp
7. Stand Alone Application: NCBS 433	2:28	2nd Read/ Action	#11/14/23-4, 5	Kaupp
8. New Certificate Application: Semiconductor Processing	2:31	1st Read	#11/14/23-6	Kaupp
9. Stand Alone Application: MUS 70R series	2:36	1st Read	#11/14/23-7	Kaupp
10. Credit for Prior Learning Summit	2:39	Information		Kaupp
11. Honors Institute	2:49	Information		Connell/ Cunningham
12. Non-transcriptable Certificates	2:59	Discussion	#11/14/23-8	Hueg/Kaupp
13. Best Practices for Equitable COR Updates	3:17	Discussion		Kaupp
14. Good of the Order	3:27			Kaupp
15. Adjournment	3:30			Kaupp

*Times listed are approximate

Attachments:

- #11/14/23-1 Draft Minutes: October 31, 2023
- #11/14/23-2 New Certificate Proposal: Archaeological Field Work
- #11/14/23-3 & 5 Stand Alone Application: [MATH 233](#)
- #11/14/23-4 & 5 Stand Alone Application: [NCBS 433](#)
- #11/14/23-6 New Certificate Application: Semiconductor Processing
- #11/14/23-7 Stand Alone Application: [MUS 70R series](#)
- #11/14/23-8 Non-transcriptable certificates in 2023-24 catalog

2023-2024 Curriculum Committee Meetings:

<u>Fall 2023 Quarter</u>	<u>Winter 2024 Quarter</u>	<u>Spring 2024 Quarter</u>
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).
- TBD* 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).
- TBD* 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:

Ulysses Acevedo (LA), Micaela Agyare (LRC), Chris Allen (Dean, APPR), Jeff Bissell (KA), Cynthia Brannvall (FAC), Rachelle Campbell (HSH), Anthony Cervantes (Dean, Enrollment Services), Sam Connell (BSS), Angie Dupree (BSS), 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), 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), Ram Subramaniam (Dean, STEM), Kyle Taylor (STEM), Mary Vanatta (Curriculum Coordinator), Voltaire Villanueva (AS President), Erik Woodbury (De Anza CCC Faculty Co-Chair)

COLLEGE CURRICULUM COMMITTEE

Committee Members – 2023-24

Meeting Date: 11/14/23Co-Chairs (2)

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

Voting Membership (1 vote per division)

<u>✓</u>	Ulysses Acevedo	7507	LA	acevedoulysses@fhda.edu
<u>✓*</u>	Micaela Agyare	7086	LRC	agyaremicaela@fhda.edu
<u>✓</u>	Jeff Bissell	7663	KA	bisselljeff@fhda.edu
<u>✓*</u>	Cynthia Brannvall	7477	FAC	brannvallcynthia@fhda.edu
<u>✓*</u>	Rachelle Campbell	7469	HSH	campbellrachelle@fhda.edu
<u>✓*</u>	Sam Connell	7197	BSS	connellsamuel@fhda.edu
<u>✓*</u>	Angie Dupree		BSS	dupreeangelica@fhda.edu
<u>✓*</u>	Jordan Fong	7272	FAC	fongjordan@fhda.edu
<u>✓*</u>	Valerie Fong	7135	Dean—LA	fongvalerie@fhda.edu
<u>✓*</u>	Evan Gilstrap	7675	Articulation	gilstrapevan@fhda.edu
<u>✓</u>	Maritza Jackson Sandoval	7409	CNSL	jacksonsandovalmaritza@fhda.edu
_____	Andy Lee	7783	CNSL	leeandrew@fhda.edu
_____	Brian Murphy		APPR	brian@pttc.edu
<u>✓*</u>	Tim Myres		APPR	timm@smw104jatc.org
<u>✓*</u>	Sarah Parikh	7748	STEM	parikhsarah@fhda.edu
<u>✓</u>	Eric Reed	7091	LRC	reederic@fhda.edu
<u>✓</u>	Richard Saroyan	7232	SRC	saroyanrichard@fhda.edu
<u>✓</u>	Amy Sarver	7459	LA	sarveramy@fhda.edu
<u>✓*</u>	Ram Subramaniam	7426	Dean—STEM	subramaniamram@fhda.edu
<u>✓*</u>	Kyle Taylor	7126	STEM	taylorkyle@fhda.edu

Non-Voting Membership (4)

_____			ASFC Rep.	
<u>✓*</u>	Mary Vanatta	7439	Curr. Coordinator	vanattamary@fhda.edu
_____			Evaluations	
_____			SLO Coordinator	

Visitors

 Chris Allen*, Tracee Cunningham, Cathy Draper*, Paul Starer*, Ameeta Tiwana

 * Indicates in-person attendance

**College Curriculum Committee
Meeting Minutes
Tuesday, October 31, 2023
2:00 p.m. – 3:30 p.m.
Administrative Conference Room 1901; virtual option via Zoom**

Item	Discussion
1. Minutes: October 17, 2023	Approved by consensus.
2. Report Out and Check-in	<p>Speaker: All LRC: No updates to report.</p> <p>Language Arts: Acevedo mentioned Spanish dept. working on new cert.</p> <p>SRC: No updates to report.</p> <p>Kinesiology & Athletics: No updates to report.</p> <p>BSS: Connell shared division CC Canvas site up and running. Recently approved proposal for Archaeology cert.; Philosophy dept. working on new courses re: ethics in artificial intelligence. Requested discussion at CCC related to Honors courses.</p> <p>Apprenticeship: Myres shared faculty are working on GE mapping. Allen shared their BS degree app. didn't get moved forward at state level; plan to incorporate feedback and resubmit for next round in January. Also mentioned recently received a new grant related to Credit for Prior Learning (CPL) work.</p> <p>Fine Arts & Comm: No updates to report.</p> <p>STEM: No updates to report.</p> <p>Hueg attended CIO conference last week, lots of discussions re: CPL, dual enrollment, Apprenticeship, providing credentials for more Californians. Great presentation by state Chancellor on the state's priorities. Announced we'll be forming two groups under umbrella of CCC: one will discuss CPL and come up with a plan on how we approach advancing CPL at Foothill; the other will discuss noncredit, which also came up a lot at conference. Info is forthcoming, will be seeking as many folks as possible to participate.</p> <p>Counseling: Jackson Sandoval noted two big Counseling pushes for November: 1) registration, certain days designated for students to work on Ed Plans; 2) applications, for students to work on college apps.</p> <p>HSH: No updates to report.</p> <p>Gilstrap shared working on updating some ADTs, will be reaching out to relevant faculty. Shared C-ID having difficulty finding faculty participants for FDRGs (faculty discipline review groups—review course descriptors, TMCs, etc.) and COREs (course outline of record evaluators). Noted which disciplines are currently needed, info available on C-ID website. Shared that CSU Chancellor's Office has provided no update re: future of CSU GE, discussions are ongoing. Noted this December is final time we'll be submitting for IGETC (next year will be for CalGETC). Allen thanked Gilstrap for informative presentation at previous meeting.</p>

	<p>Kaupp shared Academic Senate discussing faculty satisfaction w/ Follett Bookstore; please reach out with any feedback. Noted discussion at previous meeting re: public comment period; confirmed public comment is open to everyone, including CCC members, but members' comments cannot come from their role as CCC member (i.e., members may comment as a regular faculty member, dean, etc.).</p>
3. Public Comment on Items Not on Agenda	No comments.
4. Announcements a. ASCCC Fall Plenary Resolutions b. Notification of Proposed Requisites c. Credit for Prior Learning Conference—November 3rd	<p>Speakers: CCC Team Resolutions packet attached as info item. Kaupp stressed importance of reading resolutions and commenting on those you find important.</p> <p>New/updated prerequisite for EMS 52, 401; ENGR 61B; MATH 12, 33. New corequisite for MATH 2BL, 33, 233; NCBS 433. Vanatta explained these are new/updated prereqs and coreqs, which have gone through Content Review process and been approved by division CC. Standard procedure to share out at CCC. Please share with your constituents.</p> <p>Hueg hopes someone from Foothill will attend this all-day virtual conference. Will distribute info. Kaupp stressed importance of attending conferences like this, so we can keep up-to-date on initiatives.</p>
5. Stand Alone Application: ALCB 452Y	<p>Speaker: Ben Kaupp Second read of Stand Alone Approval Request for ALCB 452Y. Kaupp explained this course will be taught to folks in memory care facilities. No comments.</p> <p>Motion to approve M/S (Gilstrap, J. Fong). Approved.</p>
6. Stand Alone Application: MATH 233	<p>Speaker: Ben Kaupp First read of Stand Alone Approval Request for MATH 233. Will be permanently Stand Alone and used as coreq support for MATH 33. Jackson Sandoval asked for clarification that MATH 233 & NCBS 433 are exact same content but one is noncredit—Parikh responded, yes, some students need credit but others do not. Connell asked if course is for students being tutored—Parikh responded, not exactly tutoring but additional support for students taking MATH 33; these and other support courses created due to AB 1705. Bissell asked question about load—Subramaniam responded, support courses are loaded but if taught simultaneously they're loaded as one course.</p> <p>Second read and possible action will occur at next meeting.</p>
7. Stand Alone Application: NCBS 433	<p>Speaker: Ben Kaupp First read of Stand Alone Approval Request for NCBS 433. Will be permanently Stand Alone and used as coreq support for MATH 33. <i>[See item 6 for related comments.]</i></p> <p>Second read and possible action will occur at next meeting.</p>
8. Best Practices for Equitable COR Updates	<p>Speaker: Ben Kaupp At previous meeting, Kaupp asked the group to consider if we'd rather tackle topic as a whole group at CCC or create a subcommittee to discuss and bring recommendation to CCC. Would also like to discuss today ideas for method of delivery for implementation plan—how do we best support our colleagues as they update their CORs through the lens of equity? Sarver commented would love to be involved in discussion, but already on so many committees that joining another would be a deterrent. Brannvall suggested offering training classes as well as a PDF/document, since folks have different preferred learning styles; Professional Development classes could dig deep.</p>

	<p>Kaupp shared Guiding Principles doc created by CCC over past few years. Parikh clarified equity-related field has been added to COR and noted previous discussions at CCC concluded division reps will be in charge of guiding faculty and reviewing equity fields, or divisions could have designated person—Kaupp responded, each division has freedom to determine who is the reviewer. Parikh asked what exactly we’re discussing now—Kaupp responded, CCC tasked w/ figuring out how to best implement the Guiding Principles doc. We don’t necessarily need to create another document, but perhaps something like a quick reference guide. Noted has already had questions from faculty wondering why equity needs to be included in COR if they’re already teaching course in an equitable manner.</p> <p>Agyare asked for clarification that we’re discussing how faculty teach their course—Kaupp responded, faculty should be teaching to the COR, so all faculty will need to be aware of equity initiative (even those who don’t update CORs), but we’re more specifically discussing the actual process of updating the COR. Kaupp noted some part-time faculty not familiar with CORs. Acevedo believes discussing as larger group is the better option; mentioned 13-55 group has Canvas resource for communication and dissemination of information, suggested something similar for this process. Dupree agreed w/ idea of creating singular point of reference, noting would be helpful for division reps who will be getting a lot of questions from faculty; developing FAQ would create consistency across divisions. Connell asked if there is language expected by the state or examples—Kaupp responded, this is a local initiative (not from the state) but noted certain changes to the COR could trigger re-articulation. Gilstrap noted a fall plenary resolution re: updating Title 5 to include more equity in the COR, so eventually this may be a state-wide initiative.</p> <p>Draper supports idea of organized Canvas resource, suggested introductory video outlining importance of topic. Kaupp recalled big concern during discussions last year that process could become just a check box and stressed the need to get faculty to actively participate. Brannvall asked if we could work with Online Learning dept. to create resources, such as short videos—Kaupp responded, we can certainly reach out. Parikh agreed w/ Brannvall’s idea of “tidbits;” if info presented a little at a time it may not feel as overwhelming or pressuring. Kaupp summarized discussion thus far: we want to keep Guiding Principles doc as primary resource and provide supplementary help/guidance to faculty. Parikh and Brannvall volunteered to be part of tidbits group, Kaupp will join if available. Taylor asked about missing examples in Guiding Principles doc—Vanatta responded, there was a big push for examples when document created, but not many CORs have gone through process yet, so few examples were available. Plan is to eventually update doc to include more examples.</p> <p>Kaupp likes tidbits idea and thinks a single, centrally-available FAQ-type resource will also be valuable. Brannvall agreed that a central discussion at CCC is best, even if separate smaller group creates tidbits; believes Gilstrap’s presence is especially valuable, due to articulation-related concerns. Kaupp thanked the group for their ideas; discussions will continue at future meetings. Encouraged everyone to bring honest opinions and suggestions, and a welcoming mindset.</p>
9. Title 5 Regulations Changes for Local AA/AS Degrees	<p>Speaker: Evan Gilstrap Recent changes to Title 5 affect local AA/AS degrees (not ADTs); three statutes being changed: 55060, 55061, 55062.</p>

	<p>Gilstrap first outlined changes proposed for local GE. New local GE pattern designed to align w/ CalGETC; noted differences between our current local GE pattern and new pattern. Even though minimum units required for local GE being increased, this shouldn't affect us, as our local GE is already over that minimum. We have local control of courses included within the categories of new pattern, including whether or not to require lab for Natural Sciences category (new Title 5 language doesn't specify). Agyare noted absence of Lifelong Learning category. Gilstrap noted district policies (APs & BPs) will need updated.</p> <p>Gilstrap summarized changes re: awarding local associate degrees, related to course completion, residency, and calculating GPA. Language being added regarding use of noncredit courses to fulfill credit requirements as part of Credit for Prior Learning (CPL); districts being asked to establish process to allow students to petition. We already have district APs/BPs related to CPL, but this is new. Hueg believes this is a way to allow colleges to open up noncredit pathways which students can complete and then apply to fulfill credit requirements. Connell mentioned open access courses (e.g., Coursera, MIT). Reed mentioned noncredit version of C S 49—Gilstrap noted, under new process student could petition to apply noncredit version to an associate degree. Starer asked if there is now a codified concept/ description of what constitutes CPL—Gilstrap responded, encompasses many different things (e.g., credit by exam, industry certification, military training); faculty will need to create rubrics outlining what students are expected to know to complete course, so there are clear guidelines for evaluating student's experience/work to see if it satisfies that particular course. We'll also need to figure out how CPL completion is documented on student's transcript.</p> <p>Implementation date not yet determined, but Gilstrap advised should start conversations now for planned summer/fall 2025 implementation. One question to consider is whether we want to include Lifelong Learning category in our local GE. Subramaniam asked if we have any data on how many students earn local degrees vs. transfer degrees— Gilstrap responded, wants to find that out, as well as how many units it takes students to complete local GE. Subramaniam believes also useful to see how many students taking Lifelong Learning courses are also transfer students; could help us see potential impacts on enrollment in those courses, if left out of local GE. Starer believes removal of Lifelong Learning seems related to restrictions put on PE courses over the past few decades (e.g., repeatability); commented on certain changes from college authority to district authority and potential impact to college autonomy within a district. Bissell requested discussion of Lifelong Learning be on the forefront of conversation about local GE changes, as it could have a major impact on the Kinesiology & Athletics division.</p>
10. Non-transcriptable Certificates	<p>Speakers: Kurt Hueg & Ben Kaupp Topic delayed to future meeting, due to time constraint. Hueg would like to discuss non-transcriptable certs. and what they mean to the college.</p>
11. Good of the Order	Happy Halloween!
12. Adjournment	3:33 PM

Attendees: Ulysses Acevedo* (LA), Chris Allen* (Dean, APPR), Micaela Agyare* (LRC), Jeff Bissell (KA), Cynthia Brannvall* (FAC), Rachelle Campbell* (HSH), Sam Connell* (BSS), Cathy Draper* (HSH), Angie Dupree* (BSS), Jordan Fong* (FAC), Valerie Fong* (Dean, LA), Evan Gilstrap* (Articulation Officer), Kurt Hueg* (Administrator Co-Chair), Maritza Jackson Sandoval* (CNSL), Ben Kaupp* (Faculty Co-Chair), Tim Myres* (APPR), Sarah Parikh* (STEM), Eric Reed (LRC), Richard Saroyan (SRC), Amy Sarver (LA), Paul Starer (APPR), Ram Subramaniam* (Dean, STEM), Kyle Taylor* (STEM), Mary Vanatta* (Curriculum Coordinator)

* Indicates in-person attendance

Minutes Recorded by: M. Vanatta



FOOTHILL COLLEGE

New Degree or Certificate Proposal

Faculty Author(s): Connell

Division: Business & Social Sciences

Proposed Title of Degree/Certificate: Archaeological Field Work Certificate

Type of Award: Certificate of Achievement

Workforce/CTE Program: Yes

Which academic departments will be involved in the creation of this new degree/certificate? Are any new departments being created? Anthropology

Does De Anza offer a similar degree or certificate? No

What is the educational need for this new degree/certificate?

The Certificate in Archaeological Fieldwork prepares students for entry-level work in cultural resource management. The program provides opportunities for students to actively engage in archaeological research in both a field and laboratory setting. 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.

An Occupational Skills Certificate is awarded upon completion of all required courses with a grade of C or better.

How does the degree/certificate align with Foothill's Strategic Vision for Equity?

By providing options for low-cost field experience certificate, we are able to break down cost barriers that in the past have limited archaeological experience. Data from our Friday field school has shown substantial increase in diversity of students.

Comments and other relevant information for discussion:

Our field classes have trained students for almost two decades. Hundreds of students are working in cultural resource management, transferring, or in graduate school. Currently, we simply make a PDF cert that claims 'Field School Completion'. Current industry leaders, to include members of ACRA (American Cultural Resource Association) and SCA (Society for Cultural Archaeology), have called for formalizing the training process at the CCC level. These students will be equipped to move right into CRM jobs paying 20-30\$ an hour.

I borrowed initial language from the Pasadena City College Certificate.

MATH F233. : JUST-IN-TIME SUPPORT FOR MATH 33

Proposal Type

New Course

Effective Term

Summer 2024

Subject

Mathematics (MATH)

Course Number

F233.

Department

Mathematics (MATH)

Division

Science Technology Engineering and Mathematics (1PS)

Units

2.5

Former ID**Cross Listed****Related Courses**

NCBS F433. - JUST-IN-TIME SUPPORT FOR MATH 33

Maximum Units

2.5

Does this course meet on a weekly basis?

Yes

Weekly Lecture Hours

2.5

Weekly Lab Hours

0

Weekly Out of Class Hours

5

Special Hourly Notation**Total Contact Hours**

30

Total Student Learning Hours

90

Repeatability Statement

Not Repeatable

Credit Status

Credit

Degree Status

Non-Applicable

Is Basic Skills applicable to this course?

Yes

Basic Skills Level

Does Not Apply

Grading

Pass/No Pass Only

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

Transfer

Workforce/CTE

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

This course is needed to provide corequisite support for a transfer level math class. This will enable more students to complete a transfer level math class. See Section 5 of attached file (AB705 Math Improvement Plan, March 11, 2022).

Attach evidence

AB705 - Math Improvement plan.pdf

Need/Justification

This course is designed to support students who do not meet the multiple measures placement in MATH 33. The course provides just-in-time remediation of prerequisite skills necessary for MATH 33. Additionally, the course provides support in study skills and habits.

Course Description

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Math for Financial Thriving. Intended for students who are concurrently enrolled in MATH 33 at Foothill College. Topics include: a review of computational skills developed in beginning and intermediate algebra, including proportional reasoning, order of operations,

simplifying expressions, solving equations, use of variables, creating and using graphical displays.

Course Prerequisites

Course Corequisites

Corequisite: MATH 33.

Course Advisories

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

Course Objectives

The student will be able to:

1. Explore and assess ways to be a more effective learner
2. Use algebraic notation and symbol manipulation strategies
3. Explore relationships via tables and graphs
4. Identify important features of graphs
5. Describe estimation strategies

Course Content

1. Explore and assess ways to be a more effective learner
 1. Study skills
 1. Time management
 2. Organization
 3. Deep learning
 4. Strategic learning
 5. Test-taking strategies
 6. Authentic relating
 2. Self-assess using performance criteria and mastery levels to judge and improve one's own work
 1. Rubrics
 2. Identifying weaknesses and setting goals
 3. Learning from mistakes
 3. Leverage learning resources
 1. Study groups
 2. Canvas
 3. Video playlists
 4. Collaboration tools
 1. Microsoft 365
 2. Google
 3. Zoom
 5. Computer labs

6. Tutoring
2. Use algebraic notation and symbol manipulation strategies
 1. Variables
 2. Order of operations
 3. Units
 4. Dimensional analysis
 5. Conversions
 1. Percents
 2. Decimals
 3. Fractions
 6. Solve single variable equations
 1. Linear
 2. Exponential and logarithmic
 3. Quadratic and square root
 7. Solve multivariable equations as needed
3. Explore relationships via tables and graphs
 1. Linear
 2. Exponential
 3. Logarithmic
 4. Multivariable
4. Identify important features of graphs
 1. Vertical axis variable and units
 2. Horizontal axis variable and units
 3. Slope of linear function
5. Describe estimation strategies
 1. Rounding
 2. Counting up
 3. Equivalencies
 4. Proportional reasoning

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. Access to graphing technology, such as a graphing calculator or graphing software.
2. For all sections of this course, students will need access to a computer and the internet.

Methods of Evaluation

Methods of Evaluation may include but are not limited to the following:
 Group and independent exploratory activities
 Homework
 Performance in MATH 33

Methods of Instruction

Methods of Instruction may include but are not limited to the following:

Group work
Discussion
Mini-lectures
Instructor-guided discovery
Formative assessment

Representative Text(s)

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

Other Materials

No course materials.

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

1. Problem sets
2. Exploratory activities and/or projects
3. Reading and/or writing assignments

Authorized Discipline(s):

Mathematics

Faculty Service Area (FSA Code)

MATHEMATICS

Taxonomy of Program Code (TOP Code)

1702.00 - Mathematics Skills

Articulation Office Only

C-ID Notation

IGETC Notation

CSU GE Notation

Transferability

None

Validation Date

5/31/23

Division Dean Only

Seat Count

40

Load

.056

FOAP Codes:

Fund Code

114000 - General Operating- Unrestricted

Org Code

125051 - Mathematics

Account Code

1320

Program Code

170100 - Mathematics, General

NCBS F433. : JUST-IN-TIME SUPPORT FOR MATH 33

Proposal Type

New Course

Effective Term

Summer 2024

Subject

Non-Credit: Basic Skills (NCBS)

Course Number

F433.

Department

Mathematics (MATH)

Division

Science Technology Engineering and Mathematics (1PS)

Units

0

Former ID**Cross Listed****Related Courses**

MATH F233. - JUST-IN-TIME SUPPORT FOR MATH 33

Maximum Units

0

Does this course meet on a weekly basis?

Yes

Weekly Lecture Hours

2.5

Weekly Lab Hours

0

Weekly Out of Class Hours

0

Special Hourly Notation**Total Contact Hours**

30

Total Student Learning Hours

30

Repeatability Statement

Unlimited Repeatability

Repeatability Criteria

NCBS 433 is a corequisite support course for MATH 33. Each time a student takes this pair of courses together, NCBS 433 will be used to address the student's current needs for success in MATH 33. For example, one quarter this might be using the order of operations to simplify expressions and another quarter it might be using dimensional analysis for unit conversions, or one quarter this might be time management and another quarter it might be leveraging collaboration tools for group projects.

Credit Status

Non-Credit

Degree Status

Non-Applicable

Is Basic Skills applicable to this course?

Yes

Basic Skills Level

Does Not Apply

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

Transfer

Workforce/CTE

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

This course is needed to provide corequisite support for a transfer level math class. This will enable more students to complete a transfer level math class. See Section 5 of attached file (AB705 Math Improvement Plan, March 11, 2022).

Attach evidence

AB705 - Math Improvement plan.pdf

Need/Justification

This course is designed to support students who do not meet the multiple measures placement in MATH 33. The course provides just-in-time remediation of prerequisite skills necessary for MATH 33. Additionally, the course provides support in study skills and habits.

Course Description

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Math for Financial Thriving. Intended for students who are concurrently enrolled in MATH 33 at Foothill College. Topics include: a review of computational skills developed in beginning and intermediate algebra, including proportional reasoning, order of operations, simplifying expressions, solving equations, use of variables, creating and using graphical displays.

Course Prerequisites**Course Corequisites**

Corequisite: MATH 33.

Course Advisories

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

Course Objectives

The student will be able to:

1. Explore and assess ways to be a more effective learner
2. Use algebraic notation and symbol manipulation strategies
3. Explore relationships via tables and graphs
4. Identify important features of graphs
5. Describe estimation strategies

Course Content

1. Explore and assess ways to be a more effective learner
 1. Study skills
 1. Time management
 2. Organization
 3. Deep learning
 4. Strategic learning
 5. Test-taking strategies
 6. Authentic relating
 2. Self-assess using performance criteria and mastery levels to judge and improve one's own work
 1. Rubrics
 2. Identifying weaknesses and setting goals

3. Learning from mistakes
3. Leverage learning resources
 1. Study groups
 2. Canvas
 3. Video playlists
 4. Collaboration tools
 1. Microsoft 365
 2. Google
 3. Zoom
 5. Computer labs
 6. Tutoring
2. Use algebraic notation and symbol manipulation strategies
 1. Variables
 2. Order of operations
 3. Units
 4. Dimensional analysis
 5. Conversions
 1. Percents
 2. Decimals
 3. Fractions
 6. Solve single variable equations
 1. Linear
 2. Exponential and logarithmic
 3. Quadratic and square root
 7. Solve multivariable equations as needed
3. Explore relationships via tables and graphs
 1. Linear
 2. Exponential
 3. Logarithmic
 4. Multivariable
4. Identify important features of graphs
 1. Vertical axis variable and units
 2. Horizontal axis variable and units
 3. Slope of linear function
5. Describe estimation strategies
 1. Rounding
 2. Counting up
 3. Equivalencies
 4. Proportional reasoning

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. Access to graphing technology, such as a graphing calculator or graphing software.
2. For all sections of this course, students will need access to a computer and the internet.

Methods of Evaluation

Methods of Evaluation may include but are not limited to the following:

Group and independent exploratory activities
Homework
Performance in MATH 33

Methods of Instruction

Methods of Instruction may include but are not limited to the following:

Group work
Discussion
Mini-lectures
Instructor-guided discovery
Formative assessment

Representative Text(s)

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

Other Materials

No course materials.

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

1. Problem sets
2. Exploratory activities and/or projects
3. Reading and/or writing assignments

Authorized Discipline(s):

Mathematics

Faculty Service Area (FSA Code)

MATHEMATICS

Taxonomy of Program Code (TOP Code)

1702.00 - Mathematics Skills

Articulation Office Only

C-ID Notation**IGETC Notation**

CSU GE Notation

Transferability

None

Validation Date

N/A

Division Dean Only

Seat Count

40

Load

.056

FOAP Codes:

Fund Code

114000 - General Operating- Unrestricted

Org Code

125051 - Mathematics

Account Code

1320

Program Code

170100 - Mathematics, General



California
Community
Colleges

Equitable Placement and Completion: English and Math Validation of Practices and Improvement Plans

Introduction and Form Instructions

This page provides an introduction of this form and instructions about completing this process.

Introduction

By fall 2022 the California Community College system must transition to full implementation of AB 705 and associated regulations by sun-setting local placement practices explicitly prohibited by legislation and regulation, and by ensuring that all U.S. high school graduate students are placed into and enroll in coursework that maximizes the probability that they complete transfer level math and English within a year of their first enrollment in the discipline (where math and English requirements exist).

With some limited exceptions, this means that by fall 2022 all U.S. high school graduate students, both new and continuing, in certificate, degree or transfer programs, will be placed into and enroll in transfer level English and math/quantitative reasoning courses (whether with or without support). Every college will submit an Equitable Placement and Completion Improvement Plan to describe changes in placement practices and curricular structures the college will implement to reach this goal.

The Improvement Plan does not require the submission of data for colleges that will, by fall 2022, ensure transfer level placement in both math/quantitative reasoning and English for all U.S. high school graduates, along with no pre-transfer level enrollments, including multi-term transfer-level courses, for students in certificate, degree or transfer programs.

For colleges that plan to continue placements and/or enrollments into pre-transfer level courses or multi-term transfer-level courses in fall 2022, the Improvement Plan requires completion of a Data Addendum to validate that such practices meet AB 705 standards. In the Data Addendum colleges will submit local data in an attempt to show completion is maximized for a specific program or student group that enrolls, by requirement or by choice, into pre-transfer level courses or multi-term transfer-level courses.

Instructions

As described in guidance memorandum ESS 21-300-015 Equitable Placement and Completion: English and Math Validation of Practices and Improvement Plans released November 17, 2021 (link below), all California Community Colleges are to complete the enclosed Equitable Placement and Completion Improvement Plan by March 11, 2022 using this form. Please review the memo for more details and please follow the detailed instructions in the form and data template closely. These materials will be reviewed and questions addressed during a system webinar on Monday, November 29, 2021, 3:30-5:00pm. If you are unable to attend, you will be able to find the slides and a recording of the webinar in the Equitable Placement and Completion community in the Vision Resource Center (<https://visionresourcecenter.cccco.edu/>) approximately a week after the webinar.

Please download the guidance memorandum describing the Equitable Placement and Completion: English and Math Validation of Practices and Improvement Plans by clicking on the link below:

[ESS 21-300-015 Equitable Placement and Completion: English and Math Validation of Practices and Improvement Plans](#)

Please download the Improvement Plan form by clicking on the link below (the pdf is provided for reference only; submit the form by completing this electronic form):

[Link: Improvement Plan Form \(for reference only\)](#)

Please download the Data Addendum Template by clicking on the link below. Data only needs to be submitted by colleges for which pre-transfer level placements and/or enrollments will continue in fall 2022. Complete the full data template and upload the renamed file in question #2 below.

[AB 705 Improvement Plans Data Addendum Template](#)

Once you complete and submit this form, Chancellor’s Office staff will route the form through AdobeSign for signatures. You will enter the needed contact information for those signatures at the end of the form.

If you have any questions about this form, please contact Dean Dr. LeBaron Woodyard at LWOODYAR@CCCCO.edu. If you have any questions about the content of your AB 705 Improvement Plan, please email AB705@cccco.edu.

[Glossary of Terms](#)

As you are completing this form, you can save your work and return to complete it later. To do so, the form contains a "Save and Continue" phrase located at the top right portion of each page. In order to save information on a specific page you must advance to the next page and click the "Save and Continue" phrase. Follow the instructions on the screen.

District and College Information

This page collects information on the district and college.

1) District/College*

District: _____

College: _____

Improvement Plan Overview

In this Improvement Plan, colleges will respond to a set of prompts based on how colleges intend to shift local communication, advising, course availability, placement, and support practices to fully implement Equitable Placement and Completion (AB 705). Carefully consider the four options below and respond based on the conversations and planning that has taken place on your local campus with students, faculty and administrators. Please fully review the enclosed memo (above) before completing this plan.

2) Choose option 1, 2, 3a, or 3b

All of these options are for all students implicated in AB 705: U.S. high school graduate students (including ELL & ESL students) in certificate, degree or transfer programs. Under specific sets of conditions, for students who seek a goal other than transfer, and who are in certificate or degree programs with specific requirements that are not met with transfer-level coursework, college-level mathematics may be appropriate if such courses maximize the probability that a student will enter and complete the required college-level coursework or higher within one year of initial enrollment in the discipline.*

No matter which option is chosen, *all colleges* should review the practices provided throughout this form and use them to improve AB 705 implementation (review the pdf provided above).

Option 1: As of fall 2021, the college has already effectively implemented AB 705, meaning there is default transfer-level placement in both math/quantitative reasoning and English AND no pre-transfer-level enrollments (including multi-term or transfer level courses). If this is true of your college, no further reporting is required. Please submit this form with this checkbox indicated (the form will be routed through AdobeSign for signatures). Still, be sure to review the practices provided throughout this form and use them to improve AB 705 implementation (review the pdf provided above).

Option 2: By fall 2022, the college will have default transfer-level placement in both math/quantitative reasoning and English AND no pre-transfer-level enrollments (including multi-term transfer-level courses). If this is true of your college, complete Part A of the Improvement Plan. Be sure to review the practices provided throughout this form and use them to improve AB 705 implementation (review the pdf provided above).

Option 3: The college will have default transfer-level placement and enrollment into math/quantitative reasoning and English for all or most students by fall 2022 but will continue to enroll some students into pre-transfer level courses, either by requirement or choice.

3) You selected option 3 above, please choose option(s) A and/or B to further describe the college's plan for pre-transfer-level (or multi-term transfer-level course) enrollment:

If either or both options are true of your college, complete the full Improvement Plan and the Data Addendum Template.

A) By fall 2022, the college will have default transfer-level placement and enrollment into math/quantitative reasoning and English, with no required pre-transfer level enrollments, but will continue to allow some students to enroll in pre-transfer level courses (or multi-term transfer-level courses).

B) By fall 2022, the college will have local exceptions to default transfer-level placement in math/quantitative reasoning and/or English and, as a result, will continue to require pre-transfer level enrollments, or multi-term transfer-level courses for these students.

Part A

You selected one of the following options: 2, 3a or 3b above. Therefore, you must complete Part A of the Improvement Plan which includes additional reporting requirements for colleges that still have pre-transfer level enrollments as of fall 2021.

Aligning Placement Practices with Legislation and Regulation

During the initial phase of implementation, colleges were allowed to experiment with practices that, per regulation, require Chancellor's Office approval and/or validated proof of effectiveness. Those practices have not proven to be effective in fulfilling the mandates of AB 705 based on the Validation of Practices data and results, and overall one-year enrollment and completion rates to date. For this reason, the California Community College System will sunset the use of these practices.

4) By checking each box below, you are verifying that your college/district will be in compliance with each item by fall 2022: *

The college/district placement method uses multiple measures to increase a student's placement recommendation, but not lower it, and allows high performance on one measure to offset low performance on other measures.

Guided placement, including self-placement, is only used if "high school performance data is not available or usable with reasonable effort."

Guided placement, including self-placement, does not “incorporate sample problems or assignment, assessment instruments or tests, including those designed for skill assessment” or “request students to solve problems, answer curricular questions, present demonstrations/examples of course work designed to show knowledge or mastery of prerequisite skills, or demonstrate skills through tests or surveys.”

For certificate or degree programs, pre-transfer college math placement and enrollment is required only for programs “with specific requirements that are not met with transfer-level coursework”.

The college ensures that special populations are not disproportionately enrolled in pre-transfer level coursework, including English Language Learners who graduated from a U.S. high school, Business Science Technology Engineering Mathematics (BSTEM) students who have not completed Algebra 2 in high school, and all student groups identifiable in the Chancellor's Office Management Information System (COMIS), such as Disabled Students Program and Services (DSPS) and Educational Opportunity Program and Services (EOPS) students, foster youth, veterans, economically disadvantaged students, older students, and student racial groups.

Improvement Plans to Transition to Full AB 705 Implementation

In this section, colleges will detail how local practices will be transformed to fully implement AB 705. A slate of promising practices are provided to help inform local planning and provide colleges guidance. The practices detailed below are strongly recommended as practices worth investing in to successfully improve AB 705 implementation. Colleges are asked to review and consider these practices and to check (below) any the college plans to utilize. This section also leaves space for colleges to provide narrative about other changes they plan to implement. Colleges should include adjunct faculty in planned AB 705 implementation reforms.

Our college will [check all that apply]:

5) Our college will develop corequisite or enhanced courses to support students in transfer-level coursework (check each that apply):

for English

for Business, Science, Technology, Engineering and Mathematics (BSTEM) math

for Statistics and Liberal Arts Mathematics (SLAM) math This will be our quantitative reasoning course + coreq

for Quantitative Reasoning courses outside of the mathematics department that satisfy quantitative reasoning/math requirements for transfer

Not sure if we should check BSTEM here also since we did the work to build coreq's for Pre-Calc was done 2+ years ago.

6) Our college will adjust the class schedule to expand existing corequisite or enhanced sections of transfer-level coursework (check each that apply):

for English

for BSTEM math

for SLAM math

for Quantitative Reasoning courses outside of the mathematics department that satisfy quantitative reasoning/math requirements for transfer

7) Our college will do the following: (Check all that apply)

Develop or expand transferable quantitative reasoning options, including options for students seeking only the associate degree (i.e. transferable quantitative reasoning courses, such as Financial Literacy, Technical Mathematics for the Trades, Liberal Arts Math, contextualized statistics courses such as Business Statistics or Psychology Statistics, etc.) that articulate to the California State University (CSU).

Develop or expand the use of student high school performance for placement beyond the entry level transfer-level course in mathematics.

Develop or expand support labs, tutoring centers, and embedded tutoring and incentivize student participation in these support services.

Utilize early alert systems to connect struggling students with relevant supports, monitor the efficacy of these systems and make improvements as necessary.

Integrate resources into gateway courses that connect students with support for basic needs, mental health services, stress management, etc.

Invest in professional development focused on high challenge, high support equity-minded teaching practices with the goal of achieving stronger, more consistent and more equitable pass rates across sections of the same transfer-level course.

Invest in communities of practice for instructors teaching gateway courses to share activities and practices that humanize the classroom, promote interaction and engagement, foster a sense of belonging, communicate a belief in student capacity and growth, and mitigate stereotype-threat.

Create safe places for equity conversations about section-level success rate data disaggregated by race, income, gender, etc. to help faculty develop a reflective teaching practice that fosters innovation to improve learning outcomes for marginalized student populations.

Other practices as described in the following. - Write In:

Part B

Part B of the Improvement Plan includes additional reporting requirements for colleges that plan to still have pre-transfer level enrollments as of fall 2022.

You selected one of the following options: 3a or 3b above. Therefore, you must complete Part B of the Improvement Plan which includes additional reporting requirements for colleges that still have pre-transfer-level enrollments as of fall 2021.

In light of the extensive national, state, and local research showing that pre-transfer level enrollment weakens students' chances of completing transfer requirements and is more likely to adversely impact marginalized student populations, colleges choosing to continue pre-transfer level enrollments should take proactive steps to ensure AB 705 rights and protections for students.

The following practices are recommended to ensure that students are fully aware of their rights to access to transfer-level courses and that they are intentionally and systematically encouraged to follow their transfer-level advisement. Colleges are asked to review and consider these practices and to check (below) any the college plans to utilize.

8) Our college will do the following: (Check all that apply)

Ensure students are informed of their rights to access transfer level courses or credit ESL and support as required by AB 1805, AND of the benefits of doing so.

Remove options and recommendations for pre-transfer level courses (or multi-term transfer-level courses) from the placement process.

Block enrollment into pre-transfer-level courses (or multi-term transfer-level sequences) until the student completes a petition that explains their right to enroll at the transfer-level and the benefits of doing so.

Intentionally design the messaging within the placement process, as well as matriculation, orientation and advising services, to encourage transfer-level enrollment by communicating an equity-minded belief in student capacity to succeed in transfer-level coursework and provide information about available academic supports.

Increase scheduling flexibility aligned with default transfer-level placement and enrollment by replacing pre-transfer level sections with concurrent supports for transfer-level sections (e.g., enhanced transfer-level sections or corequisites). As a reminder, colleges that continue to enroll students in pre-transfer level are required to validate outcomes in the Improvement Plan Data Addendum Template.

Ensure that for students in associate degree programs that are not math intensive, the default placement is appropriate transfer-level math or quantitative reasoning courses (e.g., Financial Literacy, Technical Mathematics for the Trades, Liberal Arts Math, contextualized statistics courses such as Business Statistics or Psychology Statistics, etc.).

Ensure that for students in more math intensive associate degree programs, the default placement is a contextualized math course that articulates with CSU for Area B4.

Ensure that for associate degree programs requiring coursework with pre-transfer level math/quantitative reasoning prerequisites, prerequisites are satisfied by any one of the following: 1) placement into, enrollment into, or completion of transfer-level math or quantitative reasoning to fulfill the prerequisite or 2) satisfactory completion of equivalent high school coursework.

Use other mechanisms to ensure that U.S. high school graduate, degree-seeking students enrolling in pre-transfer college math are in “certificate or degree programs with specific requirements that are not met with transfer-level coursework”.

Other practices as described here - Write In:

Part C. Data Addendum Template

Part C of the Improvement Plan requires completion of the Data Addendum Template.

You selected options 3a and/or 3b above, therefore you must complete this section of the plan. Complete and attach the Improvement Plan Data Addendum Template to attempt to validate placement practices that require pre-transfer level enrollment or that result in pre-transfer level enrollment in fall 2022 and beyond. The data template has been designed to show if results meet the requirements of AB 705 (see data template for detailed instructions).

Please Note: To date the review of statewide data, individual college data, and college submissions has failed to produce evidence that pre-transfer level enrollments meet AB 705 requirements. Colleges planning to allow or require continued pre-transfer level enrollment that cannot submit evidence that it meets the standards of the law will be expected to place and enroll all U.S. high school graduate, certificate, degree and transfer students in transfer-level coursework (with appropriate concurrent support as needed) by fall 2022.

The Improvement Plan Data Addendum Template is located here:

[AB 705 Improvement Plan Data Addendum Form](#)

9) Complete and attach the Improvement Plan Data Addendum Template.

Certification Page

This page collects information for the certification of the form.

10) Please provide the name, title, email address, and contact telephone number for the district President/Superintendent/Chancellor or their designee in the space below.

First Name: _____

Last Name: _____

Title: _____

Email Address: _____

Phone Number: _____

President/Superintendent/Chancellor Signature via Adobe Sign:

Adobe Sign Date for President/Superintendent/Chancellor:

11) Please provide the name, title, email address, and contact telephone number for the college's Chief Instructional Officer (CIO) or their designee in the space below.

First Name: _____

Last Name: _____

Title: _____

Email Address: _____

Phone Number: _____

Chief Instructional Officer (CIO) Signature via Adobe Sign:

Adobe Sign Date for Chief Instructional Officer (CIO):

12) Please provide the name, title, email address, and contact telephone number for the college's Academic Senate President or their designee in the space below.

First Name: _____

Last Name: _____

Title: _____

Email Address: _____

Phone Number: _____

AS President Signature via Adobe Sign:

Adobe Sign Date for AS President :

Thank You!

Thank you for taking the Equitable Placement and Completion: English and Math Validation of Practices and Improvement Plans Form. You will be receiving a confirmation email with a PDF copy of your submission. An editable link will be included in the email if you wish to change any responses.

Foothill College
Credit Program Narrative
Certificate of Achievement in Semiconductor Processing

Item 1. Program Goals and Objectives

The Certificate of Achievement in Semiconductor Processing would provide foundational knowledge in semiconductor processing, including the basic operations of clean room manufacturing and the math and maintenance skills needed to succeed as a process technician. The certificate is an integral part of the apprenticeship pathway for semiconductor process technicians.

Program Learning Outcomes:

- Students will be able to safely navigate a cleanroom work environment.
- Students will be prepared to move wafers through the processing steps.
- Students will be able to troubleshoot processing issues as they arise and formulate a plan for the next steps in addressing them.
- Students will be prepared for a career in semiconductor processing.

Item 2. Catalog Description

The Certificate of Achievement in Semiconductor Processing provides foundational knowledge and skills necessary for safely and efficiently moving wafers through the semiconductor processing stages in a cleanroom work environment. This certificate is open to all students with an interest in learning more about semiconductor processing. Students in the apprenticeship pathway will complete the Certificate of Achievement as a part of the apprenticeship program.

Item 3. Program Requirements

Requirements	Course #	Title	Units	Sequence
Core Courses (15 units)	ENGR 61A	Introduction to Semiconductor Technology	5	Year 1, Winter
	ENGR 101A	Advanced Manufacturing	5	Year 1, Spring
	MATH 40A	Quantitative Reasoning	5	Year 1, Fall

TOTAL UNITS: 15 units

While the proposed sequence is stated above, the courses do not require prerequisites and may be taken in any order to allow for students to join the sequence in any quarter. Additionally, the courses may be taken over a longer duration than one year, if needed, to allow for flexibility for students to complete the certificate.

Proposed Sequence:

Year 1, Fall = 5 units

Year 1, Winter = 5 units
 Year 1, Spring = 5 units
TOTAL UNITS: 15 units

Item 4. Master Planning

The Certificate of Achievement in Semiconductor Processing is aligned with Foothill College’s mission statement regarding preparing students for the workforce in addition to critical thinking skills and technical knowledge to be a productive member of a democratic society. The certificate has been developed with input from industry partners and government boards in order to design an achievable and supported apprenticeship pathway to support the United States’ mission of semiconductor manufacturing in the United States.

Item 5. Enrollment and Completer Projections

We expect there to initially be 20 students getting the certificate of achievement in the first year. The program scheduling will be based on the needs of industry employers and the program is expected to grow to 35 students based on the number of semiconductor process technician jobs available in a given year. Additionally, the courses, and subsequently the certificate, will be available to students who are interested, but not yet accepted into the apprenticeship program.

Several years down the line, this program is expected to support hundreds of students a year in order to supply the local semiconductor manufacturing industry with process technicians, as both the industry grows and the current technicians move into more advanced roles.

		Year 1		Year 2	
Course #	Course Title	Annual Sections	Annual Enrollment	Annual Sections	Annual Enrollment
MATH 40A	Quantitative Reasoning	3	94	N/A	N/A
ENGR 61A	Introduction to Semiconductor Technology	N/A	N/A	N/A	N/A
ENGR 101A	Advanced Manufacturing	N/A	N/A	N/A	N/A

Note: MATH 40A is a recently-created course with just one year of enrollment data. ENGR 61A & 101A are new courses which have not yet been offered.

Item 6. Place of Program in Curriculum/Similar Programs

This certificate is new and there are not currently any similar programs at Foothill. This certificate is designed to be an initial exposure to semiconductor processing. An additional Associate of Science degree is being designed to build on this certificate and give completers of this certificate, as well as current semiconductor process technicians, the skills and knowledge to advance their careers. The two programs are designed to stack or build on one another.

Item 7. Similar Programs at Other Colleges in Service Area

This certificate is the first of its kind in California and is perfectly situated at Foothill College to serve the semiconductor processing industry in Silicon Valley. Currently, Foothill is the only community college in the Bay Area offering semiconductor processing courses. Some selective research institutions in the area (Stanford University) offer training in using semiconductor

processing equipment for students in their graduate programs and some students in their undergraduate research programs. Those programs are intended to help students learn how to design state-of-the-art products for research purposes. Those students go on to design what semiconductor process technicians build. We have had discussions with Stanford about how to collaborate in sharing knowledge, yet the intended outcome for the students in their program to become semiconductor designers is very different from the intended outcome for our students to become semiconductor process technicians.

Similar programs to the one that Foothill is establishing in the Bay Area include a successful training program in Seattle that leads into working as a process technician at Intel. In addition, there is a successful partnership between Maricopa Community College in Tempe, Arizona, with the local semiconductor processing companies.

Additional Information Required for State Submission:

TOP Code: 0945.00 – Industrial Systems Technology and Maintenance

Annual Completers: 25

Net Annual Labor Demand: 103

Faculty Workload: 0.33 FTES

New Faculty Positions: 1

New Equipment: 0

New/Remodeled Facilities: 0

Library Acquisitions: 0

Gainful Employment: Yes

Program Review Date: Fall, 2024

Distance Education: 1-49%



Labor Market Analysis for Program Recommendation Semiconductor Process Technician Occupations Foothill College

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

August 2023

Recommendation

Based on all available data, there appears to be an “undersupply” of Semiconductor Process Technician workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara counties). There is a projected annual gap of about 226 students in the Bay region and 103 students in the Silicon Valley Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0945.00 - Industrial Systems Technology and Maintenance 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 Semiconductor Process Technician Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new program at Foothill College.

- **Electrical and Electronics Drafters (17-3012):** Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for the manufacture, installation, or repair of electrical equipment.
Entry-Level Educational Requirement: Associate’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 58%
- **Industrial Engineering Technologists and Technicians (17-3026):** Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.
Entry-Level Educational Requirement: Associate’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 51%

Occupational Demand

Table 1. Employment Outlook for Semiconductor Process Technician 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
Electrical and Electronics Drafters	884	967	83	9%	512	102	\$31	\$39
Industrial Engineering Technologists and Technicians	985	1,212	227	23%	766	153	\$27	\$32
Total	1,868	2,179	311	17%	1,278	255		

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 Semiconductor Process Technician 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
Electrical and Electronics Drafters	470	496	26	6%	248	50	\$34	\$44
Industrial Engineering Technologists and Technicians	416	492	76	18%	301	60	\$28	\$34
Total	886	988	102	12%	549	110		

Source: Lightcast 2022.3

Silicon Valley Sub-Region includes: Santa Clara Counties

Job Postings in Bay Region and Silicon Valley Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Aug. 2022 - July 2023)

Occupation	Bay Region	Silicon Valley
Industrial Engineering Technologists and Technicians	5,409	1,553
Electrical and Electronics Drafters	869	606

Source: Lightcast

Table 4a. Top Job Titles for Semiconductor Process Technician Occupations for latest 12 months (Aug. 2022 - July 2023) - Bay Region

Title	Bay	Title	Bay
Manufacturing Technicians	1,071	Operations Technicians	68
Maintenance Technicians	1,058	Automotive Maintenance Technicians	59
Production Technicians	358	Analog IC Design Engineers	51
Equipment Maintenance Technicians	142	Manufacturing Specialists	45
Maintenance Workers	132	Process Operators	44
Process Technicians	132	Production Test Technicians	40
Analog Design Engineers	118	Maintenance Engineers	39

Title	Bay	Title	Bay
Electrical Designers	77	PCB Designers	39
Manufacturing Engineering Technicians	68	CAD Engineers	38

Source: Lightcast

Table 4b. Top Job Titles for Semiconductor Process Technician Occupations for latest 12 months (Aug. 2022 – July 2023) - Silicon Valley Sub-Region

Title	Silicon Valley	Title	Silicon Valley
Manufacturing Technicians	400	Electrical Designers	36
Maintenance Technicians	200	Plating Operators	28
Analog Design Engineers	113	Production Test Technicians	28
Process Technicians	83	Maintenance Workers	27
Production Technicians	66	Manufacturing Assembly Technicians	27
Analog IC Design Engineers	51	Equipment Maintenance Engineers	24
Manufacturing Engineering Technicians	45	PCB Designers	24
Equipment Maintenance Technicians	44	Analog Designers	17
CAD Engineers	36	Cleanroom Technicians	17

Source: Lightcast

Industry Concentration

Table 5. Industries hiring Semiconductor Process Technician 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)
Semiconductor and Related Device Manufacturing	242	261	8%	12%
Engineering Services	234	258	10%	12%
Electronic Computer Manufacturing	218	196	-10%	9%
Electrical Contractors and Other Wiring Installation Contractors	89	107	20%	5%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	58	92	57%	3%
Other Electronic Component Manufacturing	45	47	3%	2%
Printed Circuit Assembly (Electronic Assembly) Manufacturing	50	53	5%	2%
Research and Development in Biotechnology (except Nanobiotechnology)	38	66	75%	2%
Architectural Services	33	39	17%	2%

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)
Pharmaceutical Preparation Manufacturing	32	38	16%	2%

Source: Lightcast 2022.3

Table 6. Top Employers Posting Semiconductor Process Technician Occupations in Bay Region and Silicon Valley Sub-Region (Aug. 2022 - July 2023)

Employer	Bay	Employer	Silicon Valley
Aerotek	150	Apple	50
Tesla	139	Randstad	44
Randstad	131	Sanmina	38
Kelly Services	109	Actalent	33
Puls	102	Aerotek	28
AT&T	89	Applied Materials	28

Source: Lightcast

Educational Supply

There are three (3) community colleges in the Bay Region issuing 28 awards on average annually (last 3 years ending 2021-22) on TOP 0945.00 - Industrial Systems Technology and Maintenance. In the Silicon Valley Sub-Region, there is one (1) community college that issued six (6) awards on average annually (last 3 years) on this TOP code.

There is one (1) other CTE educational institution in the Bay Region issuing one (1) award on average annually (last 3 years ending 2021-22) on CIP 47.0303 - Industrial Mechanics and Maintenance Technology/Technician. There are no other CTE educational institution in the Silicon Valley Sub-Region issuing awards on average annually (last 3 years) on this CIP code.

Table 7. Community College Awards on TOP 0945.00 - Industrial Systems Technology and Maintenance in Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Laney	East Bay	0	0	1	1
Los Medanos	East Bay	12	8	1	21
San Jose City	Silicon Valley	2	4	0	6
Total		14	12	2	28

Source: Data Mart

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

Table 7b. Other CTE Institutions Awards on CIP 47.0303 - Industrial Mechanics and Maintenance Technology/Technician in Bay Region

College	Subregion	Certificates of at least 1 but < 2 years	Total
Aviation Institute of Maintenance-Fremont	East Bay	1	1

College	Subregion	Certificates of at least 1 but < 2 years	Total
Total		1	1

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 labor market gap in the Bay region with 255 annual openings for the Semiconductor Process Technician occupational cluster and 29 annual (3-year average) awards for an annual undersupply of 226 students. In the Silicon Valley Sub-Region, there is also a gap with 110 annual openings and seven (7) annual (3-year average) awards for an annual undersupply of 103 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0945.00 - Industrial Systems Technology and Maintenance

Metric Outcomes	Bay All CTE Programs	Foothill All CTE Programs	State 0945.00	Bay 0945.00	Silicon Valley 0945.00	Foothill 0945.00
Students with a Job Closely Related to Their Field of Study	74%	88%	74%	79%	71%	N/A
Median Annual Earnings for SWP Exiting Students	\$53,090	\$73,174	\$49,735	\$61,436	\$71,804	N/A
Median Change in Earnings for SWP Exiting Students	24%	42%	35%	43%	34%	N/A
Exiting Students Who Attained the Living Wage	54%	66%	66%	61%	72%	N/A

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

Skills, Certifications and Education

Table 9. Top Skills for Semiconductor Process Technician Occupations in Bay Region (Aug. 2022 – July 2023)

Skill	Posting	Skill	Posting
Good Manufacturing Practices	715	Test Equipment	334
Hand Tools	597	Production Equipment	332
Preventive Maintenance	506	Semiconductors	320
Manufacturing Processes	477	Electrical Systems	309
Machinery	448	Environment Health And Safety	302
Power Tool Operation	407	Debugging	292
Automation	401	General Mathematics	286
Electrical Engineering	397	Electronics	270
Equipment Maintenance	384	Hydraulics	250

Skill	Posting	Skill	Posting
Standard Operating Procedure	367	Forklift Truck	245

Source: Lightcast

Table 10. Certifications for Semiconductor Process Technician Occupations in Bay Region (Aug. 2022 - July 2023)

Certification	Posting	Certification	Posting
Valid Driver's License	782	DOT Certification	17
Security Clearance	77	CDL Class B License	14
CDL Class C License	69	Engineer in Training	13
Airframe & Powerplant (A&P) Certificate	53	Certified Mold Remediation Technician	13
Forklift Certification	50	LEED Accredited Professional (AP)	12
FCC General Radiotelephone Operator License (GROL)	25	CompTIA A+	12
CDL Class A License	22	Professional Engineer (PE) License	12
Commercial Driver's License (CDL)	21	Product Certification	11

Source: Lightcast

Table 11. Education Requirements for Semiconductor Process Technician Occupations in Bay Region

Education Level	Job Postings	% of Total
High school or GED	2,112	45%
Associate degree	938	21%
Bachelor's degree & higher	1,605	34%

Source: Lightcast

Note: 44% 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

MUS F070R : INDEPENDENT STUDY IN MUSIC/MUSIC TECHNOLOGY

Proposal Type

Course Revision

Effective Term

Summer 2024

Subject

Music (MUS)

Course Number

F070R

Department

Music (MUS)

Division

Fine Arts and Communication (1FA)

Units

1

Course Title

INDEPENDENT STUDY IN MUSIC/MUSIC TECHNOLOGY

Former ID**Cross Listed****Related Courses****Maximum Units**

1

Does this course meet on a weekly basis?

Yes

Weekly Lecture Hours

0

Weekly Lab Hours

3

Weekly Out of Class Hours

0

Special Hourly Notation

Total Contact Hours

36

Total Student Learning Hours

36

Repeatability Statement

Not Repeatable

Credit Status

Credit

Degree Status

Applicable

Is Basic Skills applicable to this course?

No

Grading

Letter Grade (Request for Pass/No Pass)

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:

Transfer

Workforce/CTE

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

This course fulfills multiple functions within the music/music technology program. MUS 70R provides motivated learners an opportunity for further and more targeted inquiry. It also serves as a vehicle for course substitution (e.g., when a graduating student needs a required course that is not being immediately offered).

Attach evidence

Need/Justification

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

Course Description

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

Course Prerequisites

Course Corequisites

Course Advisories

Course Objectives

The student will be able to:

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

Course Content

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

Lab Content

Not applicable.

Special Facilities and/or Equipment

When taught via Foothill Global Access: ongoing access to computer with email software and capabilities; email address; JavaScript-enabled internet browsing software.

Methods of Evaluation

Methods of Evaluation may include but are not limited to the following:

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

Methods of Instruction

Methods of Instruction may include but are not limited to the following:

Independent study as defined in the student-faculty contract

Representative Text(s)

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

Other Materials

Text will vary with content.

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

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

Authorized Discipline(s):

Music

Faculty Service Area (FSA Code)

MUSIC

Taxonomy of Program Code (TOP Code)

1004.00 - Music

Articulation Office Only

C-ID Notation

IGETC Notation

CSU GE Notation

Transferability

CSU

Validation Date

3/20/12; 12/6/12; 11/18; 5/24/23

Division Dean Only

Seat Count

10

Load

.000

FOAP Codes:

Fund Code

114000 - General Operating- Unrestricted

Org Code

143051 - Music-General

Account Code

1320

Program Code

100400 - Music

Department	Certificate Title	Certificate Type
Anthropology	Applied Anthropology	Certificate of Proficiency
Anthropology	Archaeological Field School	Certificate of Proficiency
Anthropology	Archaeology	Certificate of Proficiency
Anthropology	Cultural Anthropology	Certificate of Proficiency
Anthropology	Cultural Resource Management	Certificate of Proficiency
Anthropology	Forensic Anthropology	Certificate of Proficiency
Anthropology	Medical Anthropology	Certificate of Proficiency
Anthropology	Physical Anthropology	Certificate of Proficiency
Apprenticeship - Sheet Metal	Sheet Metal Air Conditioning Specialist	Career Certificate
Graphic & Interactive Design	Garment Printing	Skills Certificate
Music Technology	Music and Medicine	Certificate of Proficiency
Music Technology	Music Business	Certificate of Proficiency
Music Technology	Pro Tools	Certificate of Proficiency
Photography	Photo Criticism	Skills Certificate
Sociology	General Sociology	Certificate of Proficiency
Sociology	Social Welfare	Certificate of Proficiency
Theatre Technology	Theatre Technology	Career Certificate
Theatre Technology	Theatre Costume and Makeup	Career Certificate
Theatre Technology	Theatre Production Organization	Career Certificate