

**COLLEGE OF SAN MATEO**

**PROGRAM VIABILITY FORM  
INSTRUCTIONAL PROGRAMS**

*The Program Viability process serves as the mechanism for the assessment of programs that have been identified as “at risk.” Program Viability is a component of campus planning that leads to increased quality of instruction and service and to better use of existing resources. The process is an extension of Program Review and is intended to be a positive look at an at-risk program. Quantitative and qualitative data are used to review a program’s academic health and ensure that the program reflects the College mission and accomplishes college, division, and program goals. Program Viability review may result in a recommendation to improve a program through minor programmatic changes, to improve a program through major programmatic changes, or to discontinue the program.*

**Name of Program: Drafting**  
**Division(s): Business**  
**Program Viability Committee members: Christy Baird, Jesenia Diaz, Lee Miller, Arielle Smith, and Christopher Walker**  
**Start Date for Review: Fall 2022**

**I. DESCRIPTION OF PROGRAM** *(Data resources: CSM Course Catalogue; department records; Program Review, Strategic Plan; Educational Master Plan; ISLOs; program degree and certificate SLOs; discussions with faculty, students, and community; District sources; additional sources deemed appropriate by review committee)*

Drafting is common to all manufacturing and construction activities. The drafter interprets the engineer's, architect, interior designer and industrial designer’s ideas, presenting them in the language of manufacturing and construction. The Drafting Technology Program courses are designed as project-based learning that educates a diverse student population that includes engineers, designers, architects, fabricators, contractors as well as students interested in fields of study that require CAD/CAM programs

The program offers 5 courses, with an additional course in the catalog but no longer offered:

- DRAF 110: Solidworks 1 (CSU)
- DRAF 111: Solidworks 2 (CSU)
- DRAF 113: REVIT (CSU)
- DRAF 121: Computer Aided Drafting 1 (CSU/UC)
- DRAF 130: Mechanical design with CAD (CSU/UC) (considered a capstone course, lists DRAF 122 as a prerequisite)
- DRAF 122: Computer Aided Drafting 2 (CSU/UC) (has not been offered in at least 5 years, out of date for curriculum updates, but still in catalog. Last offered in 2016, last ran in 2014)

**EMP/Strategic & Institutional Priorities:** The Drafting program supports the teaching and learning aspects of the district strategic priorities and CSM institutional priorities by providing a CE program that supports skill development across several job categories/industries, namely architecture, engineering, interior design, and industrial design.

II. **QUANTITATIVE INDICATORS AND ANALYSIS** (*Data resources: Educational Master Plan; Core Program and Student Success Indicators; additional data provided by Office of Planning, Research and Institutional Effectiveness; previous Program Review and Planning reports; other department records; assessment of student learning outcomes; additional sources deemed appropriate by review committee*)

- Drafting Certification Analysis (9/27/2022)
- Drafting Occupation Deep Dive (9/27/2022)
- Program Overview – Drafting (April 2023)
- 2018-19 Drafting Program Review
- 2021-22 Drafting Program Review data (no program review submitted)
- Student Success and Core Program Indicators – Academic Years 2018/19 to 2020/21
- Statewide enrollment dashboard/CCCCO DataMart
- 2018-2023 Drafting faculty assignment load report

- a. Evaluate the quantitative sources with respect to enrollment, retention, and student success, including student learning outcomes. —Identify trends; determine and evaluate the (anticipated) effect of any recent or planned programmatic changes. Briefly discuss how effectively the program addresses students’ needs relative to current, past, and projected program and college student success rates. Identify and discuss any unmet student needs.

**Statewide trends** show decrease in demand: FTES by 54% and headcount by 41%, from 2012-2019.

**Competition:** There are 25 programs in the state and 5 in the area (it appears that some additional local programs may have been discontinued since 2019). CSM enrollment in the program is representative of 1.6% of the enrollment in this discipline in the local Bay Area.

- Enrollment:**
- FA18-SP23 (50 sections scheduled, 5 each semester, 44 ran)
  - 5 courses have had min 20 enrollment as of census (10%)
  - 17 courses had under 10 enrollment as of census (34%)
  - 6 courses were cancelled due to low enrollment (12%)
  - 26 ran under the contract minimum in that given semester (52%)

DRAF 110 – 1 semester had enrollment of 20, all semesters have enrollment of 10+  
 DRAF 111 - No semester has had enrollment higher than 7  
 DRAF 113 – All semesters under 20, 1 semester under 10, has been cancelled 2 times  
 DRAF 121 – 4 semesters had enrollment of 20+, every semester has enrollment over 10  
 DRAF 130 – No semester has had enrollment higher than 5, has been canceled 4 times

Total enrollment of each semester FA18-SP23 at census (duplicated student count):

Year	Fall	Spring
2018-19	41	40
2019-20	53	52

2020-21	47	55
2021-22	66	44
2022-23	59	59

Average enrollment/semester: 52

**Certificate and degree outcomes** across the last 6 years (since 2015-16)

- 20 completed degrees and certs, 12 AA degrees, 6 CA, 2 CS
- Last degree was awarded in 2018-19
- Last Drafting Technology: CAD cert awarded in 2016-17

**Articulation:** DRAF 121 is listed as a course option for the Design major at CSULB. That is the only transfer articulation for any of the DRAF courses.

**Labor market trends:** Labor market trends for drafting have been in a steady decline. In looking at recent job postings:

- 9% of related job postings list AutoCAD, with an expected decline of 13% in projected skill growth in the next 2 years.
- 6% of related job postings list SolidWorks, with an expected decline of 13% in projected skill growth in the next 2 years.

Projected growth in drafter related fields is anticipated to decline by 2%-37% over the next 5 years.

- b. Analyze the productivity of this program in terms of its target load. Identify trends; determine and evaluate the (anticipated) effect of any recent or planned programmatic changes. Discuss the number of full-time and adjunct faculty, overload and reassigned FTEF, and the effect of these factors on the efficiency of the program.

**Course offerings:** 5 courses, 1 section each, per semester, though not all ran

**Faculty:** 1 FT faculty, no adjuncts

**FTEF:** DRAF 110 and DRAF 111 were sometimes taught concurrently (at the same day/time, with different assignments for each section) and load was assigned for just one section.

Reassigned FTEF for most semesters since Spring 2009.

Year	FTEF	Reassigned FTEF	Total FTEF
2018-19	1.1	1.05	2.14
2019-20	1.6	0.4	2.00
2020-21	1.9	0	1.91
2021-22	1.6	0.2	1.83
2022-23	1.9	0	1.91

**Load:** Decline of 28% from 2018-2021. No load averaging option available.

Year	Load
2018-19	370.7
2019-20	317.5
2020-21	268.2

No recent or planned programmatic changes.

- c. Does the program address students' needs with respect to equity in terms of diversity, age, and gender? Evaluate the impact of programmatic changes or other measures that have been implemented in order to improve student success or address unmet needs with respect to equity.

The program generally serves non-traditional students. They are returning students updating their knowledge of the software programs because of the yearly changes or professionals and skilled workers from local manufacturing industries and design companies.

III. **QUALITATIVE INDICATORS AND DISCUSSION** (*Data resources: OPRIE reports, Program Viability Committee research, open forums, additional sources deemed appropriate by review committee.*)

- a. Describe qualitative information obtained through surveys, campus and community forums, focus groups or other means. Discuss how this information should be used in conjunction with the quantitative data in the previous section to provide a complete picture of the program.

Interviews conducted with primary faculty member, Lilya Vorobey, and division dean, Francisco Gamez. Question list provided in appendices. Information from interviews served to contextualize the data, add content expertise to the discipline, expected trends, program challenges, etc.

IV. Program Administration and Professional Responsibilities

- a. Describe how the program has fulfilled administrative requirements like program review, curriculum updates, student recruitment, community/employer outreach, advisory committees, grant funding compliance, and other required activities.

**Program Review:** The last program review submitted by the Drafting program was in 2018, putting the Drafting program into incompliance with CA Ed Code (§78016). §78016 requires CTE program review every 2 years to demonstrate program meets labor market demand (market analysis done), does not represent unnecessary duplication of competitive programs in the area, demonstrated effectiveness as measured by employment and completion of students. Any program that does not meet requirements shall be terminated within one year.

**Curricular updates:** Curricular updates are not up to date – curricular update missing for all courses for 2023. DRAF 122 will be deactivated next year. Curricular updates took place on 2-4 year cycles, meaning some courses were updated on time but others were not.

**Student Recruitment:** No evidence of efforts made to engage in student recruitment for the program in the last 5 years

**Community/employer outreach:** Evidence of existing employer connections that are used to help students with internship/employment opportunities; no additional evidence provided for other or new community/employer outreach

**Advisory Committee:** Evidence of compliance with advisory committee meetings. Last meeting was April 23, 2023, but no mention was made of the program undergoing the PIV process reflected in the minutes.

**Grant funding compliance:** Release time has been funded by Perkins or Strong Workforce grants, which are performance-based grants, but upon review of the program and curricular development outcomes by the current dean, it was determined that the funding source needed to be shifted to Fund 1 due to noncompliance with grant funding requirements (no demonstrable results to support initial performance outcomes).

## V. SUMMARY OF DATA

- a. Summarize the data and cite internal and external factors that clearly show the program's strengths, weaknesses, opportunities and threats.

### Program Strengths

- Proved support around specific skills-based tools and software across multiple industries

### Program Weaknesses

- Technology issues: required software – school supported loaner laptops/chromebooks do not have the capacity to run the needed software. Students do have access to a computer lab on campus with computers that have sufficient capacity to run software.
- Insufficient support and investment in recruiting students and marketing program. Faculty have not been present at recruiting events, connecting with industry partners.
- Has not created new curricular offerings to support changing industry needs (ex, industrial design)
- Has not utilized resource request process to request additional technology support for students (have no record of resource requests from 2018-present); did not complete Program Review during 2021 cycle.
- Ed Code §78016 noncompliance for CTE program review

### Program Opportunities

- Creating new industry partnerships.
- Investment in recruiting and marketing.
- Pivoting to create new curriculum around computer aided design and machining that relates to 3D printing.
- Collaboration with Architecture and Engineering.

- Investment in school supported loaner laptops/chromebooks with sufficient capacity to run needed software for students. Students do have access to a computer lab on campus with computers that have sufficient capacity to run software.

#### Program Threats

- Declining enrollment across the Bay Area. Competing programs (appx 10 competing programs identified in the Bay Area), but enrollment in the discipline has been trending down across the state over the last decade.
- Industry need – no degree or certificate is required (skills test or Autodesk certification requested). There is not a direct career path in drafting (it plays a support role to other career paths). Field is considered to have low job demand (25%).
- Ed Code §78016 incompliance for CTE program review.

## VI. RECOMMENDATION

- a. Overall recommendation and rationale.  
Summarize the committee’s recommendation (minor programmatic change, major programmatic change, or discontinuance) and the rationale for this recommendation.

The drafting program does not seem to be sustainable in its current form.

1. Based on the above data and analysis, the committee is recommending **discontinuance of the program** over the course of the next 1-2 years.
2. In the next 1-2 years:
  - Recommend discontinuance of DRAF 111 and 130.
  - Recommend partnering with Architecture and Engineering faculty to assess feasibility of integrating any of the following courses/content: DRAF 110, 113, 121.
  - If not feasible to integrate, recommend discontinuance of DRAF 113, possibly offering DRAF 110 and 121 taught by adjunct faculty.
  - Note: there is not enough enrollment to support offering multiple sections of DRAF 110, 113, or 121.

As a committee, we also were intentional with accounting for the impact of COVID on enrollment, as well as the recent renovation of Bldg. 19, which houses the physical components of the drafting program. As such, we are looking at data trends beyond the last 3 years. There did not appear to be a significant impact from COVID over the course of the COVID impacted semesters, as enrollment has continued to trend down.

- b. Recommended programmatic changes.  
If programmatic changes are recommended by the committee, describe the proposed

changes and discuss the rationale for each. (Note: If the committee recommends discontinuance, this section and sections c. and d. may be left blank. However, the committee may wish to provide recommendations for improvement to be used in the event that the committee’s recommendation for discontinuance is not accepted.)

**Recommendation:** Work with Architecture and Engineering faculty to see if any of the coursework can be integrated into their programs and/or marketed to the students in their programs, as appropriate for industry skill development, specifically DRAF 110, 113, and 121.  
**Rationale:** There may be relevant content and skill development for students in the architecture and engineering fields that may justify continuing to offer these courses with intentional program integration.

**Recommendation:** Discontinuance of DRAF 111 and 130.  
**Rationale:** There is insufficient enrollment at census, with some sections running with just 2 students, and a history of cancellations for both courses.

**Recommendation:** For faculty to actively engage in outreach, advertising, student recruiting, creating new industry partnerships.  
**Rationale:** there is insufficient enrollment, the faculty member has not shown evidence of engaging in these activities over the last 5 years.

c. Recommended Resources.

List the resources required to implement recommended programmatic changes, including faculty positions, classified positions, instructional equipment, instructional materials, and other requests.

Resources Requested	Rationale and Expected Outcome if Granted	Expected Impact if Not Granted
Student loaner laptops with capacity to support running the necessary software.  *Program needs to complete and submit both program review and resource requests in FA23*	Potential increase in census enrollment/retention rates.	Continued negative impact on students that do not have access to sufficient technology and are not able to continue in courses.

d. Provide a plan and schedule for the assessment of recommended programmatic changes. Assessment should be completed within one year.

1. Require Program Review and resource requests in Fall 2023.
2. Require curricular updates in Fall 2023.
3. Require meeting with architecture and engineering discipline faculty and appropriate deans to discuss feasibility of integrating any of the following courses/content: DRAF 110, 113, 121 by the end of Spring 2024.

**VII. IMPLICATIONS OF DISCONTINUANCE**

- a. If discontinuance is recommended by the committee, discuss the implications for students, faculty, staff, the College, the District and the community. (Note: If the committee recommends that the program is to be improved, this section may be left blank. However, the committee may wish to summarize the implications of discontinuing a program so that these may be taken into account as decisions are made.)

The primary implication of a discontinuance is the elimination of a full-time faculty position and discipline. The faculty member does not have an FSA in any other discipline that we offer.

Given that students who enroll in drafting courses are generally not seeking a degree or certificate, but are looking to build skills, there would be minimal impact to degree/certificate awards. While there is no other program in the district that offers drafting courses, there are approximately 25 programs in the broader Bay Area that offer similar courses, minimizing impact to students.

We do anticipate a possible impact on students who are in Engineering and Architecture programs in the district who will not have the ability to build skills around specific software that may be needed for their career pathways.

**Date of Viability report:** \_\_\_\_\_

\_\_\_\_\_  
*Dean's signature*

\_\_\_\_\_  
*Date*