SOLANO COLLEGE ACADEMIC PROGRAM REVIEW

DRAFTING

2017-2018

CONTENTS

PROGRAM OVERVIEW & MISSION

1.1 Introduction. *Introduce the program. Include the program's catalogue description, its mission, the degrees and certificates offered (including the courses required for the degrees). Include the names of full-time faculty, adjunct faculty, and classified staff. Give a brief history of the program and discuss any recent changes to the program or degrees (Limit to 2-3 pages).*

The Drafting program consists of two Associate degrees: Drafting and Design Technician and Survey CAD Technician. Students can also get a certificate in each. There is also a certificate in CAD Technician and a new Makers Space certificate pending Chancellor's Office approval. The Drafting and Design department is designed to train new students for entry level Drafting/Design jobs in many local industries including Civil, Mechanical, Architectural and Building, and other related fields. In addition, the graduates from the Survey and Civil Drafting Technician program will undergo more specific training in order to work for a Civil Engineering firm using Computer Aided Design (CAD) or in the field with surveying work.

The department also has a mission to help people who are already working in industry and who need to upskill and learn new software or upgrade current skills in order to advance in the workplace or satisfy industry standard requirements. It is common to have students take one or two classes such as AutoCAD, Solidworks or Blueprint reading to advance skills in the workplace.

In the fall of 2017 Karen Cook (the department's full-time instructor) began a sabbatical to create a proposal for Maker Space on campus and to write curriculum for more Drafting classes and coursework. The goal is to get more students interested in the design aspect of the program and to keep current to industry standards. New courses include REVIT, Fusion360 and Maker Space classes. This coursework was approved by the school's curriculum committee and began in Fall 2018. A full sabbatical report is being submitted here as an attachment.

Local industry advisors have discussed a growing need for "Soft skills" for all graduates, so new curriculum changes reflect those needs with the addition of a required Work Experience classes in the curriculum.

The need for our graduates is strong. We regularly receive calls from local firms needing to hire drafting and design students. We also have companies reach out looking for students interns. However there are not enough students to fill the need. We can take more students in order to fill local industry needs.

The program also educates students from other programs. For example, Welding students are required to take Blueprint Reading and Engineering students are encouraged to take AutoCAD and Solidmodeling with Solidworks. Vocational math and the Materials class crosses over to Advanced manufacturing and the new Maker Space courses support the programs listed above plus Graphic Arts and Photo.

The department has one full-time instructor and 3 part-time instructors; Karen Cook, Cynthia Jourgensen, Anthony Gutierrez and Brad Faulk. The department has two new part-time instructors beginning in Spring 2019—John Poe and Travis Van't Hull. Debra Berrett teaches Work Experience but on occasion will teach a Drafting class as well.

The following information is from the 2017 catalog:

DRAFTING AND DESIGN TECHNICIAN

A.S. DEGREE

Description

This program is designed to provide students with entry level skills in the fields of mechanical, electrical, civil and architectural drafting and/or design.

A Certificate of Achievement can be obtained upon completion of the 31.5-unit major listed below. The Associate in Science Degree can be obtained by completing a total of 60 units, including the major, general education requirements, and electives. All courses in the major must be completed with a grade of C or better or a P if the course is taken on a Pass/ No Pass basis.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.
2. Demonstrate proficiency at reading, drawing and dimensioning industry standard mechanical drawings.
3. Demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.
4. Demonstrate proficiency at reading, drawing and dimensioning industry standard electronic drawings.
5. Demonstrate proficiency at reading, drawing and dimensioning industry standard architectural drawings.

Degree Requirements:

Required Courses		Credit Hours: (30 Required)
DRFT045	Introduction to Computer-Aided Drafting (CAD)	4
DRFT055	Mechanical Drafting - Level I	3
DRFT058	Solid Modeling with Solidworks	3
DRFT060	Architectural Drafting I	3
DRFT075	Electronic Drafting	3
DRFT080	Civil Drafting I	3
DRFT161	Introduction to REVIT Architecture Software	3
IT140	Industrial Materials	3
IT151	Vocational Mathematics	3
IT171	Making Things 1 - 3D Technology	1
IT172	Making Things 2 - 2D Technology	1
One course from List A		

List A		Credit Hours: (1 - 1.5 Required)
Select one course		
OCED070	Occupational Soft Skills	1.5
OCED090	Occupational Work Experience	1
OCED091	General Work Experience	1

Total: 31.00 - 31.50

SURVEY AND CIVIL DRAFTING TECHNICIAN

A.S. DEGREE

Description

This program is designed to provide students with entry level skills in the fields of Surveying Technician, Civil Drafting Technician, and/or mapping technician.

An Associate of Science degree can be obtained by completing a total of 60 units, including the required courses in the major, the general education requirements, and electives. All courses for this major must be completed with a grade of C or better or a P if the course is taken on a Pass/ No Pass basis.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.
2. Demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.
3. Demonstrate basic understanding in using industry standard survey equipment including Transit, Theodolite, and Level.

Degree Requirements:

Required Courses		Credit Hours: (19 Required)
DRFT045	Introduction to Computer-Aided Drafting (CAD)	4
DRFT060	Architectural Drafting I	3
DRFT080	Civil Drafting I	3
DRFT140	Surveying	3
DRFT161	Introduction to REVIT Architecture Software	3
IT151	Vocational Mathematics	3
One course from List A		
One course from List B		
One course from List C		

List A		Credit Hours: (3 Required)
Select one course		
GEOG010	Introduction to Geographic Information Systems	3
GEOL010	Introduction to Geographic Information Systems	3

List B		Credit Hours: (1 - 1.5 Required)
Select one course		
OCED070	Occupational Soft Skills	1.5
OCED090	Occupational Work Experience	1
OCED091	General Work Experience	1

List C		Credit Hours: (3 Required)
Select one course		
GEOL001	Physical Geology	3
GEOL005	Geology of California	3
IT050	Alternative Energy Technologies	3

Total: 26.00 - 26.50

COMPUTER AIDED DRAFTING (CAD) TECHNICIAN

JOB-DIRECT CERTIFICATE

Description

This 13-unit certificate prepares students for employment in fields that require basic Computer Aided Drafting (CAD) work but not necessarily an advanced level of drafting/design knowledge. This certificate is also appropriate for people whose work does not primarily rely on drafting skills but who may be required to make simple modifications to drawings under the direction of drafters/designers/engineers. Students may choose courses to best fit their interests and workplace needs.

Career Opportunities

Career opportunities are wide-ranging because the main purpose of this certificate is to expand the training of individuals to increase their skill-set beyond the scope of their primary job. Examples include: 1. Building contractor office staff 2. Solar panel estimator 3. Administrative assistant to Engineer 4. Purchasing specialists in engineering/architectural firms. 5. Electronic Technicians 6. Fire sprinkler sales and instillation.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Demonstrate proficiency and a basic understanding of engineering drawings and drawing techniques
2. Demonstrate proficiency and have the ability to make minor to moderate changes (such as ECO's or Engineering Change Orders).
3. Demonstrate proficiency to draw simple objects in AutoCAD.

Degree Requirements:

Required Courses (13 Units)		Credit Hours: (13 Required)
DRFT045	Introduction to Computer-Aided Drafting (CAD)	4
DRFT079	Blueprint Reading	3
DRFT058 or	Solid Modeling with Solidworks	3
DRFT161	Introduction to REVIT Architecture Software	3
DRFT060 or	Architectural Drafting I	3
DRFT075 or	Electronic Drafting	3
DRFT080 or	Civil Drafting I	3
DRFT055	Mechanical Drafting - Level I	3
		Total: 13

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1.2 Relationship to College Mission. Describe two or three components of your program that embody the college's mission: "Solano Community College's mission is to educate a culturally and academically diverse student population drawn from our local communities and beyond. We are committed to helping our students achieve their educational, professional, and personal goals. Solano transforms students' lives with undergraduate education, transfer courses, career-and-technical education, certificate programs, workforce

development and training, basic-skills education, and lifelong-learning opportunities." (Limit to 1-2 paragraphs)

Our main goal is to prepare students for stable, middle skills careers that will support a family and allow them to contribute to the community. Since students do not need a 4-year degree for these particular jobs it is attractive to students who may not have the financial resources for, or interest in, a traditional university education. Solano County is a diverse community so by definition this educational model encourages a highly diverse group. In addition, we see many students who are currently working in the field and need to upgrade skills. Very often this population comes from immigrant communities whose population was trained in other countries using slightly different technology and software.
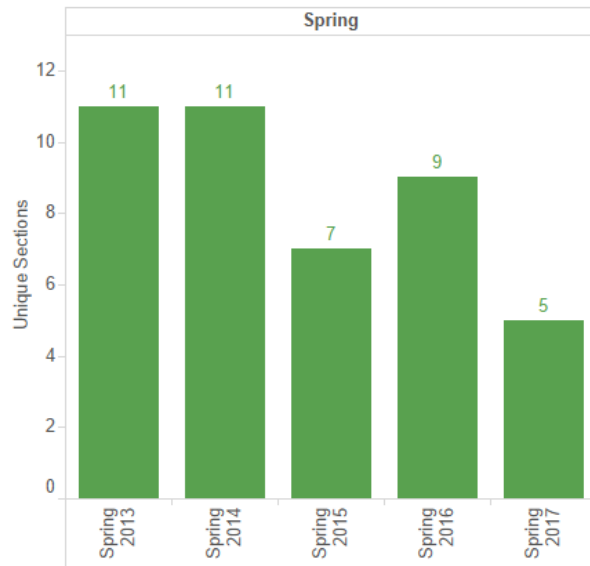
1.3 Enrollment. Utilizing data from Institutional Research and Planning (ITRP), analyze enrollment data. In table format, include the number of sections offered, headcounts, and the full-time equivalent enrollment (FTES) for each semester since the last program review cycle. If data is available for the number of declared majors in the discipline, please include as well. Compare the enrollment pattern to that of the college as a whole and explain some of the possible causal reasons for any identified trends. For baccalaureate programs, include any upper division general education courses as part of the analysis. Also, address the efficacy of recruitment and student placement in the program including any collaborations with other colleges.

Overall the enrollment and section offerings has dipped since the peak of the economic down turn after the Great Recession. This is likely due to the high number of job availabilities in fields that relate to Drafting/Design and Surveying. We often get calls from employers wishing to hire our students. Many students are hired before they graduate. This means we need fewer sections to meet the needs of the current student population.

In addition, the District has acknowledged a need to market college programs better and they have funded a marketing campaign. We are hopeful that this will bring in more students in the future. Some outreach has taken place through the Doing What Matters for Jobs in Solano County initiative through a partnership with the Solano College Faculty Union. This initiative is discussed in more detail in section 4.3.
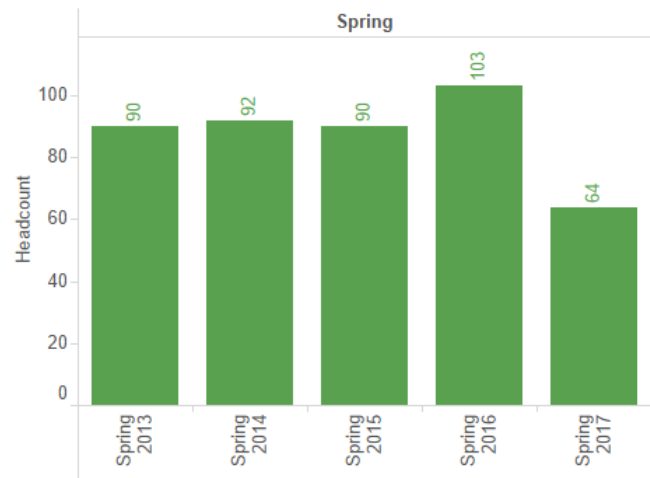
Sections Offered (Drafting Technology)

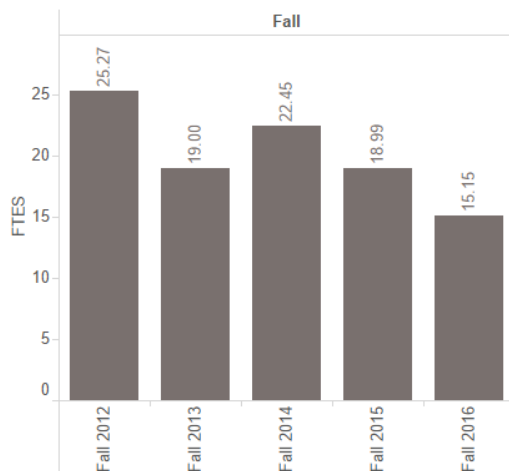*Chart shows number of sections offered by semester.*

Spring

Semester	Unique Sections
Spring 2013	11
Spring 2014	11
Spring 2015	7
Spring 2016	9
Spring 2017	5

Headcount - Drafting Technology

Chart shows student headcount by Semester within Drafting Technology

Spring

Semester	Headcount
Spring 2013	90
Spring 2014	92
Spring 2015	90
Spring 2016	103
Spring 2017	64

FTES (Drafting Technology)

Chart shopws total FTES by Semester within Drafting Technology

Fall

Semester	FTES
Fall 2012	25.27
Fall 2013	19.00
Fall 2014	22.45
Fall 2015	18.99
Fall 2016	15.15

FTES Pattern Drafting Technology

Chart shows total percent change by Semester within Drafting Technology (line) and total for college (bar)

Fall

| Semester	% Difference in FTES (line)	College (bar)
Fall 2013	-24.80%	-3.84%
Fall 2014	18.14%	5.50%
Fall 2015	-15.42%	0.58%
Fall 2016	-20.21%	-4.75%
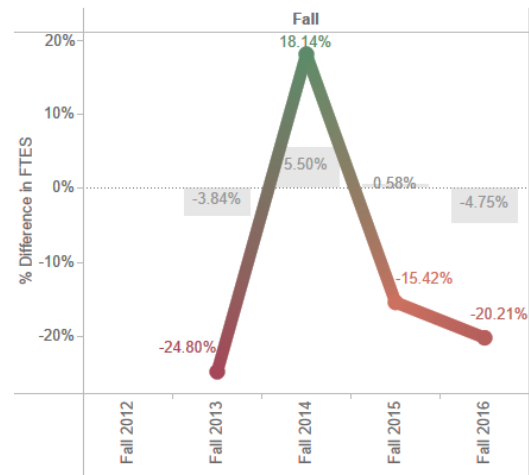
1.4 *Population Served.* Utilizing data obtained from Institutional Research and Planning, analyze the population served by the program (gender, age, and ethnicity) and discuss any trends in demographic enrollment since the last program review. Explain possible causal reasons for these trends, and discuss any actions taken by the program to recruit underrepresented groups.

The population trends have been holding stable through the current program review time period. Because Drafting related fields are traditionally male dominated, we attract many more male students than female; however, we do try to attract female when possible. For example, we have been having high school workshops in the Makers Space which hosts an equal mix of male and female students. We also hope that outreach to high schools will attract more African American and Asian/Pacific Island students. In coming years, we hope to see a better balance. In addition, we get a lot of adults who are retraining and that is reflected in our age demographics.
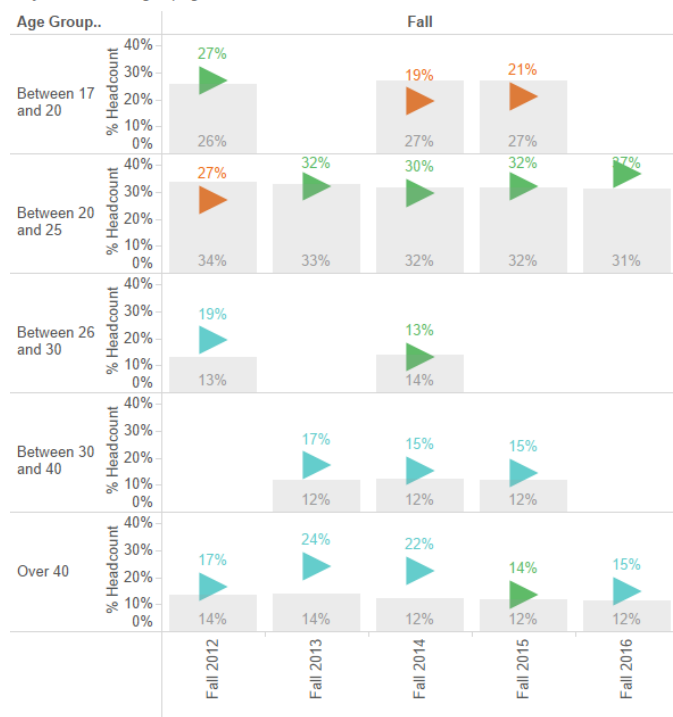
Pop Served Gender (Drafting Technology)

Chart shows % headcount by gender (triangle represents within discipline, grey bar within institution). Disproportionate impact (80% of institution percentage) is noted in triange color.
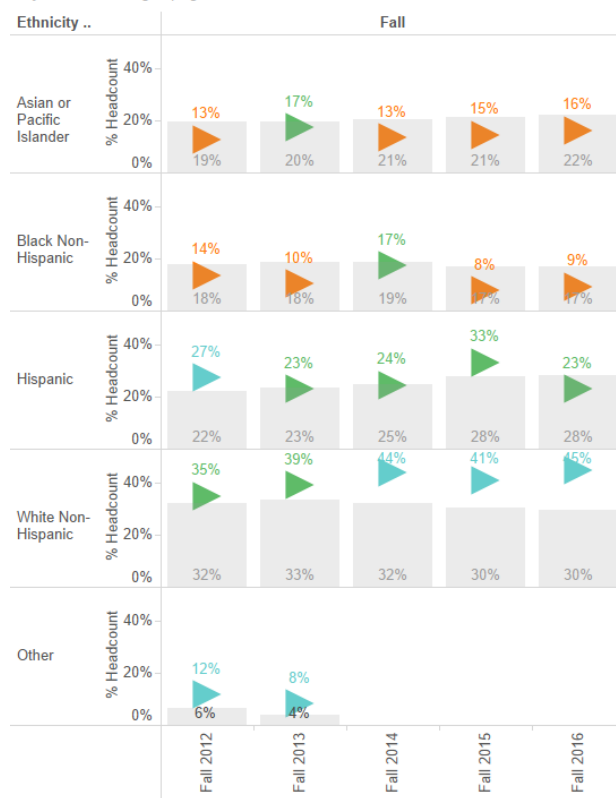Only shows student groups greater than 12 students
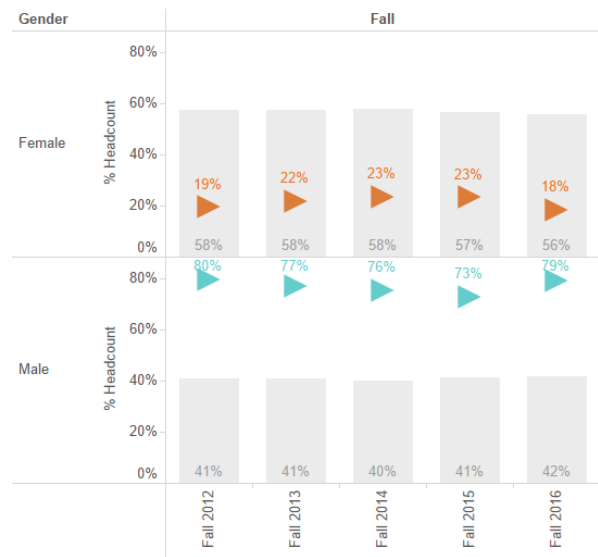
Pop Served Age (Drafting Technology)

Chart shows % headcount by age group (triangle represents within discipline, grey bar within institution). Disproportionate impact (80% of institution percentage) is noted in triange color. Only shows student groups greater than 12 students

Age Group..	Fall				

Between 17 and 20: 27%, 19%, 21% (bars: 26%, 27%, 27%)

Between 20 and 25: 27%, 32%, 30%, 32%, 37% (bars: 34%, 33%, 32%, 32%, 31%)

Between 26 and 30: 19%, 13% (bars: 13%, 14%)

Between 30 and 40: 17%, 15%, 15% (bars: 12%, 12%, 12%)

Over 40: 17%, 24%, 22%, 14%, 15% (bars: 14%, 14%, 12%, 12%, 12%)

Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016

Pop Served Ethnicity (Drafting Technology)

Chart shows % headcount by ethnicity (triangle represents within discipline, grey bar within institution). Disproportionate impact (80% of institution percentage) is noted in triange color. Only shows student groups greater than 6 students

Ethnicity ..	Fall				

Asian or Pacific Islander: 13%, 17%, 13%, 15%, 16% (bars: 19%, 20%, 21%, 21%, 22%)

Black Non-Hispanic: 14%, 10%, 17%, 8%, 9% (bars: 18%, 18%, 19%, 17%, 17%)

Hispanic: 27%, 23%, 24%, 33%, 23% (bars: 22%, 23%, 25%, 28%, 28%)

White Non-Hispanic: 35%, 39%, 44%, 41%, 45% (bars: 32%, 33%, 32%, 30%, 30%)

Other: 12%, 8% (bars: 6%, 4%)

Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016

1.5 Status of Progress toward Previous Goals and Recommendations. Report on the status of goals or recommendations identified in the previous program review or in the most recent update. For status, note if completed, suspended, in progress, or now part of routine department activities. In-progress goals should be added to Table 4.

Table 1. Status of Previous Goals (from 2014 Program Review Report)

Program Goals	Planned Action (s)	Status
Program is up-to-date; no goals at this time		
Assessment Goals		Status
Assessment is up-to-date and ongoing; no goals at this time		
Curriculum Goals		Status
Review/change course scheduling	Schedule more drafting classes on satellite facilities (Vacaville, Vallejo); Work with dean and classified staff (based on staffing availability)	Completed. We have offered several courses at Buckingham High School in Vacaville. We have not offered courses in Vallejo.

Other	Implement an Advanced Level SolidWorks Certification exam (in addition to the Associate Exam); Work with adjunct faculty to facilitate process	Completed. This has been implemented and is a popular industry standard certificate.
Campus & Community Integration/Outreach Goals	Planned Action (s)	Status
Create bridge/pathway	Promote new articulation agreements with area high schools. Work with articulation specialists, and high school instructors.	Completed. We have been doing extensive work promoting programs to high schools. DRFT45 is an articulated course.
Expand advertising	Improve promotion of Survey Technician Program; Implementation dependent on addition of another full-time faculty member.	Ongoing. The District has hired a marketing firm. Results TBD
Expand advertising	Advertise program; Dependent on administrative funding and logistical help and expertise	Ongoing
Other	Work with Interior Design staff and faculty a smooth integration of Drafting classes in Interior Design Program	Suspended. The interior design program has discontinued. Community Advisors want our program to align more with Advanced Manufacturing programs.
Other	Work with Fire Technology to incorporate Drafting Technology topics; Implementation dependent on addition of another full-time faculty member	We have not hired another full-time faculty member and don't anticipate doing so.
Student Equity & Success Goals	Planned Action (s)	Status
Add tutoring/skills support options for students	Work with MESA to include more drafting/ design integration (as per advisory committee recommendation; Implementation may be dependent on addition of another full-time faculty member because of time constraints.	Completed. Facuty have met with Engineering faculty. They are sending more students to enroll in our courses. In addition engineering curriculum now includes Drafting Courses as electives.

Professional Development Goals	Planned Action (s)	Status
No professional development goals at this time		
Human Resources Goals	**Planned Action (s)**	**Status**
Add/replace full time position	Lobby for one more full-time drafting instructor; meet with administration and responsible committee to facilitate process	Ongoing. This goal will be completed this semester with the addition of 2 new part-time faculty hires
Technology & Equipment Goals	**Planned Action (s)**	**Status**
Add/upgrade classroom/lab technology, equipment, instructional materials	Continue subscription software licensing; Work with dean and classified staff	Complete. Software licenses are up to date.
Add/upgrade classroom/lab technology, equipment, instructional materials	Purchase of new drafting table/computer work stations as equipment suffers wear and tear. Work with dean and classified staff.	Completed.
Facilities Goals	**Planned Action (s)**	**Status**
Add/upgrade instructional space	Lobby for new drafting classroom / lab facilities; Add new drafting classroom facilities to Measure Q master plan documentation	Ongoing. We are using new Maker Space facility and equipment for some drafting classes. So this goal is complete.
Library Resource Goals	**Planned Action (s)**	**Status**
Library resources are up-to-date; no goals at this time		
Other Resource Goals	**Planned Action (s)**	**Status**

1.5 Previous Program Review Goals Leading to Improvement. Describe any improvements that were made to the program based on the previous program review goals. Include any available data/evidence about how those improvements had a positive impact on student access and/or student success.

In addition to the completed goals above, the Doing What Matters for Jobs in Solano County initiative has had strong buy in from community stakeholders and this will impact the Drafting and Design department. Many community leaders were not aware of CTE programs on campus, but through this program and District marketing and outreach, stakeholders and members of the community are slowly becoming more engaged as to what is happening with CTE in general and in the Drafting and Design program in particular.

1.6 Future Outlook. Describe both internal and external conditions expected to affect the future of the program in the coming years. Include labor market data as relevant for CTE programs. (The California Labor Market website allows employment projections by occupation at the state and county level).

The outlook for students who have degrees in Drafting and Design and/or Surveying are strong. Labor market data state wide shows a continuing need for trained employees with strong wage growth. This is true of several disciplines including Architectural, Civil, Mechanical and Electrical engineering fields.

Karen Cook's sabbatical leave was to develop plans and curriculum for a Maker Space with the hope that it will increase student interest in Drafting, but also related fields such as Mechatronics and Graphic Design. This goal is supported by industry advisors and community stakeholders who have identified these programs as key to a strong workforce in Solano County.

As the department continues to move towards updates that align with industry needs, we anticipate further department success.

Following is the OES Employment and Wages Data Table for the first quarter of 2016:

| | | | | 2016 - 1st Quarter Wages | | | | | |
Geographic Area Name	SOC Code	Occupational Title	May 2015 Employment Estimates	Mean Hourly Wage	Mean Annual Wage	Mean Relative Standard Error (1)	25th Percentile Hourly Wage	50th Percentile (Median) Hourly Wage	75th Percentile Hourly Wage
California Statewide	17-3011	Architectural and Civil Drafters	13,650	$28.31	$58,891	1.30	$21.84	$27.61	$34.06
California Statewide	17-3012	Electrical and Electronics Drafters	5,790	$29.93	$62,249	1.60	$23.34	$28.88	$35.94
California Statewide	17-3013	Mechanical Drafters	3,890	$28.97	$60,271	1.30	$21.27	$27.54	$35.79
California Statewide	17-3019	Drafters, All Other	1,310	$28.19	$58,638	2.40	$21.13	$26.56	$34.52

Source: State of CA Employment Development Department, http://www.labormarketinfo.edd.ca.gov/data/oes-employment-and-wages.html#Tool

To be qualified for the jobs above, the amount of education can vary.

Following is the Projection of Employment by Occupation, 2014-2024, California Employment Development Department:

TOP Code(s):

- 095300   Drafting Technology

Geography: California
Includes: All California Counties

Annual Job Openings by Occupation

SOC Code	Occupation Title (Linked to "Occupation Profile")	2014 Employment	Annual Job Openings (1)
173011	Architectural and Civil Drafters	13,900	180
173019	Drafters, All Other	1,300	20
173012	Electrical and Electronics Drafters	5,900	150
173013	Mechanical Drafters	3,900	50
	Total	25,000	400

(1) Total Job Openings are the sum of new jobs from growth plus net replacements. Annual job openings are total job openings divided by the number of years in the projection period.

Source: http://www.labormarketinfo.edd.ca.gov/commcolleges/Projections.asp

Career Technical Education Planning
(Non-CTE program proceed to Section 2, Assessment.)

1.8 Advisory Boards/Licensing (if applicable). Describe how program planning has been influenced by advisory board/licensing feedback. Note how often are advisory board meetings held; provide membership information and note what specific actions have been taken. Attach minutes from the past two years in an appendix.

Our advisory group is made up of people who work in industry and can speak to the major fields that we cover in the program that include Architectural, Civil, Mechanical and Electronic Drafting, and 3D modeling disciplines. In addition, we have several advisors who are Solano College graduates (that are now working in Drafting and Design fields) who offer an especially helpful insight as to how our program and course offerings match up with industry needs. Our advisors were instrumental in giving advice to recent changes of removing DRFT046 and adding DRFT161 to our degree. They are also highly supportive or the Maker Space and the potential to interest more students in Drafting related fields.

We hold advisory meetings in the spring semester and meetings include industry advisors plus local high school teachers who articulate course work and/or teach related subjects. This helps us all keep up to date on industry needs.

We also have gotten feedback from industry stakeholders during our Doing What Matters for Jobs in Solano County initiative. This group has been especially excited and supportive of our new Maker Space and the programs that the Maker Space supports, including Drafting and Design, Advanced Manufacturing and other CTE programs. This group was also specifically supportive of adding work experience coursework to as many SCC programs as possible. Solano County employers named "Soft Skills" as one of the main area of improvement for new

Approved by Academic Senate on 12/05/16   14

students/employees entering the workforce. This is why the Drafting and Design Degree now includes required courses in Work Experience.

1.9 Core Indicator Report. Review the Perkins core indicator reports for your TOP code: https://misweb.cccco.edu/perkins/Core_Indicator_Reports/Summ_coreIndi_TOPCode.aspx . What are the areas of needed improvement? What efforts have you already made and/or plan to make to support students in these areas? (Limit to 1-2 paragraphs)

Numbers are currently lower. We believe this is due to a strong labor market. Students are getting jobs before they have a chance to complete programs. This is consistent with past strong economic cycles.

		Core 1 Skill Attainment	Core 2 Completion	Core 3 Persistence	Core 4 Employment	Core 5a NT Participation	Core 5b NT Completion
095300	DRAFTING TECHNOLOGY	94.44	100.00	91.67	100.00	16.67	18.18

Performance Rate Less Than Goal is Shaded
Total Count is 10 or Greater
Total Count is Less Than 10

 Source:
https://misweb.cccco.edu/perkins/Core_Indicator_Reports/Summ_coreIndi_TOPCode.aspx#P2e87d5c171724616bb8faf8c31a433bf_22_116iT0R6R0x4

ASSESSMENT

Program Learning Outcomes

2.1 PLOs and ILOs. Using the table provided, list the Program Learning Outcomes (PLOs) and which of the institutional learning outcomes (ILOs) they address. In the same table, specifically state (in measurable terms) how your department assesses each PLO. State the course(s) and assignment(s) where the PLOs are measured. Additionally, please review the PLOs in the college catalogue to ensure they are accurate. If they are not, be sure to add as a goal (Table 4) plans to change PLOs in CurriCUNET and contact the curriculum office to ensure they are updated in the catalogue.

Table 2a-1 Program Learning Outcomes: Drafting Technician

Program Learning Outcomes	ILO	How PLO is assessed
1. Students who complete the Certificate of achievement/Associate Degree will be able to demonstrate proficiency using industry standard computer aided	4cWork place skills	Since DRFT46 is the advanced AutoCAD class, and the second in the serious of AutoCAD classes, the PLO will be considered successful if 70% complete

drafting/design CAD (AutoCAD) software program.		the class and receive a final grade of 70% or better
2. Students who complete the Certificate of Achievement/Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard mechanical drawings.	4cWork place skills	Since DRFT55 is the upper level class that focuses on mechanical drafting, the PLO will be considered successful if 70% complete the class receive a final grade of 70% or better.
3. Students who complete the Certificate of Achievement/Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.	4cWork place skills	Since DRFT80 is the upper level class that focuses on civil drafting, the PLO will be considered successful if 70% complete the class with a passing grade of 70% or better.
4. Students who complete the Certificate of achievement/Associate Degree Will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard electronic drawings.	4cWork place skills	Since DRFT75 is the upper level class that focuses on electronic drafting, the PLO will be considered successful if 70% complete the class receive a final grade of 70% or better.
5. Students who complete the Certificate of achievement/Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard architectural drawings.	4cWork place skills	Success criteria: Since DRFT60 is the upper level class that focuses on architectural drafting, the PLO will be considered successful if 70% complete the class receive a final grade of 70% or better.

Table 2a-2 Program Learning Outcomes: Survey Technician

Program Learning Outcomes	ILO	How PLO is assessed
1. Students who complete the Certificate of Achievement/ Associate Degree will be able to demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.	4cWork place skills	Since DRFT46 is the advanced AutoCAD class, and the second in the serious of AutoCAD classes, the PLO will be considered successful if 70% complete the class and receive a final grade of 70% or better
2. Students who complete the Certificate of Achievement/ Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.	4cWork place skills	Since DRFT80 is the upper level class that focuses on civil drafting, the PLO will be considered successful if 70% complete the class with a passing grade of 70% or better.

3. Students who complete the Certificate of achievement/ Associate Degree will be able to demonstrate basic understanding in using industry standard survey equipment including Transit, Theodolite, and Level.	4cWork place skills	Since DRFT140 is the upper level class that focuses on surveying, the PLO will be considered successful if 70% complete the class receive a final grade of 70% or better.

2.2 PLO Mapping. Report on how courses support the Program Learning Outcomes at which level (introduced (I), developing (D), or mastered (M)).

Faculty have meet with the Assessment Coordinator to map Program courses to PLOs. Please bear in mind that the mastery indicated with respect to PLO 3 is the mastery for an entry-level programmer/analyst, web designer, or software engineer. Students acquire the skills but most of them do not have the requisite experience that would demonstrate their mastery.

Table 2b-1. Program Courses and Program Learning Outcomes: Drafting Technician

List the Course and SLO that maps to the PLO	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5
DRFT 045, SLO --	D	D			
DRFT 055, SLO --	M	M			
DRFT 060, SLO --	M	M			
DRFT 075, SLO --	M	M			
DRFT 080, SLO --	M	M			
IT 140, SLO --	D	D			
IT 151, SLO --	I	I			
DRFT 125, SLO --	D	D			

Table 2b-2. Program Courses and Program Learning Outcomes: Survey Technician/Civil Drafting Technician

Course	PLO 1	PLO 2	PLO 3
DRFT 045, SLO --	D	D	
DRFT 060, SLO --	M	M	
GEOL 010, SLO --	D	D	
GEOG 010, SLO --	D	D	
DRFT 080, SLO --	M	M	
DRFT 085, SLO --	M	M	
DRFT 140, SLO --	M	M	
IT 151, SLO --	I	I	

2.3 PLO Results and Planned Actions. Utilizing Table 2c, summarize the results of program learning assessments and any planned actions to increase student success where deficits were noted. Results should be both quantitative and qualitative in nature, describing student strengths and areas of needed improvement. Action plans should be specific and link to Table 4 (goals) as

well as any needed resources (Section 7.2) to achieve desired results. (If PLO Assessments are extensive, then make a note here and use Table 2c as an Appendix.) Then, in Table 2d, complete the assessment calendar.

Table 2c-1. Program Learning Outcomes Assessments: Drafting Technician

PLO 1	
Program Learning Outcome	Students who complete the Certificate of achievement/Associate Degree will be able to demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.
Date(s) Assessed	Fall 2012
Results	Of the 13 students who took the class, 8 passed with a 70% or better. However, 2 of these students stopped attending class after the last date to drop. So, although statistically, this PLO was not a success, based on the number of students who completed, it was.
Action Plan	DRFT46 was taught in a hybrid format. It was decided to offer the class in a face-to-face format and note any changes in outcome. As a result, further analysis will take place after Fall 2013.
PLO 2	
Program Learning Outcome	Students who complete the Certificate of Achievement/Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard mechanical drawings.
Date(s) Assessed	Spring 2013
Results	Of the 21 students who completed the class, 18 students finished the class with a 70% or better.
Action Plan	The PLO was considered a success. No further action will be taken at this time.
PLO 3	
Program Learning Outcome	Students who complete the Certificate of Achievement/Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.
Date(s) Assessed	Fall 2012
Results	Of the 10 students who completed the class, 10 passed with a 70% or better.
Action Plan	The PLO was considered a success. No further action will be taken at this time.
PLO 4	
Program Learning Outcome	Students who complete the Certificate of achievement/Associate Degree Will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard electronic drawings.
Date(s) Assessed	Fall 2011
Results	Of the 12 students who completed the class, 11 passed with a 70% or better. This PLO is considered a success.
Action Plan	The PLO was considered a success. No further action will be taken at this time.
PLO 5	

Program Learning Outcome	Students who complete the Certificate of achievement/Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard architectural drawings.
Date(s) Assessed	Spring 2014
Results	TBD
Action Plan	TBD

Table 2c-2. Program Learning Outcomes Assessments: Survey Technician/Civil Drafting Technician

PLO 1	
Program Learning Outcome	Students who complete the Certificate of Achievement/ Associate Degree will be able to demonstrate proficiency using industry standard computer aided drafting/design CAD (AutoCAD) software program.
Date(s) Assessed	Fall 2012
Results	Of the 13 students who took the class, 8 passed with a 70% or better. However, 2 of these students stopped attending class after the last date to drop. So, although statistically, this PLO was not a success, based on the number of students who completed, it was.
Action Plan	This class was taught in a hybrid format. It was decided to offer the class in a face-to-face format and note any changes in outcome. As a result, further analysis will take place after Fall 2013.
PLO 2	
Program Learning Outcome	Students who complete the Certificate of Achievement/ Associate Degree will be able to demonstrate proficiency at reading, drawing and dimensioning industry standard civil drawings.
Date(s) Assessed	Fall 2012
Results	Of the 10 students who completed the class, 10 passed with a 70% or better.
Action Plan	The PLO was considered a success. No further action will be taken at this time.
PLO 3	
Program Learning Outcome	Students who complete the Certificate of achievement/ Associate Degree will be able to demonstrate basic understanding in using industry standard survey equipment including Transit, Theodolite, and Level.
Date(s) Assessed	Spring 2014
Results	TBD
Action Plan	TBD

Table 2d-1. PLO Assessment Calendar: Drafting Technician

	F17	S18	F18	S19	F19	S20	F20	S21	F21	S22
PLO1							x			
PLO2								x		
PLO3							x			
PLO4							x			

PLO5							x		

Table 2d-2. PLO Assessment Calendar: Survey Technician/Civil Drafting Technician

	F17	S18	F18	S19	F19	S20	F20	S21	F21	S22
PLO1							x			
PLO2							x			
PLO3								x		

2.4 PLOs Leading to Improvements. Describe any changes made to the program or courses that were a direct result of program learning outcomes assessments.

None at this time. Changes have been made as a result of advisory committee input (see below).

Student Learning Outcomes

2.5 SLOs Status. Describe the current status of SLOs in your program. If deficiencies are noted, describe planned actions for change and include these in your goals (Table 4).

No significant deficiencies have been noted in our assessments, and this is borne out by the fact that our local employers (who hire our graduates) are very pleased with graduate skills. We will continue to look at assessments in the future, especially as we enact curriculum changes.

2.6 SLOs Leading to Improvements. Describe any changes made to the program or courses that were a direct result of student learning outcomes assessments.

Part of our success is due to having the latest technology and software. By and large we are strong in this area. However we currently have a problem with the computers in the 1881 CAD lab. They are at the limit of their capacity to handle software such as REVIT, Fusion360 and Solidworks. We need new computers to handle these needs.

General Education & Institutional Learning Outcomes

2.7 GELOs and ILOs. Review any general education courses offered by your program to ensure they are accurately linked with the appropriate general education learning outcome (GELO) in the CurriCUNET assessment module, and that the GELO is measurable in the SLO(s) of the course. Then review all courses and their SLOs in CurriCUNET to ensure they are accurately linked with the appropriate institutional learning outcomes (ILOs), and that they are measurable. In most cases there will only be one GELO and/or one ILO link per SLO. Report on changes that need to be made in order to effectively integrate GELOs and ILOs into instruction.

ILOs will be updated as course SLOs are updated in CurricUNET Meta. There are no GE courses in the Drafting programs.

CURRICULUM

3.1 Course offerings. Attach a copy of the course descriptions from the most current catalogue. Describe any changes to the course offerings since the last program review cycle (course content, methods of instruction, etc.) and provide rationale for deletion or addition of new course offerings. If there are courses in the catalogue that haven't been offered in the past two years, state the course(s) and note the reason(s) they haven't been offered (no faculty to teach, low enrollment, etc.). State the plans for either offering or inactivating/deleting these courses. Also state whether any new degrees of certificates have been created and the rationale for doing so. For baccalaureate programs, include any upper division general education courses as part of the report.

For catalog course descriptions, 2016-17, see Appendix A.

We had some updates in past year with changes to courses and programs (see Section 1.1 for program overview). This was in part because of Karen Cook's sabbatical work to create a new Maker Space in fall 2017. More emphasis is placed on 3D software with the addition of REVIT and Fusion360, where we now have courses in both programs. DRFT46 was removed from the program because of its emphasis on 3D AutoCAD, which is not industry standard. For students on older catalogs, we will be substituting REVIT (DRFT161) for DRFT46.

Classed deleted are DRFT057, DRFT065, and DRFT085. These are advanced level courses in Mechanical Drafting, Architectural Drafting and Civil Drafting and our advisory committee and employers have told us these courses are not necessary for students to be successful. The main addition to the program is the Maker Space Technology Certificate that introduces students to high tech tools and basic CAD drafting and design including 3D modeling.

Soft Skills classes are now also required for Drafting Degrees and Certificates. This update was made due to industry needs and advisory recommendation through advisory committees and Doing What Matters for Jobs in Solano County initiative.

3.2 Scheduling and Sequencing. Discuss efforts to optimize access through scheduling. How have faculty (in collaboration with deans) planned the timing, location, and modality of courses? Report on whether courses have been sequenced for student's timely progression through the major, how students are informed of this progression, and the efficacy of this sequencing. Report on whether curriculum is being offered in a reasonable time frame and if there are plans/goals for scheduling changes. (Limit to 1-2 paragraphs)

Faculty have a close working relationship with the division dean in an effort to optimize student completion rates. Introduction to Computer Aided Drafting is offered in both the day and evening, and online. DRFT058 (Solid modeling with Solidworks) is now offered online, in the evening in a standard semester and (when necessary) in the summer.

Most courses are offered at least once a year. The only courses that are only offered once every two years are DRFT55, DRFT65, DRFT75 and DRFT80. These courses roll in a well-known pattern that students are aware of and can plan for accordingly.   For the Survey Technician program, the surveying course DRFT140 (which is a capstone class) is offered once every 2 years on average.

Scheduling (Fall & Spring)

Chart shows number of sections offered by course id, campus and semester.

Course ID	Campus Sched Type	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
DRFT 045	Main Campus - Fairfi..	1	2	2	2	1	1	1	1	1	1
	Online/Hybrid	1				1	1	1	2	1	1
	Vacaville Center							1		1	
DRFT 092	Main Campus - Fairfi..	3	3	3	3					1	1
DRFT 079	Main Campus - Fairfi..	1	1	1	1	1	1	1	1	2	1
DRFT 050	Main Campus - Fairfi..	2	2	1	1	1	1				
DRFT 046	Main Campus - Fairfi..			1		1		1		1	
	Online/Hybrid	1									
DRFT 058	Main Campus - Fairfi..								1		1
	Vacaville Center								1		
DRFT 055	Main Campus - Fairfi..		1				1				1
DRFT 080	Main Campus - Fairfi..	1				1				1	
DRFT 085	Main Campus - Fairfi..	1				1				1	
DRFT 125	Main Campus - Fairfi..		1		1		1				
DRFT 057	Main Campus - Fairfi..		1				1				
DRFT 060	Main Campus - Fairfi..				1				1		
DRFT 075	Main Campus - Fairfi..			1				1			
DRFT 140	Main Campus - Fairfi..				1					1	
DRFT 065	Main Campus - Fairfi..				1						

Student Sequencing (Drafting Technology - Fall 2016 & Spring 2017)

Chart shows % of students by course and attempt number in sequence, blue triangle shows average attempt number.
Shows student major - All
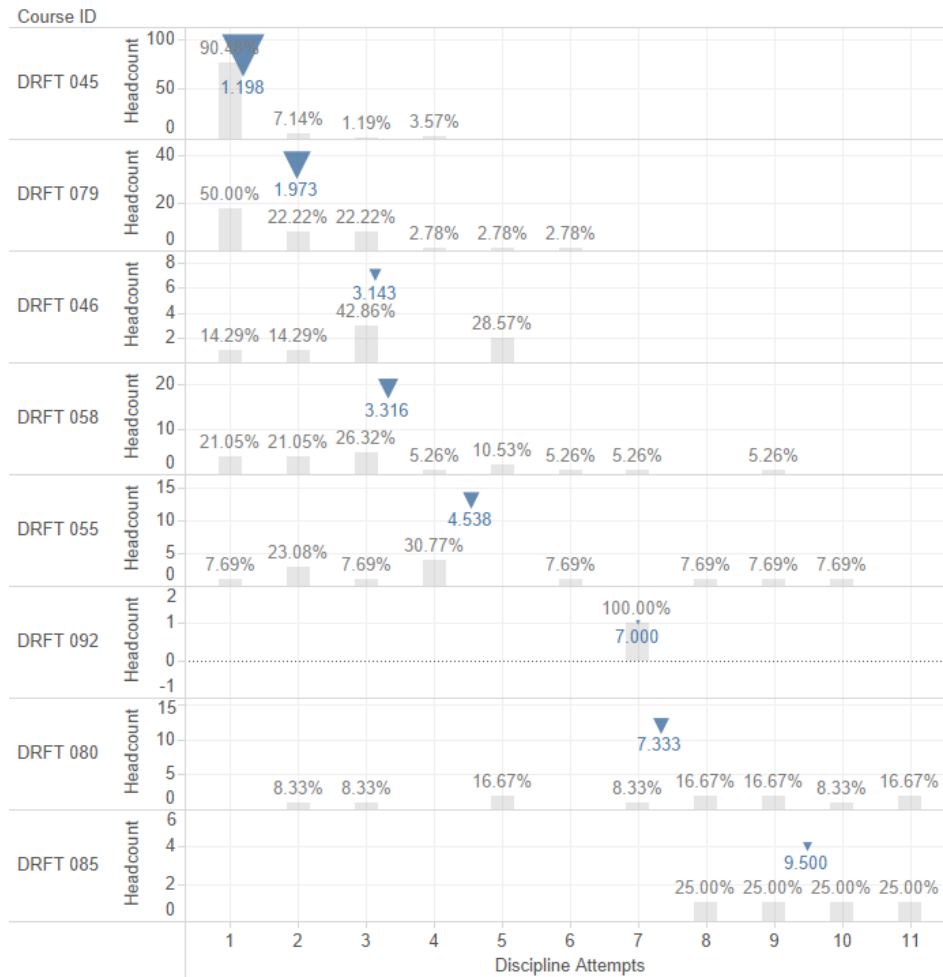
3.3 _Student Survey._ Describe the student survey feedback related to course offerings. In terms of the timing, course offerings, and instructional format, how does what your program currently offer compare to student responses? Please include the student survey and any relevant charts as an appendix.

Students have been surveyed on course offerings and program format. Generally they are satisfied. They would like some courses (such as DRFT55, DRFT60, DRFT75 and DRFT80) to be offered more often, however at this time that is not possible because we don't have enough enrollment to support it.

3.4 _Fill rates/Class size._ Based on data from ITRP, discuss the trends in course fill rates and possible causes for these trends (include comparison/analysis of courses by modality if applicable). Address how the size of classes affects courses and if there are any necessary adjustments to course classroom maximums. If there are courses that are historically under-enrolled, discuss strategies that might increase enrollment. (Limit to 1-2 paragraphs)

As noted above, the enrollment often depends on the economy; when the economy is failing and people are unemployed, students tend to enroll more in our courses. Drafting 045 tends to have stronger enrollment because some students returning for more training may take only that course to build skill and/or advance in their place of work.

Fill Rates Median by Location (Drafting Technology)

Chart shows median fill rates by course location

Campus Sched Type
● Main Campus - Fairfield
■ Online/Hybrid
✚ Vacaville Center
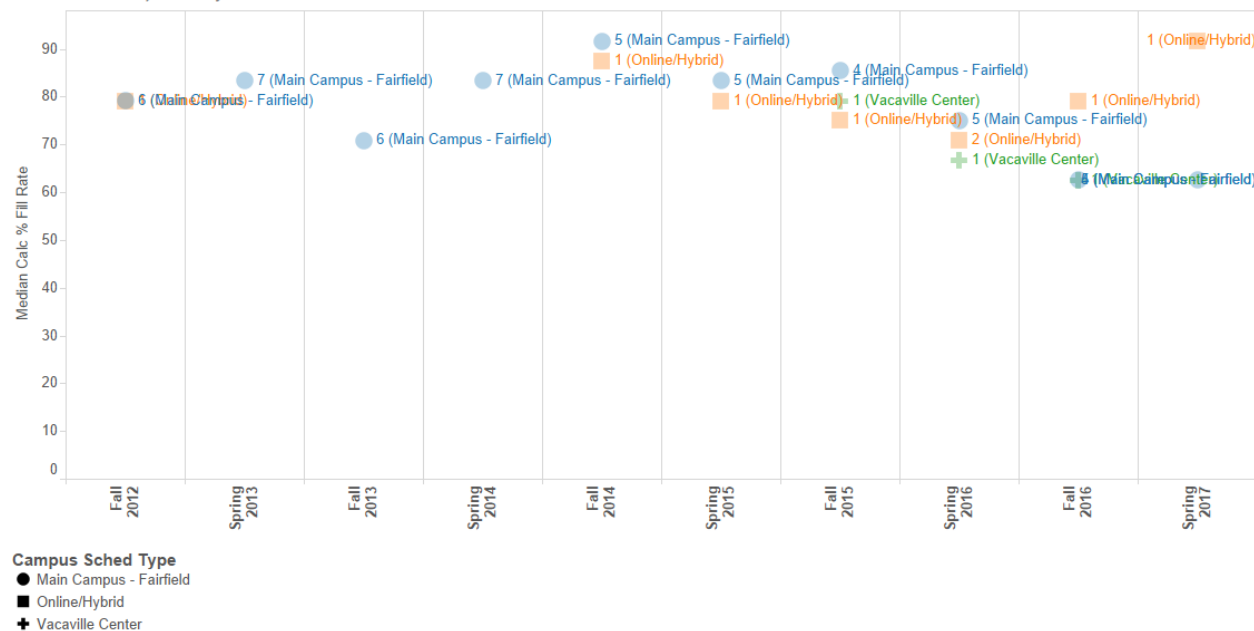
3.5 Four-year articulation (if applicable). n/a

3.6 High school articulation (if applicable). Describe the status of any courses with articulation/Tech Prep agreements at local high schools.

We articulate DRFT045 with the high schools. But we are also offering some courses on local high school campuses in order to encourage high school participation. We have consistently attended high school CTE events and have high participation rates from high school instructors at program advisory meetings.

3.7 Distance Education (if applicable). Describe the distance education courses offered in your program, and any successes or challenges with these courses. Discuss any efforts to become involved with the Online Education Initiative (OEI). (Limit to 1-2 paragraphs)

Currently we offer 3 courses online: DRFT045, DRFT058, and DRFT145. DRFT045 has been offered online for over 10 years and success rates are good. We have not participated in the Online Education Initiative (OEI).

CAMPUS & COMMUNITY INTEGRATION

4.1 Campus Integration. Describe how the program connects with the campus community. Include any cross-discipline collaborations, faculty representation on committees, student clubs, or other activities that benefit the college as a whole. (Limit to 1-3 paragraphs)

The Drafting and Design Technology programs and courses integrate with a number of campus programs. The following programs include a drafting course as a requirement or an elective: Welding, Mechatronics, Engineering and Art and include the following courses. This has increased with the addition of Maker Space technology courses where Drafting integrates with Mechatronics and Advanced Manufacturing courses. In addition, with the addition of Soft Skills classes the Drafting Department now has a closer relationship with Occupational Education and Work Experience.

Drafting Faculty (who teach drafting either full-time or as an adjunct) have served on the following committees in the past two years: Curriculum, Assessment, Guided Pathways and the Doing What Matters for Jobs in Solano County steering committee.

4.2 Counseling. Contact the Dean of Counseling to schedule attendance at a Counseling School meeting to discuss any programmatic changes, possible career/transfer options for students, suggested course sequencing, and/or any other information you think would be important for counselors to know. Please provide a brief narrative of the visit. (Limit 1-2 paragraphs).

Karen Cook has meet with the Dean of Counseling, and also the entire counseling department on multiple occasions. She has attended two Counseling Division meetings to discuss the Drafting and Surveying Programs, including program requirements and career opportunities for graduates. Karen also invited counselors to the new Maker Space to participate in hands on projects that include 3D printing and laser cutting.

Drafting faculty have good relations with DSP counselors and regular facilitate discussions about student opportunities in Drafting courses.

4.3 Community Ties. Describe how the program connects with the larger community. Include curricular activities, field trips, community/classroom partnerships, marketing efforts, etc. What (if any) are your plans for increasing/strengthening ties with area high schools and advertising your program to prospective students? Faculty professional undertakings that support the community should also be included (conference presentations, professional publications, off-campus committee/advisory representation, etc.). (Limit to 3 paragraphs)

We have promoted our program through our Doing What Matters for Jobs in Solano County Initiative, through professional videos created by the college and through outreach of K-12 students.

The Drafting Faculty are among the founding members of the Doing What Matters for Jobs in Solano County initiative that was started in 2016. This initiative is now a solid district/union partnership and has been recognized as a model for working with community stakeholders.

A summary of the inaugural event, held in August 2016, is included in Appendix. Since this event we have held several follow up events and continue efforts to work with our community partners to enhance CTE programs. Everyone involved in "Doing What Matters" receives periodic newsletters, updating interested parties and program participants about CTE programs at the college.

STUDENT EQUITY & SUCCESS

5.1 Student Success/Underprepared Students. Anecdotally describe how the program works to promote student success for all students.

We regularly get students that require DSP accommodations and, when necessary, work closely with our DSP counselors and the individual students to help them succeed. Depending on what the needs are, we will steer students to the necessary resources.

The new curriculum is meant to streamline the process of moving through the program and into the workforce. In addition, since our more advanced classes are offered online or in the evening, students have the ability to get an industry related job near the end of their degree.

5.2 Success Analysis. Utilizing data from the office of Institutional Research and Planning, report on student success rates in the program as compared to the college as a whole. Then, analyze success by gender, age, ethnicity, and modality (online vs. face-to-face). Provide possible reasons for these trends AND planned action to equalize student success.

Students generally do very well in our courses, performing higher than the college-wide average. This is because these classes are not general education requirements, and the students who enroll are taking the class out of personal and/or professional interest. For the online classes, most students who persist past the first four weeks perform very well, but some students start to fade in our online courses after those initial weeks.

Sometimes students get employed in the middle of the semester, and neglect to drop the course, resulting in a failing grade. This is a frustrating problem across CTE programs that happens often, and students do not tend to petition in OAR to drop with an excuse after the withdrawal deadline.
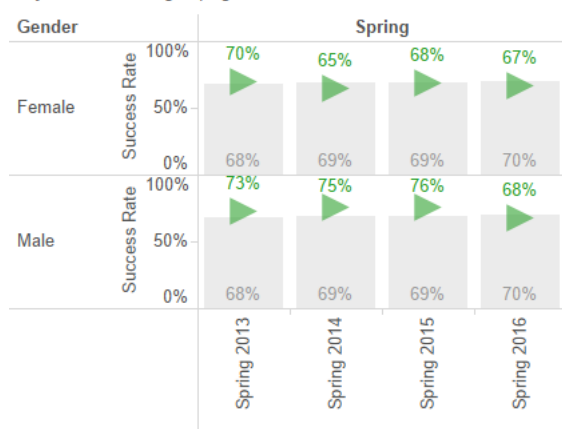
Success by Modality (Drafting Technology)

Chart shows success rate by course modality (triangle represents within discipline, grey bar within Entire Dimension). Disproportionate impact (outside of green shading) is noted in triangle color.
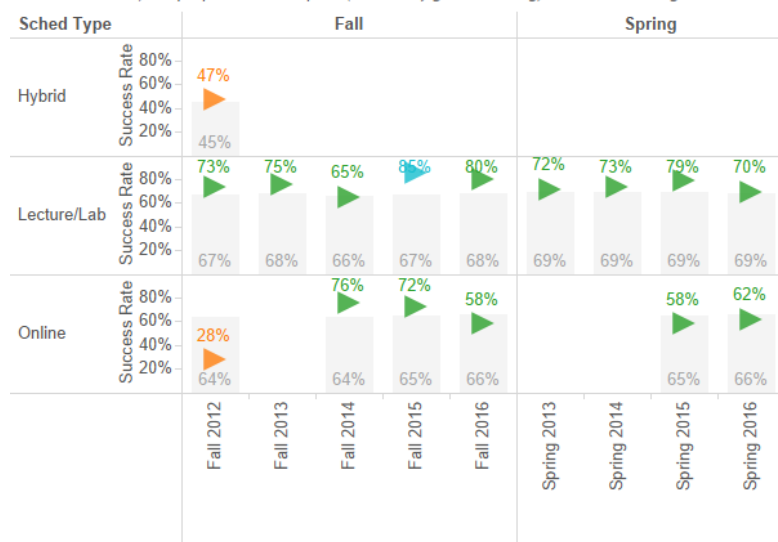
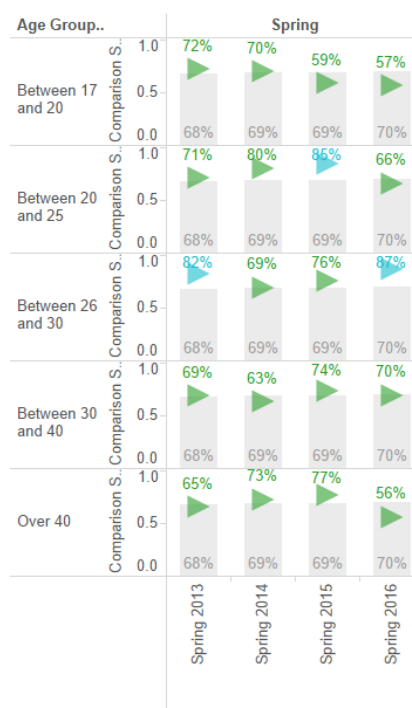Note: Online success rates are compared with success rates of online classes at SCC as a whole.

Sched Type		Fall					Spring			
	Success Rate	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Spring 2013	Spring 2014	Spring 2015	Spring 2016
Hybrid		47% / 45%								
Lecture/Lab		73% / 67%	75% / 68%	65% / 66%	85% / 67%	80% / 68%	72% / 69%	73% / 69%	79% / 69%	70% / 69%
Online		28% / 64%		76% / 64%	72% / 65%	58% / 66%			58% / 65%	62% / 66%

Success by Gender (Drafting Technology)

Chart shows success rate by gender (triangle represents within discipline, grey bar within Entire School). Disproportionate impact (80% of comparison group - Entire School) is noted in triangle color. Only shows student groups greater than 6 students

Gender		Spring			
	Success Rate	Spring 2013	Spring 2014	Spring 2015	Spring 2016
Female		70% / 68%	65% / 69%	68% / 69%	67% / 70%
Male		73% / 68%	75% / 69%	76% / 69%	68% / 70%

Success by Age Group (Drafting Technology)

Chart shows success rate by gender (triangle represents within discipline, grey bar within Entire School). Disproportionate impact (80% of comparison group - Entire School) is noted in triangle color. Only shows student groups greater than 6 students

Age Group..		Spring			
	Comparison S.	Spring 2013	Spring 2014	Spring 2015	Spring 2016
Between 17 and 20		72% / 68%	70% / 69%	59% / 69%	57% / 70%
Between 20 and 25		71% / 68%	80% / 69%	85% / 69%	66% / 70%
Between 26 and 30		82% / 68%	69% / 69%	76% / 69%	87% / 70%
Between 30 and 40		69% / 68%	63% / 69%	74% / 69%	70% / 70%
Over 40		65% / 68%	73% / 69%	77% / 69%	56% / 70%

Success by Ethnicity (Drafting Technology)

*Chart shows success rate by ethnicity (triangle represents within discipline, grey bar within Entire Dimension). Disproportionate impact (80% of comparison group - **Entire Dimension**) is noted in triange color.*
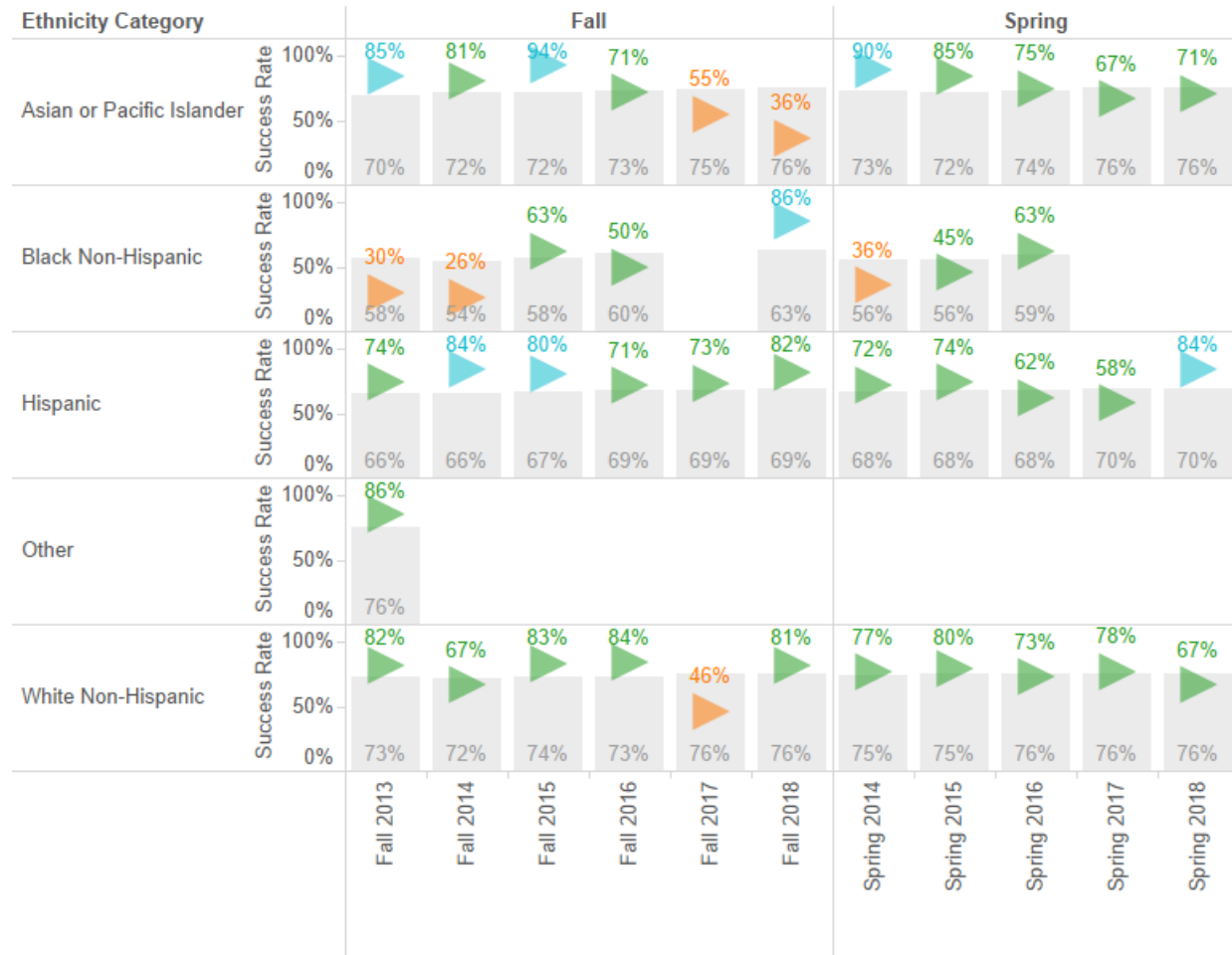*Only shows student groups greater than 6 students*

Ethnicity Category	Fall						Spring				

Asian or Pacific Islander (Success Rate)
- Fall 2013: 85% / 70%
- Fall 2014: 81% / 72%
- Fall 2015: 94% / 72%
- Fall 2016: 71% / 73%
- Fall 2017: 55% / 75%
- Fall 2018: 36% / 76%
- Spring 2014: 90% / 73%
- Spring 2015: 85% / 72%
- Spring 2016: 75% / 74%
- Spring 2017: 67% / 76%
- Spring 2018: 71% / 76%

Black Non-Hispanic (Success Rate)
- Fall 2013: 30% / 58%
- Fall 2014: 26% / 54%
- Fall 2015: 63% / 58%
- Fall 2016: 50% / 60%
- Fall 2018: 86% / 63%
- Spring 2014: 36% / 56%
- Spring 2015: 45% / 56%
- Spring 2016: 63% / 59%

Hispanic (Success Rate)
- Fall 2013: 74% / 66%
- Fall 2014: 84% / 66%
- Fall 2015: 80% / 67%
- Fall 2016: 71% / 69%
- Fall 2017: 73% / 69%
- Fall 2018: 82% / 69%
- Spring 2014: 72% / 68%
- Spring 2015: 74% / 68%
- Spring 2016: 62% / 68%
- Spring 2017: 58% / 70%
- Spring 2018: 84% / 70%

Other (Success Rate)
- Fall 2013: 86% / 76%

White Non-Hispanic (Success Rate)
- Fall 2013: 82% / 73%
- Fall 2014: 67% / 72%
- Fall 2015: 83% / 74%
- Fall 2016: 84% / 73%
- Fall 2017: 46% / 76%
- Fall 2018: 81% / 76%
- Spring 2014: 77% / 75%
- Spring 2015: 80% / 75%
- Spring 2016: 73% / 76%
- Spring 2017: 78% / 76%
- Spring 2018: 67% / 76%

Note: Ethnicity success rates are compared with success rates for all students at SCC with that ethnicity.

5.3 Cross-Discipline Collaboration (if applicable). For certificates or degree programs with required courses outside the discipline, look at the success rates of students in those classes. Note if there are courses that students seem to struggle with, and describe any collaborations with those discipline faculty to talk about strategies for success (ex. establishing cohort groups, tutoring, curriculum additions/examples that may make learning meaningful cross-disciplines, etc.). (Limit to 1-2 paragraphs)

Students generally do well in courses outside the discipline that are required for the degrees. A lot of differences in success rates may be attributed to different professors and their teaching styles.

Course ID	Spring									
	13		14		15		16		17	
	Enrollments	Success Rate	Enrollments	Success Rate	Enrollments	Success Rate	Enrollments	Success Rate	Enrollments	Success Rate
ART 014	53.00	75%	48.00	75%	52.00	75%	46.00	76%	52.00	73%
DRFT 045	35.00	66%	29.00	79%	39.00	67%	48.00	65%	36.00	69%
DRFT 050	28.00	61%	19.00	74%	24.00	71%				
DRFT 055	21.00	86%			16.00	88%			13.00	77%
DRFT 058							24.00	79%	19.00	53%
DRFT 060			21.00	81%			20.00	55%		
DRFT 079	24.00	67%	20.00	60%	19.00	74%	18.00	67%	16.00	88%
DRFT 125	22.00	86%	17.00	76%	17.00	94%				
DRFT 140			15.00	67%			13.00	77%		
ENGR 001	15.00	53%								
GEOL 001	149.00	65%	139.00	68%	129.00	77%	117.00	78%	148.00	83%
GEOL 002	46.00	80%	41.00	76%	54.00	93%	28.00	96%	50.00	78%
GEOL 005	17.00	82%								
IT 050	13.00	31%							17.00	94%
IT 151	24.00	42%	21.00	67%	23.00	52%				
OCED 070							46.00	57%	60.00	68%
OCED 071							23.00	57%	42.00	55%
OCED 090	103.00	64%	91.00	79%	96.00	67%	89.00	82%	69.00	77%
OCED 091	63.00	63%	38.00	62%	62.00	71%	49.00	71%	39.00	72%

5.4 Degrees/Certificates Awarded (if applicable). Include the number of degrees and certificates awarded during each semester of the program review cycle. Describe the trends observed and any planned action relevant to the findings.
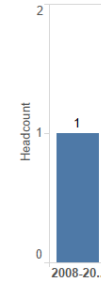
Number of Degrees (Drafting and Design Technician - All)

Degree Desc
- Associate in Science
- Certificate of Achievement
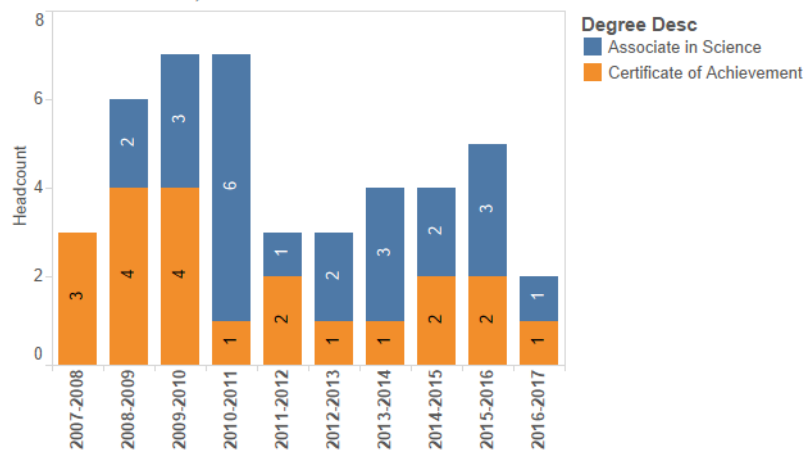
Number of Degrees (Drafting Tech: Civil/Architect - Associate in Science)
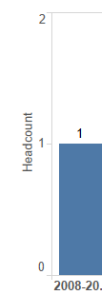
Number of Degrees (Drafting Tech: Mech/Electrical - Associate in Science)

Although this is a small sample size, the fact that more degrees were given from 2009 to 2012 makes sense. Many people/students were unemployed in 2008 during the economic downturn when enrollments were high. They would have completed their degree coursework around 2010 to 2012.

5.5 Transfer (if applicable). Describe any data known about students in your program who are transfer eligible/ready (have 60 transferable units with English and math requirements met). Include how your program helps students become aware of transfer opportunities (limit to one or two paragraphs). For baccalaureate programs, address any efforts to support students seeking to transfer to graduate programs. (Limit to 1-2 paragraphs)

n/a

5.6 Career Technical Programs (if applicable).   For career technical programs, describe how graduates are prepared with the professional and technical competencies that meet employment/ licensure standards. State if there are any efforts made to place students in the workforce upon graduation, including any applicable placement data. (Limit to 1-2 paragraphs)

The Drafting and Design program does not have licensure standards for the entire program. However students who enroll in Solidworks have the ability to take an industry standard certification and the success rate is high. Students need not take more coursework to qualify or prepare for that exam. Other standards are set by industry advisors in the various disciplines covered in our program.

RESOURCES

6.1 Human Resources. Describe the adequacy of current staffing levels and a rationale for any proposed changes in staffing (FTEF, full-time/part-time ratio, retirements, etc.). Address how current staffing levels impact the program and any future goals related to human resources. (Limit to 1-2 paragraphs)

With the addition of 2 new adjunct faculty in Fall 2018 to the Drafting Department, we are well staffed at this point.

FTEF (Drafting Technology)

Chart shows total FTEF by contract type

Measure Names
- FTEF Full Time
- FTEF Overload
- FTEF PT Hourly
- Ftef Ft 50%

Spring

Value	Spring 2013	Spring 2014	Spring 2015	Spring 2016	Spring 2017
FTEF Full Time	1.00	1.00	1.00	0.50	0.80
FTEF Overload		0.32	0.43	0.65	0.35
FTEF PT Hourly	1.24	1.07	0.60	1.20	0.30

6.2 Technology & Equipment. Address the currency of technology and equipment utilized by the program and how it affects instruction and/or student success. Make recommendation (if relevant) for resources that would improve quality of education for students. (Limit to 1-2 paragraphs)

New equipment is constantly being added to the Makers Space. The program excels in keeping the most up-to-date technology to keep students competitive. However, new computers are badly needed in Room 1881, the CAD lab, because we need to keep up with the new 3D software. The current computers can't handle the tasks required.

6.3 Facilities. Describe the facilities utilized by your program. Comment on the adequacy of the facilities to meet program's educational objectives. (Limit to 1-2 paragraphs)

The program uses multiple facilities: 1881, 1852 (Maker's Space), 1818 and 1819 (classrooms). The rooms themselves are adequate to the program's needs for the time being.

6.4 Library Resources. Schedule a meeting with library faculty to review discipline-specific library resources. Provide a brief narrative about the status of library resources and plans to supplement the collection. Include the library collection evaluation form as an appendix.

There are few books on reserve in the library in Fairfield, but the faculty will consult with librarians to see if any additional or updated resources might be added.

6.5 Budget/Fiscal Profile. Provide a five year historical budget outlook including general fund, categorical funding, Perkins, grants, etc. Discuss the adequacy of allocations for programmatic needs. This should be a macro rather than micro level analysis.
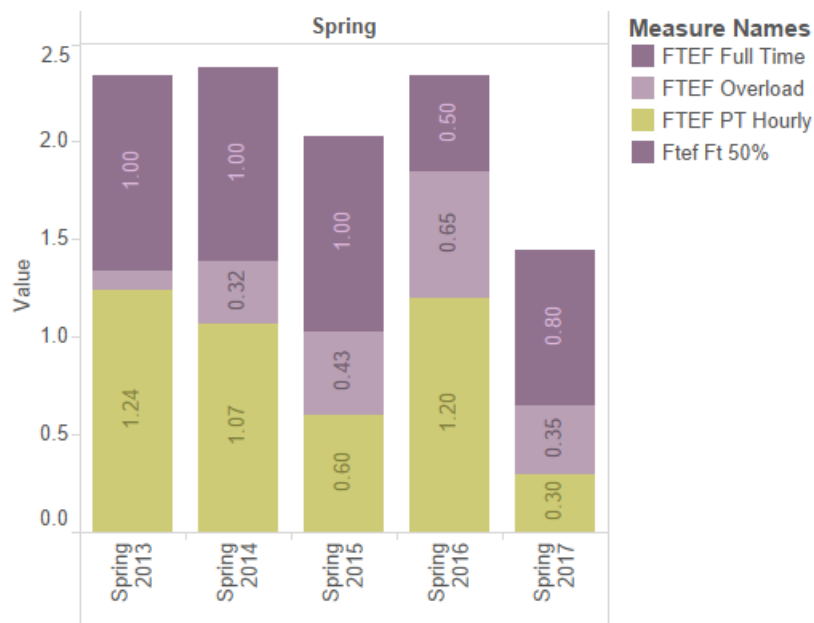
The funding for the program comes from Perkins, Strong Workforce Funds, and the SCC General Fund. At the moment, much new equipment has been purchased via Strong Workforce Funds. We anticipate continued support from Strong Workforce and Perkins in the foreseeable future.

GOALS & PLANNING

This section will be submitted to the Superintendent-President as an overview of programmatic strengths and areas of growth.

7.1 Program Strengths and Areas for Improvement. Summarize what you believe are your program's strengths and major accomplishments in the last 5 years. Next, state the areas that are most in need of improvement. Include any professional development opportunities that would support these areas of needed improvement.

We are proud of the reviews we get from industry experts about our programs and graduates entering the field. We feel we have a strong program that can offer student experience using the latest equipment and software. Our hope is that the new SCC Maker Space takes hold it will entice students to enter Drafting and related fields. The program opening is ahead of schedule and so far interest is strong. We have strong faculty who are dedicated to student success.

The program needs a more robust marketing program so prospective students know about the opportunities that Drafting and the other CTE programs offer. This is also true of the new SCC Maker Space. And although the Maker Space has state of the art equipment, the CAD lab in 1881 needs new computers in order to keep up with the latest software demands.

7.2 Program Goals. Based on the program review self-study analysis, list any goals from the six focal areas: Program Overview and Mission, Assessment, Curriculum, Campus and Community Integration, Student Equity and Success, Resources, and Professional Development.

Table 4. Program Goals

PROGRAM OVERVIEW & MISSION (Sections 1.1-1.9)

Program Goals (click on text below for drop-down options, add goals as necessary)	Planned Action (s)	Person(s) Responsible	Priority ranking of program goals
Create new degree/certificate	New AA degree in Maker Space Technology and Entrepreneurship. An entrepreneurship degree is a part of the regional work through SCC that focuses on Small business and entrepreneurship related experiential learning opportunities. The degree will combine Maker Space coursework plus curriculum relating to entrepreneurship.	Karen Cook	1

ASSESSMENT (Sections 2.1-2.7)

Assessment Goals (click on text below for drop-down options, add goals as necessary)	Planned Action	Person(s) Responsible	Priority ranking of assessment goals
Assessment is up-to-date and ongoing; no goals at this time			

CURRICULUM (Sections 3.1-3.7)

Curriculum Goals (click on text below for drop-down options, add goals as necessary)	Planned Action	Person(s) Responsible	Priority ranking
Create a half unit sewing class for the Maker Space.	Currently lessons one sewing are combined with IT173, Tool Safety, and we are reviewing how well this is working. We are considering a .5 unit class in sewing.	Karen Cook	1
Curriculum Review	Curriculum Review is scheduled to begin fall 2019. We will continue to	Karen Cook	1

	review programs to achieve the best outcomes.		

CAMPUS & COMMUNITY INTEGRATION (Sections 4.1-4.3)

Campus & Community Integration/Outreach goals (click on text below for drop-down options, add goals as necessary)	Planned Action	Person(s) Responsible	Priority ranking
Expand advertising	We are working with the district on advertisement of programs.	SCC District	1
Continue Outreach	Continue holding workshops for k-12 students	Karen Cook	1

STUDENT EQUITY & SUCCESS (Sections 5.1-5.6)

Student Equity & Success Goals (click on text below for drop-down options, add goals as necessary)	Planned Action	Person(s) Responsible	Priority ranking
Data shows student success and equity across all modalities and demographics; no goals at this time			

PROFESSIONAL DEVELOPMENT (all sections)

Professional Development Goals (click on text below for drop-down options, add goals as necessary)	Planned Action	Person(s) Responsible	Priority ranking
Development in subject area	Faculty will continue to develop new skills in the latest technology and industry practices though workshops and conferences.	Karen Cook	1

RESOURCES (Sections 6.1-6.5)

Human Resources Goals (click on text below for drop-down options, add goals as necessary)	Planned Action	Person(s) Responsible	Priority ranking

Current staffing is adequate; no HR goals at this time			
Technology & Equipment Goals (click on text below for drop-down options)	Planned Action	Person(s) Responsible	Priority ranking
Add/upgrade office technology/equipment			
New Computers in 1881	Faculty will work with Dean Morinec and I.T. to purchase new computers for the CAD lab in 1881	Karen Cook Maire Morinec, I.T.	1
Potential equipment in Maker Space	As we gain experience in the maker space we may need new equipment to keep up to date	Karen Cook	2
Facilities Goals (click on text below for drop-down options)	Planned Action	Person(s) Responsible	Priority ranking
Facilities are up-to-date; no goals at this time			
Room 1881	The CAD lab may need new equipment, desks, etc, to keep up with needs.	Karen Cook Maire Morinec, I.T.	
Library Resource Goals (click on text below for drop-down options)	Planned Action	Person(s) Responsible	Priority ranking
Library resources are up-to-date; no goals at this time			

SIGNATURE PAGE

Please include all full-time faculty and as many part-time faculty as possible.

The undersigned faculty in the Office Technology Program have read and have had the opportunity to provide feedback on the attached program review self-study, dated 2/1/2018.

_____

Dawn Carpenter

_____

Kathleen Callison

_____

Jessica Le

_____

Adrienne Cary

_____

Pat Ceja

APPENDICES

Appendix A: Catalog Course Descriptions (2016-17)

DRFT   045   **3.0 Units**
Introduction to Computer-Aided Drafting (CAD)
Course Advisory: SCC minimum English and Math standards. Designed to introduce the drafting student to CAD (AutoCAD) technology and terminology. The student shall complete a series of related drawing problems using a CAD work station. Fundamentals of creating and modifying engineering and architectural related drawings. *Two hours lecture, three hours lab.*

DRFT   046   **3.0 Units**
Advanced Computer Aided Drafting (CAD)
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. Designed to develop advanced proficiency in CAD. Covers symbol libraries, isometrics, external references (XREFS), 3-D drawing, basic solid modeling, tables and customization techniques. *Two hours lecture, three hours lab.*

DRFT   050   **1.5 Units**
Basic Drafting
Course Advisory: SCC minimum English and Math standards. This course presents the fundamentals of drafting using hand drafting tools—pencil, paper, triangles, scales, compass, etc. Students will use traditional methods of construction for polygons, orthographic views, pictorial drawings, simple architectural floor plans and other technical drafting constructions and will be giving hands on training in technical sketching. This course is intended to give additional training in visualization and object manipulation without the aid of a computer and is a recommended elective for drafting students, or for non-drafting students (in fields such as welding, mechatronics, engineering, etc) who may need to create technical drawings without a computer. *One-half hour lecture, three hours lab.*

DRFT   055   **3.0 Units**
Mechanical Drafting Level I
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. This course teaches techniques and standards of mechanical drafting. Main topics include orthographic drawings, sections, pictorials, threads, fasteners, basic tolerance concepts, ANSI standards and working drawings. Basic mechanical design principles, with a special emphasis on electro-mechanical packaging, are introduced. *Two hours lecture, three hours lab.*

DRFT   057   **3.0 Units**
Mechanical Drafting Level II
Prerequisite: DRFT 055 with a minimum grade of C. Course Advisory: IT 151 (may be taken concurrently); SCC minimum English and Math standards. A continuation of Drafting 55, with special emphasis on advanced electro-mechanical packaging and design, Geometric Dimension and Tolerancing (GD&T) terminology and drawing standards, gears, and advanced working drawings. Students will create designs using electronic components (Printed Circuit Boards, connectors, LEDs, etc) and 3D printed models. *Two hours lecture, three hours lab.*

DRFT   058   **3.0 Units**
Solid Modeling with Solidworks
Course Advisory: SCC minimum English standards; knowledge of drafting concepts. This course is designed to teach the basic concepts and skills necessary to create, view, and manipulate objects and engineering drawings in three dimensional space using Solidworks software. Student will create models in 3D printer, output support documentation and drawings, and incorporate design process concepts in designs. *Two hours lecture, three hours lab.*

DRFT   060   **3.0 Units**
Architectural Drafting I
Prerequisite: DRFT 045 with a minimum grade of C. Course Advisory: SCC minimum English and Math standards. Covers basic methods and practices of architectural drafting and design. Students will design a complete set of plans for a single family dwelling in accordance with local building regulations. Course includes an introduction to the Title 24 energy requirements and standards. Recommended for non-majors and drafting majors. *Two hours lecture, three hours lab.*

DRFT   065   **3.0 Units**
Architectural Drafting II
Prerequisite: DRFT 060 with a minimum grade of C. Course Advisory: IT 151 (may be taken concurrently); SCC minimum English and Math standards. A continuation of Drafting 60 with special emphasis multiple story residential design. Students will create an industry standard, two-story house design on a 12-14 sheet plan set. This course also exposes students to famous architects, past and present. *Two hours lecture, three hours lab.*

DRFT   075   **3.0 Units**
Electronic Drafting
Prerequisite: DRFT 045 with a minimum grade of C.
Course Advisory: SCC minimum English and Math
standards. Designed for drafters to develop skill in
reading and drawing plans related to electronics.
Topics include, terminology, component identification,
schematic symbols, cable drawings, electro-mechanical
design from the electronic perspective. Special
emphasis is placed on basic printed circuit board
design. Students will design through-hole and surface
mount printed circuit boards. *Two hours lecture, three*
hours lab.

DRFT   079   **3.0 Units**
Blueprint Reading
Course Advisory: SCC minimum English and Math
standards. Designed to provide an understanding and
interpretation of a variety of blueprints. Emphasizes
the ability to recognize and identify features of
mechanical blueprints and architectural blueprints.
Also includes basic development of freehand
sketching abilities. *Two and one-half hours lecture, one*
and one-half hours lab.

DRFT   080   **3.0 Units**
Civil Drafting I
Prerequisite: DRFT 045 with a minimum grade of C.
Course Advisory: IT 151 with a minimum grade of C. SCC
minimum English and Math standards. An introductory
course in civil drawing with emphasis on land
division, breakdown of survey notes, office procedures
and related math computations. Includes instruction
in a variety of industry standard maps, including
subdivision maps, assessors parcel maps and
topographic maps. *Two hours lecture, three hours lab.*

DRFT   085   **3.0 Units**
Civil Drafting II
Prerequisite: DRFT 080 with a minimum grade of C.
Course Advisory: IT 151 with a minimum grade of C; SCC
minimum English and Math standards. Designed for the
advanced civil drafting student with emphasis on
computer programs and experience compatible with
the industry standards. Includes the study of plan and
profile, cross-section and earthwork calculations. *Two*
hours lecture, three hours lab.

DRFT   092   **1.0 to 3.0 Units**
Special Problems
Prerequisite: DRFT 050. Individualized projects for
advanced students who demonstrate competency to
carry out individual work. Students may take this
course up to the maximum number of units over
multiple semesters. *Three to nine hours by arrangement.*

DRFT   130   **3.0 Units**
Electronic Drafting With CAD
Prerequisite: DRFT 075 with a minimum grade of C.
Course Advisory: SCC minimum English and Math
standards. The student will learn how to design
complex circuit boards from schematic layout to
artwork generation. Course requires completion of a
complete set of drawings for a printed circuit board,
including proper documentation, all based on industry
standards. Through-hole and surface mount
technology are studied. *Two hours lecture, three hours*
lab.

DRFT   140   **3.0 Units**
Surveying
Prerequisite: DRFT 080 with a minimum grade of C.
Course Advisory: IT 151 with a minimum grade of C; SCC
minimum English and Math standards. Presents the
principles and practices of surveying. Topics include
measurement of directions, distances and elevations.
Students will learn the use and care of electronic
survey equipment, transits, tapes and levels and be
introduced to topics that include transverse
calculations, horizontal and vertical curves, measuring
standards and mapping. *Two hours lecture, three hours*
lab.

Appendix B: Library Collection Assessment for Program Review (PR)

PURPOSE:

- **to aid the librarians in ensuring we are adequately meeting the needs of the curriculum and the college community;**
- **to provide insight into the strengths and weakness of the Library's collections;**
- **to support budget allocations and funding requests;**
- **to strengthen faculty participation in the vitality of the Library and its collections;**
- **and to provide faculty an opportunity to familiarize themselves with Library resources available to them and their students.**

STEPS:

1. Program under review alerts a Librarian that they have started the process and have appointed faculty to the *Library Collection Evaluation* section of the PR document.
2. Librarian and appointed program faculty meet to tour and review the collection.
3. Librarian will write a report on the status of the collection using meeting notes and evaluation form below. Report will be disseminated to program faculty.
4. Librarians will allocate collection funding towards areas identified as weak or needing updates.
5. Assessment of the Library collection will continue through the Program Review process.

DISCLAIMER:

The Solano Community College Library is not equipped, suited, or used as a repository of archival materials. We all love old books, however we don't have the supplies or space to adequately store them. The SCC Library is linked to national and international Interlibrary Loan services to help students and faculty locate materials outside the scope of our collection.

The acquisition budget for the Solano College Library is small for an institution of SCC's size. We cannot buy everything, and we need to spread money out across the curriculum. We promise to do our best for departments, programs, and students. The inclusion of a library review in a department's Program Review will allow for data-driven decision making in the allocation of the library's limited funds.

Ultimately, it is the responsibility of the college librarians to maintain the collections. Final decisions on acquisitions and discards reside with the librarians and their professional expertise in such matters.

LIBRARY COLLECTION EVALUATION FORM FOR PROGRAM REVIEW

Please answer YES or NO to the questions in the table below for each collection listed. Please follow-up any "NO" answers with written explanation. Answer N/A when applicable.

Collection Types:	Are core subject materials represented?	Currency (are items up to date? Outdated?)	Appropriateness for student needs and learning levels?	Gaps in subject coverage?	Adequacy for faculty professional development?	Adequate for meeting the needs of DE and Center students?
Books (online/print)						
Databases						
Reference Materials (online/print)						
Periodicals (print)						
Media (online/physical)						
Textbooks						
Other (bones/rocks/misc)						

I/we have reviewed the library's holdings for the program and do:

_____ recommend additional resources in the subject areas on the attached list.

_____ recommend the withdrawal of items on the attached list.

Summary of Evaluation Findings:

Appendix D: Summary of Inaugural "Doing What Matters…" Initiative

On August 12 a first of its kind community event named "Doing What Matters for Jobs in Our Community" was held at the Sheet Metal Workers Local 104 facility near the college in Cordelia. This union-management partnership event was initiated and funded by the Solano College Faculty Association (SCFA) in response Governor Brown's allocation of $200 million for Career Tech Education (CTE) programs, and California Community College Chancellor Harris, initiative for twenty-five recommendations for a Strong Workforce Program for the community colleges as guidelines in creating robust CTE programs.

This is one of the first major responses by state leaders to strengthen and build robust CTE programs since the signing of AB1725 in 1988. AB1725 diminished CTE funding and focus which has led to a crisis in an adequate, trained workforce and to the rise of for profit technical colleges to fill the void.

In response to the governor's proposal, SCFA formed a steering committee that met over a seven-month period to organize an important participatory, round-table career-tech event facilitated by CTA staff. The steering committee was comprised of the Napa Solano Central Labor Council, Workforce Development Board at Solano, Industrial Areas Foundation, Solano Community College District and CTA. This revolutionary, productive event was called, "Doing What Matters for Jobs for Solano Community." Held on August 12 at the Sheet Metal Workers Local 104 building, this event brought together for the first time individuals who rarely--if ever-discuss, let alone collectively idea-share and problem-solve, the needs of Career Tech Education. The CTE steering committee invited community economic drivers, community college and K-12 educators, administrators, students, labor unions, and elected representatives, State Secretary of Education Torlakson, Assemblymembers Bill Dodd and Michael Frazier, and Congressman Garamendi's staff. Held at the Steel Metal Workers' Labor Hall in Fairfield on August 12, 2016, participants enthusiastically collaborated to identify ways to create a strong CTE program that addressed the needs of the Solano community.

The turnout exceeded the steering committee's expectations. 130 confirmation were received. Over 185 attended. The diversity of participants was key to the overall success of this event. This event raised awareness of the college CTE programs, the community's needs, and additional state CTE funding; it also sparked many *new* conversations and promoted relationships among all individual participants and the three campus unions.

The day-long event was organized in two sessions. Session one brought together economic drivers and labor unions. Participants were asked to brainstorm ideas relating to the essential question, "What can Solano Community College and its stakeholders do to create a strong workforce?" Seated at twelve round-tables, participants conversed, and CTA and Industrial Areas Foundation facilitators perused and assisted the groups. Participants posted their brainstorming charts on the walls to create a gallery for everyone to see. All participants circulated to read, to comment, and to invest and engage further; they were asked to put sticky-notes near the most compelling ideas that they were going to commit to. They shared their contact information for future engagement and participation in the steering committee.

Over half of the members committed to taking next steps. Session Two repeated the process of Session One with the added task of reviewing nine of the Chancellor's recommendations in light of what the two sessions identified as community needs.

Three key components to this event's success are participant-diversity; participatory nature (as opposed to formal presentations); and a social lunch during which Session One continued conversations and Session Two participants were commencing their idea-sharing. Session One set the stage for entering participants to engage. The overall tone and energy was vibrant and dynamic.

Results of the sessions will be distributed electronically to all participants. Those who committed to additional projects will be contacted and invited to meet with the steering committee for taking next steps. A September meeting will invite SCCD management, trustees, and general education leaders, and SCCD's elected leadership. September's meeting goal is to debrief the August 12 event, to assess recommendations from both sessions, and to discuss next steps.

At the conclusion of the day, Executive Director of Workforce Development Board, Tim Rainey, said, "we need to do this kind of event and have these kinds of discussion across the state of California."