Instructional Comprehensive Program Review: CADD Program Review

Cover

Overview
Title CADD Program Review

Year of Last Comprehensive Review

Year of Last Mini Update, if applicable

Originator Rosas, Manual

Area Dean Maniphone Dickerson

Division
Bus & Workforce Development

Department
Computer Aided Design & Draft.

Subject

- CADD - Computer Aided Design & Draft.

Is this a review for a degree/certificate or all the courses in the subject?
All Courses

Courses with no Degree or Certification

Co-Contributors

*Co-Contributor must be chosen before proposal is launched

- Dickerson, Maniphone
- Hitchcock, John

Overview

With equity, opportunity and social justice as our guiding principles, Evergreen Valley College's mission is to empower and prepare students from diverse backgrounds to succeed academically, and to be civically responsible global citizens.

1.Student-Centered: We provide access to quality and efficient programs and services to ensure student success.
- **Access**
- **Curriculum and programs**
- **Services**

2. Community Engagement: We will transform the college image and enhance partnerships with community, business and educational institutions.
Areas of focus are:
- **Increase visibility**
- **Develop strategic partnerships**
- **Building campus community**

3.Organizational Transformation: We create a trusting environment where everyone is valued and empowered.
Areas of focus are:
- **Communication**
- **Employee development**
- **Transparent Infrastructure**

Related Assessments

- **1. Provide a brief summary of your program. Please include a brief history and discuss any factors that been important to the program's development.**

  The CADD program has been active for a long time. In the early 80's there were certificate programs in the manual drafting subjects. The program then provided basic manual drafting courses, Auxilary view, electronic drafting, descriptive geometry drafting, Assembly and detail drawings, Layout and packaging, Integrated circuits, Printed circuit boards, tool design, and even architecture and other subjects relative to the times. All courses were mostly in board or manual drafting, and some courses were in Direct Modeling and CAD drafting.

  The program has been stagnant in terms of adapting to future times in the drafting and especially in the design industry. The program has a view to implementing new courses focused on newer technology, Parametric Modeling, Design process and 3D printing to equip the students with the latest skills the industry is looking for in the new Designer / Drafter job market.

  Factors important in developing the program were the increase in manufacturing and the need for engineering assistants and CAD drafters. When the program was developed, its focus was much different from now. The program was developed prior to mass computer adoption, so the courses implemented were manual drafting. The program focused on manual drafting courses, focusing on electronics, diagrams, packaging, circuit boards and many other disciplines. The Silicon valley area is still an area where innovation continues and ideas become reality. Now the program strives to offer courses utilizing state of the art CAD software used in these same foundational disciplines.

- **2. Please provide an update on the program's progress in achieving the goals (3 years) set during the last comprehensive program review.**

  No previous program review was conducted, therefore there are no goals to achieve from previous program reviews.

  N/A

- **3. Please state and recent accomplishments for your program and show how it contribute to the College's mission and success.**

  The recent programs achievements have been to grant 5 total certificates to students. The students that received these certificates are equipped with the skills they need to enter the workforce, because our teaching methodology is to challenge them in our classroom so they can succeed in their lives. We offer a variety of certificates of specialization, so students can choose their path. Flexability and student-centered assignments and coursework are some ways we support our students in the classroom for them to achieve their goals. Our flexibility in all course work is to include student interest and allow them to choose a project of their interest, allow them to showcase their mastery of SLO's.

- **4. If you received resource allocation for your last program review cycle, please indicate the resources you received and how these resources were utilized to impact student success and / or importance to your program. (The resources can be personnel or fiscal)**

  No program review was conducted, and no resources were allocated due to lack of program review.

  N/A

- **5. Please describe where you would like your program to be three years from now (Program goals) and how the college mission, strategic Initiatives and student success.**

The CADD program's goal for the next three years is to be in full compliance. Right now, all of the certificates are out of compliance due to not teaching a class, or a class being de-activated or no longer offered. A full successful target would be to establish 3 certificates with an increase in complexity of workforce skills.

In order to achieve these goals, I would have to clean all courses and certifications and degree requirements. Three new certications would be as follows:

The first certificate would be a 3D modeling certificate, focused on the latest CAD software used in the industry.

The second certificate would focus on design and drafting standards.

The third certificate would focus on design and development.

These certificates provide choice, student-centered certificates according to student interest and industry needs.

The CADD program would consolidate all three certificates into an AS degree, in order to further provide more opportunity to attain a degree or even transfer.

The design and development would only be possible with new design courses that equip the students with product design process skills, Prototyping (3D printing), and design problem solving skills for current environmental, medical, aerospace, and other industrial problems.

In three years, the CADD program would have had an organizational transformation that would visibly show a clear path for students to achieve certification and degree in a seamless fashion.

Program Set Standards (Summary Tab)

Overall, EVC's Institution Set Standard for success rate is 72%, and the aspirational goal for student success is 75%.

Success Rate (completion with "C" or better)	Program	EVC	Program Set Standard (established during last comprehensive PR)	Program Success Goal (new)
F'14-F'20 average		71.10%		

Courses with no Degree or Certification

Program Success Rate 74.05

Program Set Standard **: It is recommended that programs identify a success standard. This standard should reflect the baseline success rate.**

Program Set Standard 66.65

Recommendation: **90% of the 2 year average success rate could be your program standard (average x 0.9).**

Program Success Goal **: It is recommended that programs identify a success goal. This goal should reflect the success rate to which your program aspires.**

Program Success Goal 78.00

- **Is your program success rate higher or lower than the campus?**

    The Program Success Rate is higher than EVC's 71% success set and the inspirational standard.

- **If your success rate is higher than the campus, how are you helping students succeed in and outside the classroom? If your program success rate is lower, what are some strategies your program is implementing to improve?**

    Students are given support in every way possible. Students can submit missing assignments up until the last day of the semester without penalty in their grade. Students are respected for their time, instruction begins on time, and is given an opportunity to work individually in class. Office hours are extended beyond the posted times to allow the students to meet at any other time permitted by their work and life schedule. The department will request for 3

computers to be equipped with CADD programs so the students can use them at their scheduled time. The department will investigate the possibility of hiring a student who has completed a certificate and is able to tutor other students.

- **Is the current program success rate higher than the program set standard?**

    Program Success Rate = 74.05%

    Program Set Standard = 66.65%

    Program Success Goal = 78%

    The Program Success Rate (74.05%) is higher than the Program Set Standard (66.65%)

- **How close is the program to meeting the program success goal?**

    The Program Success Goal is 78% and the Program Success Rate is 74.05%. Therefore, the CADD program is 4% away from meeting the goal.

- **Are these measures (program set standard and program success goal) still current/accurate? If not, please describe here and reset the standards.**

    The program set standards and program success goals are not current since this is the first time these goals will be set. The department aspires to increase it's student success rate by 5%. Therefore, the new Program Success Goal is 78%.

Success Rates: Measures by IPEDs Race/Ethnicity

- **American Indian**

    Program Average Total Enrolled
    1.000

    Program Success Rate
    50.000

- **Asian**

    Program Average Total Enrolled
    22.000

    Program Success Rate
    79.660

- **Black or African American**

    Program Average Total Enrolled
    1.000

    Program Success Rate
    38.890

- **Hawaiin/Pacific Islander**

    Program Average Total Enrolled
    2.000

    Program Success Rate
    50.000

- **Hispanic**

    Program Average Total Enrolled

18.000

Program Success Rate
70.920

- **Two or More Races**

  Program Average Total Enrolled
  2.000

  Program Success Rate
  81.000

- **Unknown**

  Program Average Total Enrolled
  5.000

  Program Success Rate
  81.960

- **White**

  Program Average Total Enrolled
  6.000

  Program Success Rate
  66.790

Success Rates: Measures by Gender

- **Female**

  Program Average Total Enrolled
  12.000

  Program Success Rate
  74.800

- **Male**

  Program Average Total Enrolled
  42.000

  Program Success Rate
  74.800

- **No Value Entered**

  Program Average Total Enrolled
  2.000

  Program Success Rate
  100.000

Success Rates: Measures by Age

- **17 & Below**

  Program Average Total Enrolled
  1.000

  Program Success Rate
  85.710

- **18-24**

  Program Average Total Enrolled
  13.000

Program Success Rate
71.080

- **25-39**

  Program Average Total Enrolled
  24.000

  Program Success Rate
  73.780

- **40 & Over**

  Program Average Total Enrolled
  17.000

  Program Success Rate
  78.230

- **Unknown**

  Program Average Total Enrolled
  0.000

  Program Success Rate
  0.000

- **a. With respect to disaggregated success rates, list any equity gaps that are identified and discuss interventions your program will implement to address these equity gaps? Please include a timeline of implementation and reassessment.**

  Equity gaps;

  American Indian: -18.72%

  Black or African American: -22.03

  Hawaiian / Pacific Islander: -15.79%

  White: -6.83%

  The CADD program will provide support and interfere in the best way possible to help any student that is struggling in the classroom, regardless of their race/ equity, gender, or age. The instructor keeps an updated gradebook at least every other week, or 10 business days. Keeping close communication with the student will increase the chance for the student to be successful in class. When a student is identified as a low performing student, the instructor will intervene by talking to the student during class after an assignment is reviewed or new material is given. The instructor will check for understanding with the identified student and see how the student can be helped. One-on-one sessions will be conducted with the students. Explain the assignment again in a different way in hopes the student understands the assignment.   Ask guiding questions and or even provide assignments in a different format/ translation.

- **b. With respect to disaggregated success rates (ethnicity / race, gender and age), discuss student performance in reaching your program set standard for student success as well as reaching the program success goal.**

From the data provided, it is concluded that gender or age is a big contributing factor in meeting the success rates. All subcategories in gender and age meet or exceed the program set standard for success and program success goal.

The subcategories that bring down the success rate lie in the Race/Ethnicity categories, and specifically in minorities that have a low student count at EVC. I do see a correlation with the lowest success rate at EVC (Black/ African American) being the lowest success rate in the department. Having someone in the classroom that you can identify with can play a big role, not to mention in a bigger scenario like school wide.

Program Awards - If Applicable

If the classes in your program lead to a degree or certificate, please visit the DataMart and indicate how many degrees/certificates were awarded in your program: http://datamart.cccco.edu/Outcomes/Program_Awards.aspx (http://datamart.cccco.edu/Outcomes/Program_Awards.aspx)

You will need to select drop down menus and then "select program type by major of study" (for example, select Legal for paralegal studies).

Then at the bottom of the report, select the box "program type- four digits TOP", then update report to get program specific information.

Degree Type

- **AS**

  Number of Awards (Examine 2014-15, 2015-16, 2016-17,2017-18 data 2018-19 data and 2019-20 data)
  5

  Discussion
  Number of Awards Granted by school Year; AS degrees (#)

  2011-12: (1) Reference only

  2012-12: (2) Reference only

  2013-14: (1) Reference only

  2014-15: (0)

  2015-16: (0)

  2016-17: (0)

  2017-18: (0)

  2018-19: (0)

  2019-20: (2)

  2020-21: (3)

- **Certficate less than 12 units**

  Number of Awards (Examine 2014-15, 2015-16, 2016-17,2017-18 data 2018-19 data and 2019-20 data)
  0

  Discussion
  2011-12: (9) Reference only

  2012-12: (8) Reference only

  2013-14: (10) Reference only

2014-15: (0)

2015-16: (0)

2016-17: (0)

2017-18: (0)

2018-19: (0)

2019-20: (0)

2020-21: (0)

Student Enrollment Types

Related Assessments

Student Enrollment Type: Day or Evening Student

- **Day: 4721 - 51.130%**

  Program Average Headcount
  9.000

  Program Percentage of Total
  13.240

- **Day & Evening: 3111 - 33.690%**

  Program Average Headcount
  24.000

  Program Percentage of Total
  35.290

- **Evening: 1061 - 11.490%**

  Program Average Headcount
  17.000

  Program Percentage of Total
  25.000

- **Unknown: 341 - 3.700%**

  Program Average Headcount
  18.000

  Program Percentage of Total
  26.470

Student Enrollment Type: Academic Load

- **Full Time: 2259 - 24.450%**

  Program Average Headcount
  6.000

  Program Percentage of Total
  11.760

- **Half Time or less than half time: 6214 - 67.280%**

  Program Average Headcount
  41.000

  Program Percentage of Total

80.390

- **a. Discuss any changes in program enrollment types (day vs evening, full-time vs part-time) since your last program review?**

  Not applicable, first time conducting program review.

- **b. Discuss how do your program enrollments (Pct of total) compare to EVC?**

  The day and evening correlate almost exactly with EVC numbers. Where it varies is in the day, evening and unknown.

  The students that attend in the daytime are almost 4 times fewer than EVC numbers.

  The evening is 2.5 times more and unknown is more than 7 times the EVC numbers.

  The explanation is due to the students the CADD department services. The majority (87%) of students are working professionals that attend EVC to sharpen their skills and or want to transition to another better paying job. The only time they have is after work and or at weekends.

- **c. Based on the data, would you recommend any changes?**

  The department will continue to commit to providing high quality classes to working professionals and bettering their skills in the CADD field to better their opportunities to get a better paying job. The department is focused on placing students in jobs and the workforce after completing a certificate. I don't think we should change this agenda. 80% of the students are part-time students taking one class, one software that can open the doors to a better opportunity. Not all students want to transfer and attain a higher education degree and the numbers for our program demonstrate that.

Student Demographics - Headcount

Related Assessments

Student Demographic: Gender

- **Female: 5022 - 54.390%**

  Program Headcount
  11.000
  Program Percentage of Total
  22.000

- **Male: 4176 - 45.220%**

  Program Headcount
  38.000
  Program Percentage of Total
  76.000

- **No Value Entered: 36 - 0.390%**

  Program Headcount
  1.000
  Program Percentage of Total
  2.000

Student Demographic: Age

- **17 & Below: 465 - 5.000%**

  Program Headcount
  1.000

  Program Percentage of Total
  2.040

- **18-24: 5542 - 59.990%**

  Program Headcount
  12.000

  Program Percentage of Total
  24.490

- **25-39: 2214 - 24.010%**

  Program Headcount
  21.000

  Program Percentage of Total
  42.860

- **40 & Over: 1006 - 10.900%**

  Program Headcount
  15.000

  Program Percentage of Total
  30.610

- **Unknown: 9 - 0.100%**

  Program Headcount
  0.000

  Program Percentage of Total
  0.000

Student Demographic: Race/Ethnicity (IPEDs Classification)

- **American Indian: 45 - 0.480%**

  Program Headcount
  1.000

  Program Percentage of Total
  1.850

- **Asian: 3675 - 39.790%**

  Program Headcount
  20.000

  Program Percentage of Total
  37.040

- **Black or African American: 218 - 2.360%**

  Program Headcount
  2.000

  Program Percentage of Total
  3.700

- **Hawaiin/Pacific Islander: 38 - 0.410%**

  Program Headcount

2.000

Program Percentage of Total
3.700

- **Hispanic: 3650 - 39.500%**

  Program Headcount
  16.000

  Program Percentage of Total
  29.630

- **Two or More Races: 245 - 2.650%**

  Program Headcount
  2.000

  Program Percentage of Total
  3.700

- **Unknown: 773 - 8.390%**

  Program Headcount
  5.000

  Program Percentage of Total
  9.260

- **White: 591 - 6.420%**

  Program Headcount
  6.000

  Program Percentage of Total
  11.110

- **a. Based on the program total headcount and percent change year to year, discuss if your program growing or declining. If so, what do you attribute these changes in enrollment to and what changes will the program implement to address them?**

  No year-to-year data is provided. Therefore, it cannot be concluded if the program is in decline or incline. The data provided is the average in six years. There is no previous program review to compare headcount numbers with in a 6 year period.

- **b. Discuss any gaps have you identified in your program. Discuss how your program enrollment is similar or different from the campus. Discuss which gender, age, and/or ethnic group are proportionally smaller than campus make up.**

  One gap that is visible is the headcount of 18-24 year old students. The department has a plan to go and visit the top 3 high schools that have a high CADD headcount, and attract them to complete a certificate at EVC. Unfortunately, the CADD program is different in terms of age and gender, because typically the CADD design and drafting disciplines has traditionally been male dominant. The age difference should be similar to EVC's. Therefore, the efforts will be in recruiting high school students with a focus on recruiting female students. In terms of race, the numbers are similar and in all cases, except in the Hispanic race, the numbers are slightly higher. Focus will be given to recruiting more Hispanics to the CADD program.

- **c. Discuss what interventions the program can implement to address any gaps in enrollment.**

  The interventions the program will implement to decrease the enrollment gap are;

  1) recruiting high school students,

2) recruiting females, and

3) recruiting Hispanics.

Institutional Effectiveness (5 year average, see Summary Tab)

EVC Capacity: 62.49% EVC Productivity: 14.72

Program Capacity
35.94

Program Productivity
10.48

Is your capacity rate higher or lower then the campus?
Lower

Is your productivity goal higher or lower than the campus?
Lower

If the program capacity and/or productivity is lower than the campus, please provide rationale:
The department capacity is running lower than EVC by 27%. I believe it's because of the lack of instructors to teach classes.
Now that we have a full-time faculty, the capacity will increase and shorten the capacity gap. The capacity for part-time
teachers is 0.67 full load and, by only having one part-time faculty teaching classes for the last couple of years, it is impossible
to run at full capacity.

Curriculum

Related Assessments

Courses with no Degree or Certification

- **1. Identify and updates to curriculum since the last comprehensive program review, including and new
  programs and indicate the 6-year timeline for scheduled course outline revision. For CTE, the time line is 2
  year.**

  There is no previous curriculum comprehensive review. This will be the first curriculum update, comprehensive
  program review ever conducted. The curriculum is not up to date. The curriculum is non-noncompliant. Many
  courses needed in the certificates and degree have not been thought of and some courses have been de-activated.
  Every change in curriculum has been allowed to be implemented without a comprehensive program review since the
  inception of the CADD program.

  The new CADD Program will be as below:

Course	Title	MMC	MDD	PDD	ASD
CADD 130	Fundamentals of AutoCAD	x	x	x	x
CADD 131	3-D Modeling and Design – Using AutoCAD	x			x
CADD 133*	Fundamentals of Autodesk Inventor	x	x	x	x
CADD 139*	Using SolidWorks	x	x	x	x
CADD 134	Advanced Autodesk Inventor -> Advanced CAD Modeling – Using CAD tools	x	x		x
CADD 140A	Technical Graphics – Using CAD tools	x	x		x
CADD 141	Design and Analysis Using Creo or SolidWorks -> Introduction to Product Design (IED, PLTW)		x	x	x

CADD 142	Geometric Dimensioning and tolerancing		x	x	x
CADD 153	Principles of Product Design (New, POE from PLTW)			x	x
CADD 156	Product Design Development (New, EDD from PLTW)			x	x
	Total Units	15	18	20	35

2-year plan:

FALL (Yr. 1)	SPRING (Yr. 1)	FALL (Yr. 2)	SPRING (Yr. 2)
CADD 130	CADD 131	CADD 130	CADD 131
CADD 133 or CADD 139	CADD 133 or CADD 139	CADD 133 or CADD 139	CADD 133 or CADD 139
CADD 140A	CADD 134	CADD 140A	CADD 134
	CADD 142		CADD 142
CADD 141	CADD 153	CADD 156	

The CADD department's new goal is to implement changes in the curriculum to make new certificates and revive AS degrees to be in compliance. This will be achieved by updating all CADD courses.

List of all the historical and active courses.

Deactivate courses;

1) ADD 010 - Basic Drawing (Historical) (https://evc.curricunet.com/Form/Course/Index/2215)

2) CADD 098 - Directed Study in Computer Aided Design and Drafting (Historical) (https://evc.curricunet.com/Form/Course/Index/2216)

3) CADD 100 - 2D Mechanical CADD (Historical) (https://evc.curricunet.com/Form/Course/Index/2217)

4) CADD 101 - Electronic CADD (Historical) (https://evc.curricunet.com/Form/Course/Index/2218)

5) CADD 102 - Analog P.C. CADD (Historical) (https://evc.curricunet.com/Form/Course/Index/2219)

6) CADD 103 - Digital P.C. CADD (Historical) (https://evc.curricunet.com/Form/Course/Index/2220)

7) CADD 128 - Computer Graphic Arts (Historical) (https://evc.curricunet.com/Form/Course/Index/2221)

8) CADD 130 - Fundamentals of AutoCAD (Active) (https://evc.curricunet.com/Form/Course/Index/4414)

9) CADD 131 - 3-D Modeling and Design - Using AutoCAD (Active) (https://evc.curricunet.com/Form/Course/Index/4415)

10) CADD 132 - Using AutoCAD Mechanical (Active) (https://evc.curricunet.com/Form/Course/Index/2943)

11) CADD 133 - Fundamentals of Autodesk Inventor (Active) (https://evc.curricunet.com/Form/Course/Index/4311)

12) CADD 134 - Advanced Autodesk Inventor (Active) (https://evc.curricunet.com/Form/Course/Index/3209)

13) CADD 135 - Design Using AutoCAD Civil-3D (Active) (https://evc.curricunet.com/Form/Course/Index/2227)

14) CADD 136 - CADD Occupational Work Experience-Parallel Plan (Historical) (https://evc.curricunet.com/Form/Course/Index/2228)

15) CADD 136A - Fundamentals of Creo (Active) (https://evc.curricunet.com/Form/Course/Index/4413)

16) CADD 136B - Advanced Creo (Active) (https://evc.curricunet.com/Form/Course/Index/3213)

17) CADD 138 - Work Experience (Active) (https://evc.curricunet.com/Form/Course/Index/2722)

18) CADD 139 - Using Solidworks (Active) (https://evc.curricunet.com/Form/Course/Index/4433)

19) CADD 140 - Mechanical CADD Applications - Detail and Assembly Drawings (Historical) (https://evc.curricunet.com/Form/Course/Index/2231)

20) CADD 140A - Technical Graphics - Using CAD Tools (Active) (https://evc.curricunet.com/Form/Course/Index/2922)

21) CADD 140B - Advanced Technical Graphics - Using CAD Tools (Active) (https://evc.curricunet.com/Form/Course/Index/4420)

22) CADD 141 - Design and Analysis Using Creo or SolidWorks (Active) (https://evc.curricunet.com/Form/Course/Index/2944)

23) CADD 142 - Geometrical Dimensioning and Tolerancing (Active) (https://evc.curricunet.com/Form/Course/Index/3113)

24) CADD 143 - Computer Aided Design and Drafting Product Data Management (Historical) (https://evc.curricunet.com/Form/Course/Index/2236)

25) CADD 144A - Architectural Design and Drafting Using Revit Architecture (Active) (https://evc.curricunet.com/Form/Course/Index/2237)

26) CADD 144B - Architectural Design and Drafting Using Revit Structure and MEP (Active) (https://evc.curricunet.com/Form/Course/Index/2238)

27) CADD 145 - Landscaping Design Using CAD Tools (Active) (https://evc.curricunet.com/Form/Course/Index/2239)

28) CADD 146A - AutoCAD Software Updates (Active) (https://evc.curricunet.com/Form/Course/Index/2680)

29) CADD 146B - Inventor Software Updates (Active) (https://evc.curricunet.com/Form/Course/Index/2241)

30) CADD 146C - Solidworks Software Updates (Active) (https://evc.curricunet.com/Form/Course/Index/2242)

31) CADD 150 - CADD Document Management (Historical) (https://evc.curricunet.com/Form/Course/Index/2243)

32) CADD 210 - CADD Supervised Skills Lab (Historical) (https://evc.curricunet.com/Form/Course/Index/2244)

- **2. Identify all the courses offered in the program and describe how these courses remain relevant in the discipline. For courses your program has not offered in the past two years, please discuss a plan on how to deal with these courses (if your program is not going to de-activate these courses, please explain why).**

  All active (20) courses in the program:

  8) CADD 130 - Fundamentals of AutoCAD (Active) (https://evc.curricunet.com/Form/Course/Index/4414)

  9) CADD 131 - 3-D Modeling and Design - Using AutoCAD (Active) (https://evc.curricunet.com/Form/Course/Index/4415)

  There are two 3D modeling techniques; Direct Modeling and Parametric Modeling. The industry has been moving towards parametric modeling in the past decade. AutoCad 3D is fading away and it is best for students to transition to parametric modeling for better job offers.

  10) CADD 132 - Using AutoCAD Mechanical (Active) (https://evc.curricunet.com/Form/Course/Index/2943)

  Has not been taught in the past 2 years. AutoCAD Mechanical is also in the direct modeling realm, specifically in mechanical design. The future is in parametric modeling. Parametric modeling updates and is more efficient in the design process. Software like Inventor, Solidworks and Creo are better courses to teach, especially with limited faculty.

11) CADD 133 - Fundamentals of Autodesk Inventor (Active) (https://evc.curricunet.com/Form/Course/Index/4311)

12) CADD 134 - Advanced Autodesk Inventor (Active) (https://evc.curricunet.com/Form/Course/Index/3209)

13) CADD 135 - Design Using AutoCAD Civil-3D (Active) (https://evc.curricunet.com/Form/Course/Index/2227)

Has not been taught in the past 2 years. AutoCAD Civil 3D is Direct modeling software for the Civil Engineering field. It is still well accepted in industry, but there is no faculty to teach. Civil, Structure and Architectural fields use next generation software like Revit in the BIM category.

15) CADD 136A - Fundamentals of Creo (Active) (https://evc.curricunet.com/Form/Course/Index/4413)

16) CADD 136B - Advanced Creo (Active) (https://evc.curricunet.com/Form/Course/Index/3213)

17) CADD 138 - Work Experience (Active) (https://evc.curricunet.com/Form/Course/Index/2722)

Has not been taught in the past 2 years. It is the department's view to not keep students in school if the student has been transitioned to the workforce. The department will track student employment in other ways.

18) CADD 139 - Using Solidworks (Active) (https://evc.curricunet.com/Form/Course/Index/4433)

20) CADD 140A - Technical Graphics - Using CAD Tools (Active) (https://evc.curricunet.com/Form/Course/Index/2922)

Has not been taught in the past 2 years. This course is a drafting course that had very good value in the past. Having this type of drafting experience is good, but is fading away in the industry. This drafting information can be implemented within the parametric modeling software courses.

21) CADD 140B - Advanced Technical Graphics - Using CAD Tools (Active) (https://evc.curricunet.com/Form/Course/Index/4420)

Has not been taught in the past 2 years. This course is a drafting course that had very good value in the past. Having this type of drafting experience is good, but is fading away in the industry. This drafting information can be implemented within the advanced parametric modeling software courses.

22) CADD 141 - Design and Analysis Using Creo or SolidWorks (Active) (https://evc.curricunet.com/Form/Course/Index/2944)

CADD 141 - Introduction to Product Design (rename)

The name change is for brand recruitment purposes. The CADD department brand will transition from Drafting to Design. The CADD program is heavily invested in drafting skills which are in decline, but will refocus on the Design aspect, which is growing in start-up companies and industry. The drafting skills will be embedded within the SLO and course projects.

23) CADD 142 - Geometrical Dimensioning and Tolerancing (Active) (https://evc.curricunet.com/Form/Course/Index/3113)

25) CADD 144A - Architectural Design and Drafting Using Revit Architecture (Active) (https://evc.curricunet.com/Form/Course/Index/2237)

Has not been taught in the past 2 years. A similar course is offered in the BIM program. Not enough faculty to teach.

26) CADD 144B - Architectural Design and Drafting Using Revit Structure and MEP (Active) (https://evc.curricunet.com/Form/Course/Index/2238)

Has not been taught in the past 2 years. A similar course is offered in the BIM program. Not enough faculty to teach.

27) CADD 145 - Landscaping Design Using CAD Tools (Active) (https://evc.curricunet.com/Form/Course/Index/2239)

Has not been taught in the past 2 years. Not enough faculty to teach. Direct modeling in Architectural related-field is moving towards REVIT (BIM).

28) CADD 146A - AutoCAD Software Updates (Active) (https://evc.curricunet.com/Form/Course/Index/2680)

Has not been taught since being introduced to the program. Not enough faculty to teach.   Software updates are not needed. Installing newer software versions and updating textbooks will take care of software updates.

29) CADD 146B - Inventor Software Updates (Active) (https://evc.curricunet.com/Form/Course/Index/2241)

Has not been taught since being introduced to the program. Not enough faculty to teach.   Software updates are not needed. Installing newer software versions and updating textbooks will take care of software updates.

30) CADD 146C - Solidworks Software Updates (Active) (https://evc.curricunet.com/Form/Course/Index/2242)

Has not been taught since being introduced to the program. Not enough faculty to teach.   Software updates are not needed. Installing newer software versions and updating textbooks will take care of software updates.

- **3. If you have a degree or certificate, please include a diagram of your program's guided pathways program map. (A program map indicates courses suggested for each semester, across two years, upon completion a student would qualify for a degree/certificate).**

CADD course list needed for AS degree

Year 1

Fall:

CADD 130 Fundamentals of AutoCAD

CADD 133 Using Autodesk Inventor

CADD 139 Using SolidWorks

Spring:

CADD 131 3D modeling and Design using AutoCAD

CADD 140A Technical Graphics - Using CAD tools

CADD 141 Design and Analysis Using Creo or SolidWorks

Year 2

FAll:

CADD 144A Architectural Design and Drafting Using Revit Architecture

CADD 140B Advanced Technical Graphics - Using CAD tools

Spring:

Plus 12 units from the following:

CADD 132 Using AutoCAD Mechanical CADD

CADD 134 Advanced Autodesk Inventor

CADD 135 Design Using AutoCAD Civil-3D

CADD 142 Geometrical Dimensioning and Tolerancing

CADD 144B Architectural Design and Drafting Using Revit Structure and MEP

CADD 145 Landscaping Design Using CAD Tools

CADD 146A AutoCAD Software Updates

CADD 150 CADD Document Management

- **4. Identify and describe innovative strategies or pedagogy your department/program developed/offered to maximize student learning and success. How did they impact student learning and success?**

  Most of the courses in this degree have not been thought of in the past 2 years. Strategies and Pedagogies taught in the courses taught recently implemented direct instruction and independent study. These approaches to learning CADD have been somewhat effective, but the department believes moving into Design and implementation of other pedagogues is crucial for student learning. For the student to be workforce ready in these times, the department will implement phenomenon-based, problem-project-based and inquiry-based learning.

- **5. Discuss plans for future curricular development and/or program degrees & certificates included) modification.**

  (Proposed,New) CADD course list needed for AS degree

  Year 1

  Fall:

  CADD 130 Fundamentals of AutoCAD

  CADD 133 Using Autodesk Inventor

  CADD 136A Fundamental of Creo or

  CADD 139 Using SolidWorks

  Spring:

  CADD 134 Advanced with Inventor or **CADD 139B Advanced with Solidworks (NEW)**

  CADD 141 Intro to Product Design (NEW)

  CADD 142 GD&T or **CADD 147 3D Printing (NEW)**

  Year 2

  FAll:

  CADD 134 Advanced with Inventor or **CADD 139B Advanced with Solidworks (NEW)**

  CADD 136B Advanced with Creo

  CADD 153 Principles of Product Design (NEW)

  Spring:

  CADD 142 GD&T or **CADD 147 3D Printing (NEW)**

  CADD 156 Product Design and Development (NEW)

- **6. Describe how your program is articulated with High School Districts, and/or other four year institutions. (Include articulation agreements, CID, ADTs...)**

  Currently, the program is not articulated with any high schools. The CADD department is in the planning stages to introduce Project Lead The Way (PLTW) courses (NEW department courses) within the design curriculum that is well known at the high school and college level. The PLTW courses will be adjusted to focus student learning in the Product Design skill set and have Drafting concepts as an foundation. PLTW is a curriculum that is Problem-Project

based learning, and will equip the student with skills that tech and engineering companies look for. The PLTW curriculum was developed by industry engineers and has been rapidly been adopted by High schools across the United States.

- **7. If external accreditation or certification is required, please state the certifying agency and status of the program.**

  No external accreditation needed. PLTW curriculum has been accepted in other community colleges across California. EVC will be one of the firstcommunity colleges in the silicon area, this change in curriculum and program will attract high school students around the area.

Student Learning Outcome and Assessment

Related Assessments

Student Learning Outcomes

Program Learning Outcomes

- **1. On the program level, defined as a course of study leading to degree or certificate, list the Program Learning Outcomes (PLOs), and how they relate to the GE/ILOs (http://www.evc.edu/discover-evc/student-learning-outcomes-%28slos%29 (http://www.evc.edu/discover-evc/student-learning-outcomes-%28slos%29)). Please also indicate how the course SLOs have been mapped to the PLOs. If you are completing this program review as a department or discipline and do not offer any degrees or certificates, please write N/A in this space.**

  PLOs:

  Demonstrate knowledge of AutoDesk products (Inventor, AutoCAD/ Mechanical/ Civil 3D, and Revit), Creo, and Solidworks CAD systems.

  Prepare for employment as an engineering technician/ CAD drafter, in architectural engineering or in civil engineering and design at an entry level.

  ILOs:

  Communication:

  The student will demonstrate effective communication, appropriate to the audience and purpose.

  - Group projects will be implemented in the future where students will be able to demonstrate learning of nomenclature in their presentations.

  Inquiry and Reasoning:

  The student will critically evaluate information to interpret ideas and solve problems.

  - The student is given a set of problems to solve using CAD software. Typically, there are at least 12 assignments during the semester and each has multiple CAD modeling and word problems to complete.

  Information Competency:

  The student will utilize information from a variety of sources to make an informed decision and take action.

  - The student utilizes the textbook and the web to gather information to complete the CAD modeling problems at hand. The CAD software has a very good resource / search option that provides many tutorials and step-bystep exercises for the student to follow.

  Social Responsibility:

The student will demonstrate effective interpersonal skills with people of diverse backgrounds and effectively function in group decision making.

- Group projects will be implemented in the future where students will be able to demonstrate learning in a collaborative fashion.

Personal Development:

The student will demonstrate growth and self management to promote life-long learning and personal well-being.

- The department will be establishing soft skills (9 pillars) used in Fortune 500 companies in each course:

and one of the pillars is Kaisen, which means to continually improve a product, process, or daily task.

SLO's have been mapped to PLO's in a direct way. All the courses in the CADD program teach software indicated in the PLO, like Autodesk AutoCAD, Inventor, Solidworks, Creo. The specific SLO's in these courses focus in attaining CADD skills like creating solid modeling parts, drawings, and assemblies using the above mentioned software. These skills are required to have basic training and students to be able to get an entry level drafter, designer position.

SLO's:

Create 3D solid parts using CAD software

Create drawing packages for solid parts using CAD software

Create Assembly of solid parts using CAD software

Learn and implement Drafting Standards for drawing of solid parts using CAD software

Learn and implement geometric dimensioning and tolerancing for drawings of solid parts using CAD software

Learn basic design principles for products and parts

All of these SLOs equip the student to attain skills that will allow them to get an entry level position in drafting and design. The CADD program will have several certificates and an AS degree where all these SLOs are implemented in the required courses. The SLO's are mapped to the PLOs as described above, demonstrating CAD software knowledge, and acquiring skills to prepare for employment.

- **2. Since your last program review, summarize SLO assessment activities and results at the course and program level. Please include dialogue regarding SLO Assessment results with division/department/college colleagues and/or GE areas. Provide evidence of the dialogue (i.e. department meeting minutes or division meeting minutes, etc.) Your program review will not be approved unless every SLO for every course in your program, and every PLO (if your program has a degree or certificate) is complete and approved by EVC's SLO Coordinator. All SLOs and PLOs must be assessed every two years.**

No program review has ever been conducted. I have taken the initiative to streamline the SLOS for each course. The department has met a couple of times to discuss SLOs and a presentation was created to explain new SLOs. Adjunct faculty agrees with the new SLOs. Meeting minutes will be conducted from now on.

ALL courses have been reported for SLO compliance and report last semester (FALL 2021) per EVC deadlines and SLO targets.

- **3. What plans for improvement have been implemented to your courses or program as a result of SLO assessment? Please share one or two success stories about the impacts of SLO assessment on student learning.**

All of the courses will have between 3-5 maximum SLOs that focus on the most important ideas the student should gain after completing the course. The SLOs for all introductory CAD courses will be the same as the only difference is the software being learned. The skills should be the same as the industry has the same standards in design and drafting but different companies utilize different software.

Faculty and Staff

Part D: Faculty and Staff

- **1. List current faculty and staff members in the program, areas of expertise, and describe how their positions contribute to the success of the program.**

  Faculty and Staff: John Hitchcock and Manuel Rosas

  Part-time faculty: John Hitchcock

  The area of expertise is in the professional engineering , CADD design and manufacturing industry.

  Areas of expertise: Computer software and drafting, Distance Education

  CADD 130, AutoCAD

  CADD 131, 3D AutoCAD

  CADD 136, Creo

  CADD 139, SolidWorks

  CADD 142, GD&T

  Full-time faculty: Manuel Rosas

  Areas of expertise are in the CADD, Design and Automotive Industry. Course development and student-centered pedagogy.

  Areas of expertise: Computer software, 3D printing, drafting and design, curriculum development, SLO assessment and Project-Based Learning Pedagogy.

  CADD 130, AutoCAD

  CADD 131, 3D AutoCAD

  CADD 136, Creo

  CADD 139, SolidWorks

  CADD 142, GD&T

  CADD 133, Inventor

  New Design courses though Project Lead The Way engineering design curriculum

- **2. In addition to major professional development activities completed by faculty and staff in the past, in particular with regards to students' success, equity, distance education, SLO assessment, guided pathways and/or innovative teaching/learning strategies, are there any additional professional development needs of your department in the future? What are they? Please provide details about a timeline.**

Yes, further professional development is needed in regards to being certified to teach the PLTW Product Design and Development class. Also, a 3D printed course needs to be taken by faculty to provide an up-to-date product development pathway for students. New learning strategies will be acquired by faculty after taking the PLTW course, utilizing a problem-project based learning approach to learning.

Faculty needs to be trained in the spring semester or Fall semester so the new Product Development certificate can roll out in the 2022-23 school year.

Budget Planning

Part E: Budget Planning

- **1. With your Dean, review the department Fund 10 budget (operational budget) and discuss the adequacy of the budget in meeting the program's needs.**

  A meeting will be conducted to review the department's Fund 10 budget and discuss the programs' needs.

  Emails have been exchanged in regards to program needs, faculty training, PLTW fees, . .   Will continue to discuss with department dean.

- **2. List all external funds, i.e. fund 17, the department/program receives, and describe their primary use.**

  Will investigate and report

Technology and Equipment

Part F: Technology and Equipment

- **Review the current department technology and equipment needed and assess program adequacy. List and changes to technology or equipment since the last program review. If changes were made please indicate how the change impacted student success.**

  The equipment in the department is adequate for the program. No previous program review is available but the computers were updated with the latest video cards and memory to be able to run the various CAD software.

  The video and memory upgrades impacted the students in a very important way; an increase in computer response time. The computers would freeze and shut down often because of the software demands in the computer. Students would lose their work upon shutting down not giving an opportunity to save their work.

Additional Information

Part G: Additional Information

- **Please provide any other pertinent information about the program that these questions did not give you an opportunity to answer.**

  PLTW course training and yearly fees.

  https://sjeccd-my.sharepoint.com/:b:/g/personal/manuel_rosas_evc_edu/EQGtrhs0RXtlnBhSvrxfL_8BNhzTABfgRq8w1kVPwZYzog?e=1Kio98 (https://sjeccd-my.sharepoint.com/:b:/g/personal/manuel_rosas_evc_edu/EQGtrhs0RXtlnBhSvrxfL_8BNhzTABfgRq8w1kVPwZYzog?e=1Kio98)

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my.sharepoint.com/:b:/g/personal/manuel_rosas_evc_edu/EaEpdnJH9edOhqFEcgu_PFQBhRm2G0vkOYvhpMZrNoUlFQ?
e=KwjujC)

PLTW list of courses: (only need training for EDD) faculty is certified for IED and POE.

https://drive.google.com/file/d/1DkOUflfVHn7Zb4uk_8iwiLfFcdDtrKVF/view?usp=sharing
(https://drive.google.com/file/d/1DkOUflfVHn7Zb4uk_8iwiLfFcdDtrKVF/view?usp=sharing)

PLTW Equipment: (for group project, design projects, teamwork and design skills needed in various industries)

https://drive.google.com/file/d/1DkOUflfVHn7Zb4uk_8iwiLfFcdDtrKVF/view?usp=sharing
(https://drive.google.com/file/d/1DkOUflfVHn7Zb4uk_8iwiLfFcdDtrKVF/view?usp=sharing)

Future Needs and Resource Allocation Request

Based on the areas noted below, please indicate any unmet needs for the program to maintain or build over the next six years.
Please provide rationale on how the request connects back to SLO/PLO assessment, strategic initiatives or student success. If no
additional requests are needed in any of the areas, put N/A.

1. **Equipment/Supplies**

   Ongoing Budget Needs
   5600

   One-Time Expenditure
   10000

   Request linked to SLO/PLO #

   Total Cost
   15600.000

   Strategic Initiatives (student centered, organizational transformation, community engagement)
   No

   Improving Student success rates
   No

   Achievement of program set standard for student success
   Yes

Attach Files

Attached File

IEC Reviewers

IEC Mentor
Judith Girardi

IEC Second Reader
Fahmida Fakhruddin