DIGITAL DESIGN GRAPHICS TECHNOLOGY

Summary of Program Review:

A. Major Findings

   1. Strengths:

   - Program is on a path of growth with enrollment up.
   - All classes have been successfully held over the last PEP cycle including the Architectural courses DDGT230 and DDGT231.
   - New technologies including 3D Printing, 3D Scanning, Augmented Reality, and CNC Machining, Robotics, and AI have been introduced into the program.
   - New 3D Printing and Robotics equipment is in the process of being added to the program.
   - Hy-Flex teaching modalities have been implemented in ALL DDGT courses.
   - All SLOs and PLOs have been assessed and are current.
   - Instructor performance and student satisfaction are high
   - Students have easy access to course recorded class lectures and materials
   - Instructors come from local industry and are certified on the programs they instruct

   2. Areas for Improvement:

   - Filling the DDGT Technician position that has been vacant for almost three years.
   - New lab computers as they are nine years old and counting. They can no longer meet the needs of the high demanding software we instruct on.
   - Add additional courses.
   - Increased representation of local businesses at Advisory Committees
   - The system in place to submit and grant Local Certificates of Achievement is lacking. The vast majority of certificates are submitted are never completed by administration.

   3. Projected Program Growth, Stability, or Viability:

   I'm hoping that the recent increase in enrollment over the last two years becomes the new norm for the DDGT program. Offering classes in Hy-Flex gives students the greatest flexibility with their schedules even though it leads to less student retention (Asynchronous students tend not to do as well as face-to-face students.)

   I plan on continuing outreach to the local high schools and still rely heavily on word of mouth. Over the next three years, I plan to add additional courses to meet student demand.

B. Program's Support of Institutional Mission and Goals

   1. Description of Alignment between Program and Institutional Mission:

   > The DDGT program is in the Career Technical Education (CTE) division providing cutting-edge technology and training to students preparing them for employment in local industries.
   >
   > As a regional Autodesk Training Center (ATC), we provide training in the latest release of multiple Autodesk software titles. All instructors in the program are certified with Autodesk on the programs they instruct on. Students earn industry recognized Autodesk Certificates of Training in all DDGT courses.

   2. Assessment of Program's Recent Contributions to Institutional Mission:

   > In addition to the DDGT AS Degree, the DDGT students have completed (or ready to submit):
   > - 10 Architectural Drafting and Design CoA
   > - 13 Mechanical Drafting and Design CoA
   >
   > As an Autodesk Training Center, in the last three years:
   > - 164 Autodesk Certificates of Completion were awarded

   3. Recent Program Activities Promoting the Goals of the Institutional Strategic Plan and Other Institutional Plans/Initiatives:

   > - The students in the DDGT program are creating an interactive online 3D Model of the Napa Valley College campus as well as a physically 3D Printed model of the campus. The proof-of-concept model can be seen here: https://sketchfab.com/3d-models/napa-valley-college-campus-270ee0a11c2341cfad526ea400a24af3
   > - DDGT has added new technologies into the program.

C. New Objectives/Goals:

   > - Keep requesting new computers to support students.
   > - Create additional courses to expand current course offerings and add new courses to offer training that is not currently available
   > - Include AI into the curriculum of classes where applicable.
   > - Create a one-year Local Skills Civil Drafting and Design Certificate of Achievement
   > - Continue to work with local high schools to spread general awareness of course offerings
   > - Reach out to local industries and companies to expand representation at advisory committees and to spread awareness of the program
   > - Long term (more than 3 years), if the DDGT department was to gain additional space, I could see adding additional physical designing equipment such as CNC Routers, Jewelry Making equipment (mini-foundry), etc. This would allow students to design on a computer and have actually made physically. In essence, our own maker space type lab.

D. Description of Process Used to Ensure "Inclusive Program Review"

   > The DDGT program is a one-person department (except for DDGT230 and DDGT231 which are only offered once every two-years.)

This report covers the following program, degrees, certificates, area(s) of study, and courses (based on the Taxonomy of Programs on file with the Office of Academic Affairs):

Program	Digital Design Graphics Technology
Degrees/Certificates	Architectural Drafting and Design: CoA Digital Design Graphic Technology: AS Digital Design Graphic Technology: CoA Mechanical Drafting and Design: CoA
Courses	DDGT 110
	DDGT 120
	DDGT 121
	DDGT 130
	DDGT 230
	DDGT 231
	DDGT 240
	DDGT 241

Taxonomy of Programs, July 2022

I. PROGRAM DATA

A. Demand

1. Headcount and Enrollment

	2021-2022	2022-2023	2023-2024	Change over 3-Year Period
Headcount				
Within the Program	44	41	64	45.5%
Across the Institution	6,653	6,161	6,473	-2.7%
Enrollment				
DDGT-110	23	16	18	-21.7%
DDGT-120	8	11	20	150%
DDGT-121	3	7	10	233%
DDGT-130	14	19	18	28.6%
DDGT-230	--	--	15	N/A
DDGT-231	--	--	13	N/A
DDGT-240	7	--	6	-14.3%
DDGT-241	7	3	5	-28.6%
Within the Program	62	56	105	69.4%
Across the Institution	25,216	23,488	24,913	-1.2%
Source: SQL Queries for Fall 2024 Program Review				

RPIE Analysis: The number of students enrolled (headcount) in the Digital Design Graphics Technology Program increased by 45.5% over the past three years, while headcount across the institution decreased by 2.7%. Enrollment within the Digital Design Graphics Technology Program increased by 69.4%, while enrollment across the institution decreased by 1.2% over the same period.

Enrollment in the following courses changed by more than 10% (±10%) between 2021-2022 and 2023-2024:

> *Courses with enrollment increases:*
> - *DDGT-121 (233%)*
> - *DDGT-120 (150%)*
> - *DDGT-130 (28.6%)*
>
> *Courses with enrollment decreases:*
> - *DDGT-241 (-28.6%)*
> - *DDGT-110 (-21.7%)*
> - *DDGT-240 (-14.3%)*

Program Reflection:

The enrollment numbers in the chart are not completely accurate. One reason example of this is reflected in the 2023-2024 academic year, two classes consisting of DDGT230 and DDGT231 were held, increasing the total number of students by 28. These classes were not held in the previous two years. That being said. Even if you were to remove those classes, we would still end up with 77 students in the 2023-2024 year with an increase of 15 students from the first year to the last. Please also note that this chart is really only comparing the first and third year and completely ignores the second year.

Enrollment in the DDGT program, just as in the rest of the college, comes in waves. Sometimes we have a couple years of really good enrollment and sometimes we have a couple of years of poor enrollment. The DDGT program is currently experiencing an upward trend with larger than average class sizes starting the two-year program. This increase is also being seen in the 2024-2025 academic year which this chart does not show.   I believe the increase is due to positive word-of-mouth spread of awareness of the program out to the community from current students as well as increased presentations to local high schools and the community.

2. **Average Class Size**

	2021-2022		2022-2023		2023-2024		Three-Year	
	Sections	Average Size	Sections	Average Size	Sections	Average Size	Average Section Size	Trend
DDGT-110	2	11.5	1	16.0	1	18.0	14.3	56.5%
DDGT-120/240	1	15.0	1	11.0	1	26.0	17.3	73.3%
DDGT-121/241	1	10.0	1	10.0	1	15.0	11.7	50.0%
DDGT-130	1	14.0	1	19.0	1	18.0	17.0	28.6%
DDGT-230	--	--	--	--	1	15.0	15.0	N/A
DDGT-231	--	--	--	--	1	13.0	13.0	N/A
Program Average*	5	12.4	4	14.0	6	17.5	14.9	41.1%
Institutional Average*	1,048	24.1	954	24.6	986	25.3	24.6	5.0%

Sources: SQL Queries for Fall 2024 Program Review for enrollment data and number of section offerings; Concurrent Section Reports to identify concurrent/cross-listed sections

Average Section Size across the three-year period for courses, and both within academic years and across the three-year period for the program and institutional levels is calculated as:

$$\frac{\text{Total \# Enrollments}}{\text{Total \# Sections}}$$

It is not the average of the three annual averages.

Notes regarding concurrent sections:
- o   For all three years, DDGT-120 and DDGT-240 are reported as one concurrent section (for the fall term).
- o   For all three years, DDGT-121 and DDGT-241 are reported as one concurrent section (for the spring term).

RPIE Analysis: Over the past three years, the Digital Design Graphics Technology Program has claimed an average of 14.9 students per section. The average class size in the program is lower than the average class size of 24.6 students per section across the institution during this period. Average class size in the program increased by 41.1% between 2021-2022 and 2023-2024. Average class size at the institutional level increased by 5.0% over the same period.

Average class size in the following courses changed by more than 10% (±10%) between 2021-2022 and 2023-2024:

> *Courses with increases in average class size:*
> - *DDGT-120/240 (73.1%)*
> - *DDGT-110 (56.5%)*
> - *DDGT-121/241 (50.0%)*
> - *DDGT-130 (28.6%)*

No Digital Design Graphics Technology courses experienced a decrease in average class size of at least 10% over the past three years.

Program Reflection:

As of the academic year 2022-2023, I was requested to reduce the number of class offerings per semester. We met this request by changing the number of times DDGT110 was offered. DDGT110 typically has been offered every semester (going back over 20 years). Currently, DDGT110 is only offered once a year in the Fall. Therefore, the number of students in the class has increased as there are fewer offerings. The class has been replaced by DDGT130 in the Spring term. DDGT230 and DDGT231 are typically only offered once every other year. Ideally, two classes on Civil Design could also be offered every other year to fill in the gap. (Architectural one year, Civil the next…)

I would also like to point out that there are limitations on the number of students that a class can support, typically no more than 20 students per class. This is due to a limitation of available computer stations. Additionally, there has also been a limitation of 15 students for DDGT130 (Intro to 3D Printing) as we only had one 3D Printer. (We have finally expanded printing capabilities as of Spring 2025.) With multiple printing projects per student, it has been difficult to keep up with all the physical printing of the projects.

The program is looking to add new additional classes but I have concerns if there will be an opportunity to offer them due to current restrictions and budgetary concerns by the administration in place.

3. **Fill Rate and Productivity**

Fill Rate			
	Enrollments	Capacity	Fill Rate
2021-2022	62	110	56.4%
2022-2023	56	80	70.0%
2023-2024	105	125	84.0%
Three-Year Program Total	**223**	**315**	**70.8%**
Productivity			
	FTES	FTEF	Productivity
2021-2022	14.2	3.0	4.7
2022-2023	18.2	2.7	6.7
2023-2024	35.6	3.9	9.1
Three-Year Program Total	**68.0**	**9.6**	**7.1**
Sources: SQL Queries for Fall 2024 Program Review; SQL Server Reporting Services – Term to Term Enrollment FTES Load Comparison Report (by Credit Course)			

RPIE Analysis: Between 2021-2022 and 2023-2024, the fill rate within the Digital Design Graphics Technology Program ranged from 56.4% to 84.0%. [The fill rate has not been calculated at the institutional level.] The program-level rate across the three-year period was 70.8%. Between 2021-2022 and 2022-2023, both enrollment and capacity decreased, resulting in an increase in fill rate (due to a higher rate of decrease in capacity). Between 2022-2023 and 2023-2024, both enrollment and capacity increased, resulting in an increase in fill rate (due to a higher rate of increase in enrollment).

Productivity within the Digital Design Graphics Technology Program ranged from 4.7 to 9.1 over the past three years. [Productivity has not been calculated at the institutional level.] The three-year productivity of 7.1 is lower than the target level of 17.5, which reflects 1 FTEF (full-time equivalent faculty) accounting for 17.5 FTES (full-time equivalent students) across the academic year. (This target reflects 525 weekly student contact hours for one full-time student across the academic year.)

Program Reflection:

Capacity is based on available resources. There are limitations on the number of students that a class can support, typically no more than 20 students per class. This is due to a limitation of computer stations. Additionally, there has also been a limitation of 15 students for DDGT130 (Intro to 3D Printing) as we only had one 3D Printer. (We have finally expanded printing capabilities as of Spring 2025.) With multiple printing projects per student, it is difficult to keep up with all the physical printing of the projects. I will also add that our computer lab is spread across two rooms so we have 21 student computers stations in one room and 7 in the other.

In the last PEP report, we were requesting additional computer stations so we could increase the number of student in our classes. Offering classes in Hy-Flex modality has helped deal with computer limitations as we have many students who prefer to attend from home, come in person with their own laptop, or attend asynchronously. Therefore, there is no longer a need for additional computers but there is a need for newer computers. Ours are currently 9 years old.

DDGT program is moving closer to target levels.

4. Labor Market Demand

Economic Development Department Standard Occupational Classification Description Codes: 17-3011, 17-3013, 17-3019, and 27-1014	Numeric Change in Employment (Baseline Year to Projected Year)	Projected Growth (% Change in Positions; 2020 Base Employment vs. 2030 Projected Employment)	Projected Number of Positions (Total Job Openings)
Napa County (2020-2030)	10	25.0%	50
Bay Area^A (2020-2030)	820	8.3%	10,800
California (2020-2030)	3,200	5.9%	54,460
Source: Economic Development Department Labor Market Information, Long Term Projections (Ten Years), Occupational Projections (http://www.labormarketinfo.edd.ca.gov) *^{A}Bay Area counties include: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. Figures also include San Benito County (reported with projections for Santa Clara County).*			

RPIE Analysis: The figures reported in the table above pertain to the Standard Occupational Classification for the following positions:

- *Architectural and Civil Drafters (17-3011)*
- *Mechanical Drafters (17-3013)*
- *Drafters, All Other (17-3019)*
- *Special Effects Artists and Animators/Multimedia Artists and Animators (27-1014)*

The Economic Development Department projects that the number of positions within Napa County will increase by 25% (10 positions) between 2020 and 2030. The increase in Napa County exceeds the increases anticipated in the Bay Area and across the state. The number of positions in the Bay Area (not including Napa County) is expected to increase by 8.3% (820 positions) between 2020 and 2030.

Program Reflection:

The DDGT program has always prided itself on the variety of skills that are taught throughout the two-year program. The DDGT program has always been more than just "drafting" and I have often referred to it as design and visualization. At the core, the DDGT program is also an Autodesk Training Center (ATC) which allows us to teach students the latest release of industry standard Computer Aided Design (CAD) software including AutoCAD, Inventor, Fusion 360, Revit, and 3ds Max. AutoCAD is a versatile program used in many industries and companies worldwide. Inventor and Fusion 360 are for 3D Mechanical Design. Revit is for Architectural Design. Inventor, Fusion 360, and Revit all work in a Parametric Environment meaning the parts "know" about each other and as you update the design, those changes "trickle" out and update the rest of the project. 3ds Max is a visualization program allowing you to take your designs from the previously mentioned software programs and create photo-realistic 3D Animations and videos for clients, permits, marketing, investors, and more.

As an ATC, we also have the ability to offer certified training in the Autodesk programs. All of our DDGT instructors are certified and all of our courses incorporate an Autodesk Certificate of Completion as follows:

DDGT110 – AutoCAD Fundamentals
DDGT120 – AutoCAD Fundamentals
DDGT121 – Inventor Introduction to Solid Modeling
DDGT130 – Fusion 360 Fundamentals
DDGT230 – Revit Architecture
DDGT231 – Revit Conceptual Design & Visualization
DDGT240 – 3ds Max Fundamentals
DDGT241 – AutoCAD Advanced

Note: If you were to go and receive this training at other ATC's, you would be charged over $1,000 per title and we only charge the students a fee of $125 to cover the cost of the materials. Upon completion of the AS Degree, a student can have five or six certifications completed. Since this is done through Autodesk and not through the Napa Valley College, NVC does not have the following information. In the
the last three years:
164 Autodesk Certificates of Completion were awarded.

The DDGT program also incorporates multiple Adobe programs including Photoshop, Dreamweaver, Premiere, and After Effects. Photoshop is a graphical editor where you can create and modify graphics. We teach it in a technical way but it can also be used artistically. Dreamweaver allows you to create websites. All students who go through the two-year program create and maintain a professional level portfolio which we host for free. Students have received job offers based on their websites. Premiere is a video editor so students can create professional level mechanical animations showcasing assembly and functionality of their designs. After Effects is a compositor that allows students to add special effects to their animation such as fire and water for added realism.

The DDGT program also incorporates additional technologies including:
- o 3D Printing
- o 3D Scanning and point cloud data
- o Microsoft Hololenses and Augmented Reality
- o Computer Numerical Control (CNC) 5-Axis control with Machine Tool
- o Raspberry Pi and Python coding to control linear actuators, motors, etc. for robotics
- o And we will be introducing the addition of AI in design starting in Spring 2025

The DDGT program has been using 3D Printing in the program for over twenty years. Some assignments are 3D Printed to help students visualize 3D data from 2D design. Other assignments are printed and students must "reverse engineer" drawings based on the physical model – a skill that is frequently utilized in the industry. Students are also taught how to make their own designs and 3D Print parts and assemblies – skills that are not as easy as they sound. Part orientation, thicknesses, tolerances, clearances, materials, and costs are just some of the design considerations.
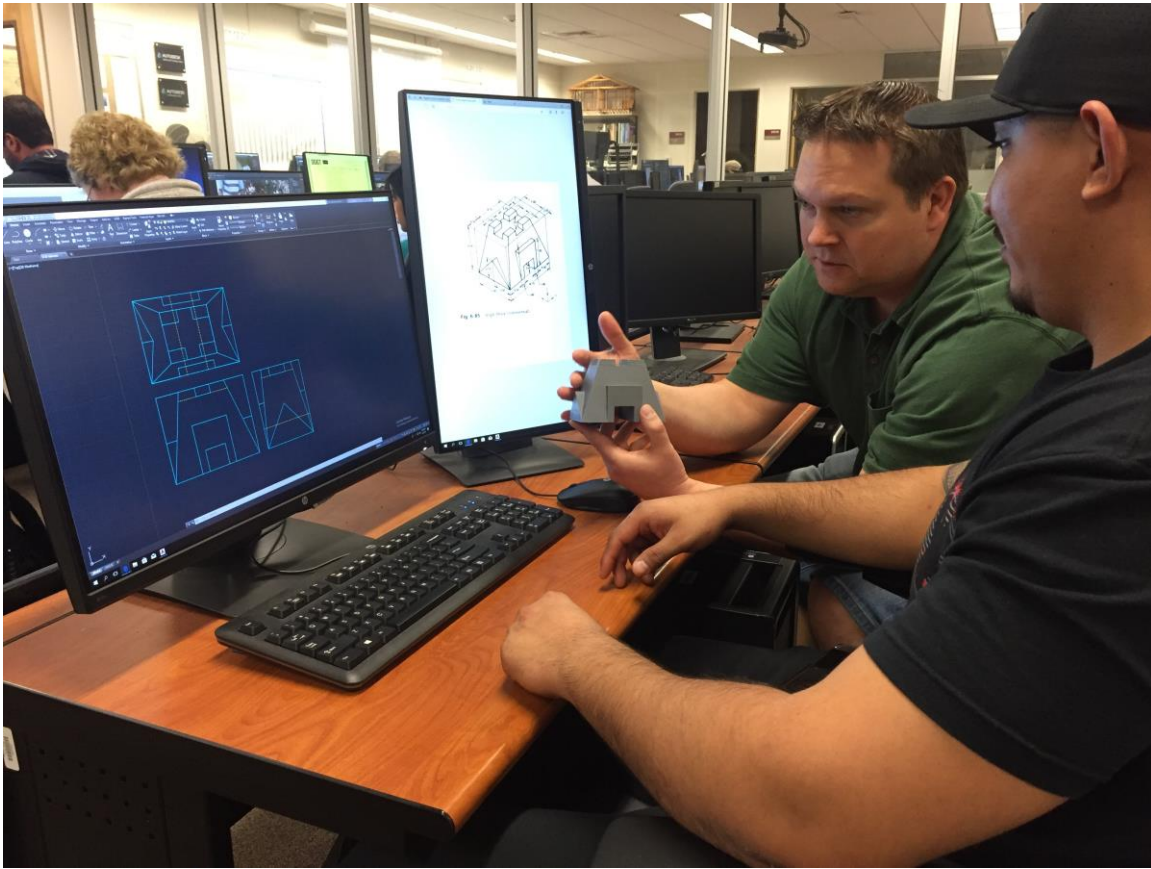
This image showcases the instructor helping a student create 2D Orthographic views (left monitor) from a 3D view (right monitor) using a 3D Printed model of the part.

The DDGT program has a 3D Scanner by Trimble and is used in combination with the Real Works software. 3D Scanning uses a laser to create millions of points in a 3D Environment that can be overlayed over your own design to check for clearances between the real-world environment and your digital design and also allows you to gather data for analysis. This is used for mechanical design, architecture, forensics, and more. Industry is using these skills on an increasing basis. We are currently creating a one-year Civil Drafting and Design CoA that will also incorporate the 3D Scanning. We are currently using the 3D Scanner to "reverse engineer" the campus. We are scanning all the buildings on the campus one at a time and the students are modeling the buildings digitally.

*Here is an image of point cloud data of the South end of campus.*

Here is an image of the point cloud data stripped of everything except the DDGT building.

This has become an annual project where the new students come in and pick up where the last class left off.

Augmented Reality is where you can super impose interactive 3d holograms over the real world. Users can interact with the model, move it, rotate it, "walk through it" and more in the real world! We are currently using this in the final semester of the program. Students take one of their architectural buildings of the campus and turn it into an interactive hologram.

When a user is viewing through the Hololens, it can be broadcast to the instructor display so everyone can see what the user sees. This is a screen capture of a user viewing the DDGT building as a hologram. This model does not include materials but future models will.
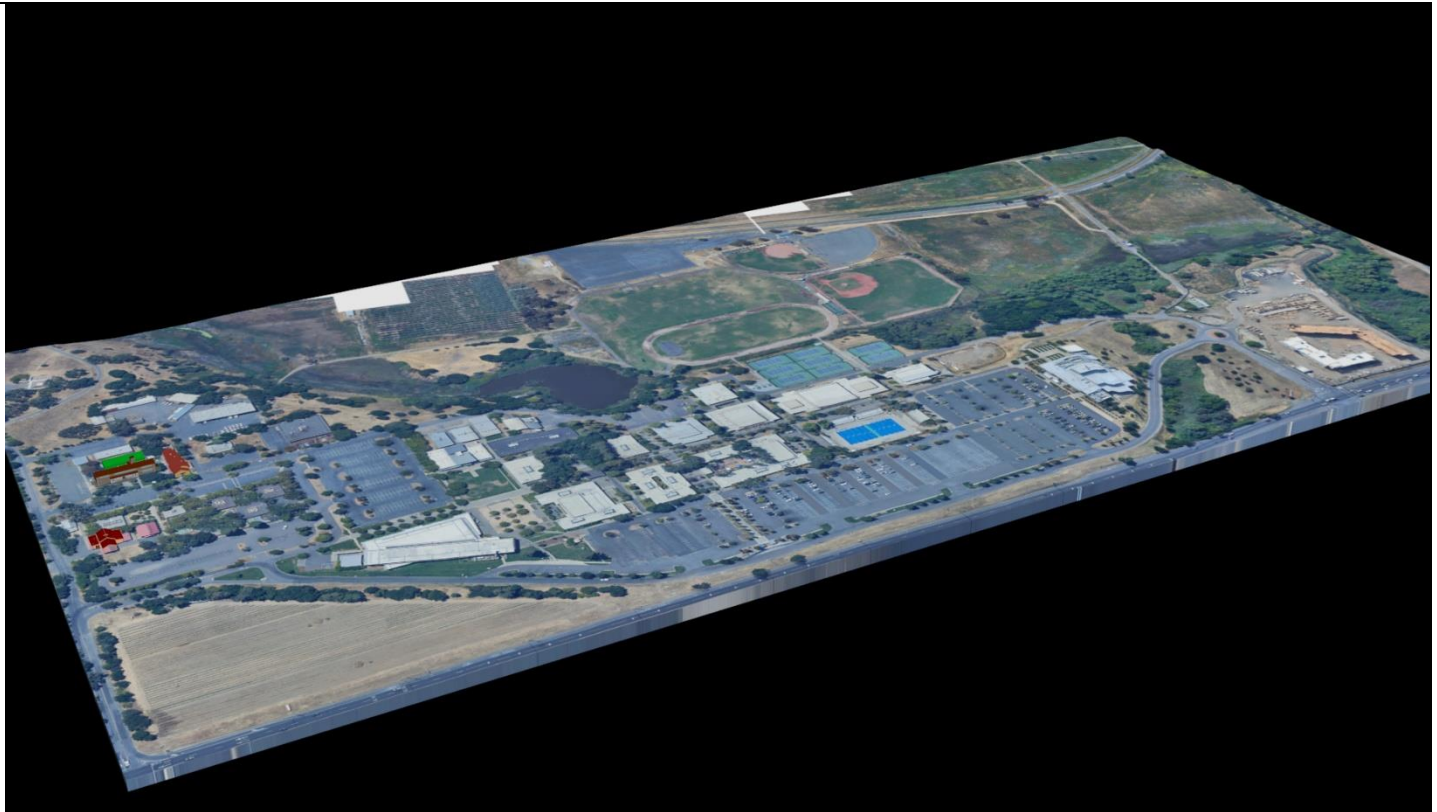
This image showcases the digital campus we are building.
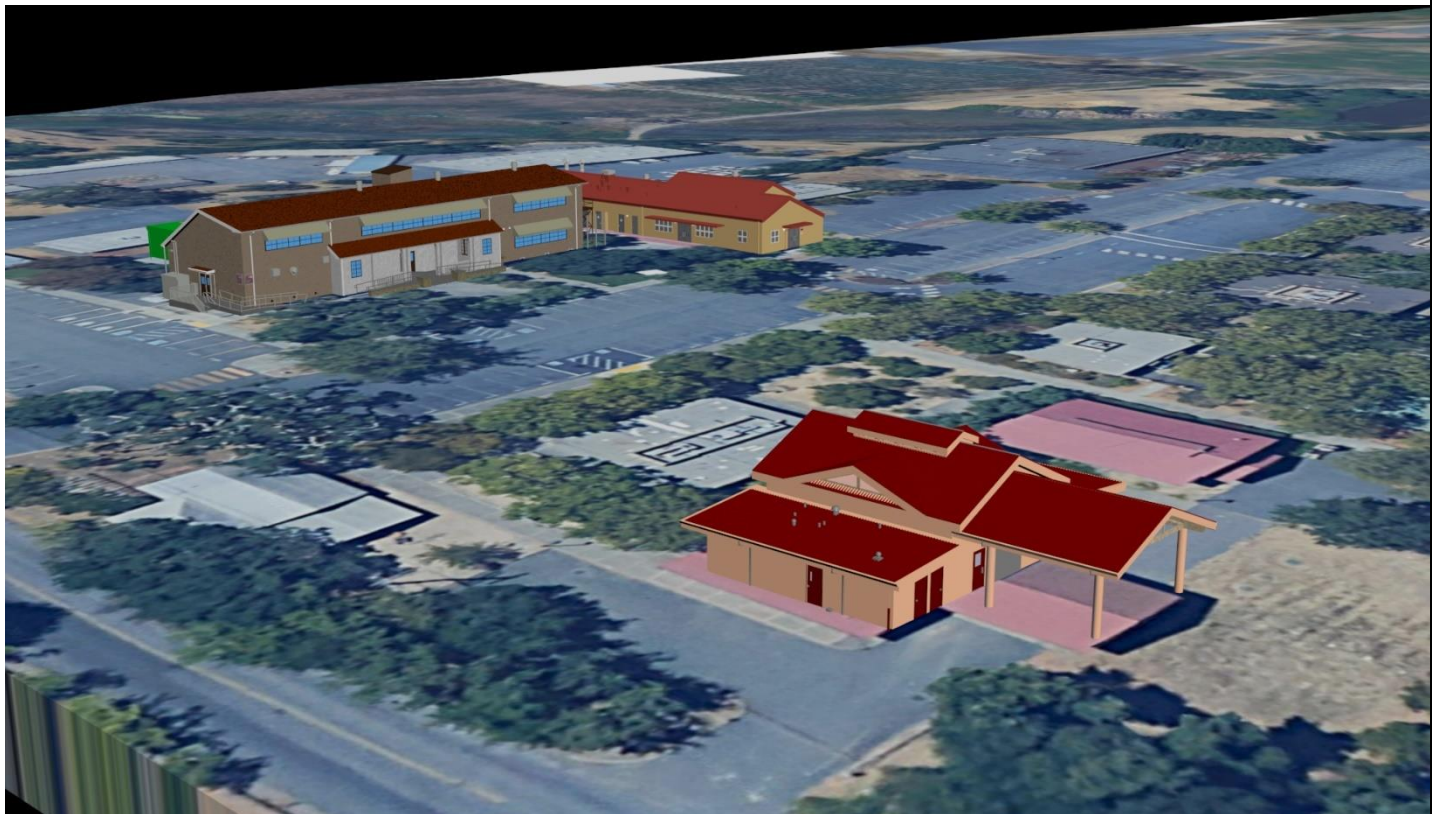
This is a close up of the South End of the campus. It includes 3D Models of the Art Building, Ceramics Building, and the Winery. As future classes add to this, it will become more detailed and realistic and eventually include building interiors as well.

I have gone through all of this information for two reasons. First, many people do not understand all that we do in the DDGT program and think that it is "just drafting". Secondly, you can see that with all we do, we do not simply fit into one simple category in the labor market data.

The labor market data is currently looking at the following data:
- *Architectural and Civil Drafters (17-3011)*
- *Mechanical Drafters (17-3013)*
- *Drafters, All Other (17-3019)*
- *Special Effects Artists and Animators/Multimedia Artists and Animators (27-1014)*

I only want to point out that we fit into many more labor market fields than shown.

B. Momentum

1. **Retention and Successful Course Completion Rates**

Course	Retention Rates (Across Three Years)			Successful Course Completion Rates (Across Three Years)		
	Rate	Course Rate vs. Program Rate		Rate	Course Rate vs. Program Rate	
		Above	Below		Above	Below
DDGT-110	94.7%	X		63.2%		X
DDGT-120	89.7%		X	53.8%		X
DDGT-121	95.0%	X		80.0%	X	
DDGT-130	88.2%		X	68.6%	X	
DDGT-230	93.3%	X		60.0%		X
DDGT-231	92.3%	--	--	76.9%	X	
DDGT-240	92.3%	--	--	76.9%	X	
DDGT-241	86.7%		X	46.7%		X
Program Level	91.5%			**64.6%**		
Institutional Level	90.9%			73.2%		

Source: SQL Queries for Fall 2024 Program Review
-- Indicates a value that is within 1% of the program-level rate.
Bold italics denote a statistically significant difference between the course-level rate and the program-level rate.
Bold denotes a statistically significant difference between the program-level rate and the institutional rate. The lower of the two rates is highlighted in bold.
Note: Grades of EW (Excused Withdrawal) for spring 2020 and beyond are not included in the calculations of the three-year retention and successful course completion rates reported above. This approach reflects the standard recommended research practice of not including EWs in either the numerator or the denominator for these rates.

RPIE Analysis: Over the past three years, the retention rate for the Digital Design Graphics Technology Program reflected the retention rate at the institutional level. No courses within the Digital Design Graphics Technology Program claimed a retention rate that differed significantly from the program-level rate. The retention rate for the Digital Design Graphics Technology Program falls within the second quartile (Q2) among program-level retention rates (across 60 instructional programs, over the past three years). The retention rate for Digital Design Graphics Technology is among the lowest 50% of retention rates among NVC programs.

Over the past three years, the successful course completion rate for the Digital Design Graphics Technology Program was significantly lower than the rate at the institutional level. No courses within the Digital Design Graphics Technology Program claimed a successful course completion rate that differed significantly from the program-level rate. The successful course completion rate for Digital Design Graphics Technology falls within the first quartile (Q1) among program-level successful course completion rates (across 60 instructional programs, over the past three years). The successful course completion rate for Digital Design Graphics Technology is among the lowest 25% of successful course completion rates among NVC programs.

Over the past three years, the difference between retention and successful course completion at the program level (26.9%) was significantly higher than the difference at the institutional level (17.7%). This figure represents the proportion of non-passing grades assigned to students at the end of the semester (i.e., grades of D, F, I, NP).

The following Digital Design Graphics Technology courses claimed a difference (between retention and successful course completion) that exceeded the 26.9% difference at the program level:
- *DDGT-241 (40.0%)*
- *DDGT-120 (35.9%)*
- *DDGT-230 (33.3%)*
- *DDGT-110 (31.5%)*

Program Reflection:

The DDGT program over the last three years dipped in retention rates since the last PEP report in 2021. I think there are two reasons for this:

I believe the main reason is due to the introduction of Hy-Flex instruction. The Hy-Flex teaching modality allows students to attend face-to-face, synchronous, or asynchronous and allows the student to jump around modalities (they can be in person one day and online the next for example). Attending asynchronously takes a special type of student to be successful, the student needs to be self-disciplined and make sure that they stay on task and not fall behind. There are a few students who succeed in the asynchronous style in every class but there are many more that do not. As there have been more students attending asynchronously, the success rates in classes have fallen when compared to classes that were 100% face-to-face. I encourage students to attend face-to-face or even synchronously if possible but ultimately, I leave it up to the student's discretion.

I also believe the loss of our DDGT technician position also plays a roll. The department assistant was promoted to IT but then the vacant position was never filled. That position was for twenty hours a week and the main duties are to maintain the computers and equipment in the lab, assist in grading, and most importantly, to assist students. The loss of this position (which has yet to be filled) for the last two+ years, has put more work on me and given the students less resources for assistance. I do believe this has been a factor and has played a factor in the decline of student's success.

I would also like to point out that I require students to meet with me for what I call a "monthly meeting" three times a semester. In Spring, students must meet with me once in February, March and April and in Fall, they must meet with me in September, October and November. These are required assignments that are part of the of their classroom participation grade. This allows students to meet with me one-on-one, outside of class, privately to discuss their class standing, where they are in the class, what they should be focusing on for improvements, and to address any concerns they may have. Ironically, the students who need the most assistance and guidance are the ones who tend to skip these assignments. Since the last PEP report, this has been implemented in all classes, not just the core classes. (This does not reflect DDGT230 or DDGT231 as that is taught by another instructor in the program.)

I also am probably one of the few instructors on campus who gives out their personal cell phone number to their students. I recognize that there is a lack of support created by the missing DDGT Technician position. I also realize that when class time is on, I am constantly lecturing and there is not a lot of lab time in classes. (Especially since I run the core classes of the program concurrently.)   I have chosen to give out my personal cell phone so that students can quickly get assistance when needed. Many times, it is a simple question that I can answer via text. If it requires more assistance, I can and will setup a private zoom meeting. My classes have many time-consuming project-based assignments. When students have time to work on them, I want them to be productive. I do not want them to get frustrated and lose momentum by having to wait for a Monday to ask a question. I know this is up and beyond what the school requires but I truly want my students to be successful and enjoy what they are doing – as much as possible. I fear if they get discouraged, and feel like they are on their own, they will be more likely to give up.

Furthermore, I have made video tutorials for most assignments that are given in the program. I am aware that this is a double-edged sword and I explain this to the students. Yes, it does show students how to create and finish an assignment providing them resources if they get stuck but if students only watch the video tutorials, they never really put in the effort needed to try to figure out things themselves. If you are only watching video tutorial and not putting in the struggle to figure it out yourself, are you really able to be successful when you have to do it on your own? I have these videos posted because, again, there is a lack of support in the program available to students (the missing DDGT Technician). This gives students a way to keep moving through assignments if they get stuck. What I recommend to students is that they should attempt the assignment on their own first and if they get stuck, use the video as a resource to get through that hurdle, then keep trying to work on their own again. Ultimately, it is up to the student how they use this resource. The videos are posted on our department website for all classes.

I would also like to point out that when someone takes an English or writing class, or a Math class, and they are struggling, there are resources on campus to help – tutors, the writing resource center, etc. When a student struggles in a program like mine, there are no other resources to help. Again, this is why it is so vital to have the DDGT Technician position filled.

I feel that I have done more than enough to make sure that all students can be successful if they put in the work. I have given them resources online and I have made myself as available as I can. I also stress the importance of communication so if they do start falling behind, or feeling discouraged, or feeling stressed, we can address those issues as best as we can so they can feel like they can move forward – and want to move forward.

2. **Student Equity**

	Retention Rates (Across Three Years)		Successful Course Completion Rates (Across Three Years)	
	Program Level	**Institution Level**	**Program Level**	**Institution Level**
Unknown Gender			*	69.3%
19 or Younger			*59.2%*	71.1%
African American/Black			*	68.2%
Latinx/Hispanic			*62.2%*	69.4%
First-Generation			67.4%	69.4%
Not Disabled			*64.0%*	73.0%
Non-Veteran	91.5%	90.9%		

Source: SQL Queries for Fall 2024 Program Review

Bold italics denote a statistically significant difference between rates at the program and institutional levels, with the lower of the two rates in ***bold italics***.

*Data suppressed due to low N (<10 students in cohort).

Notes:

Grades of EW (Excused Withdrawal) for spring 2020 and beyond are not included in the calculations of the three-year retention and successful course completion rates reported above. This approach reflects the standard recommended research practice of not including EWs in either the numerator or the denominator for these rates.

The age groupings are based on the student's age of August 15 of each academic year.

The shaded cells in the table do not have data reported because evidence of disproportionate impact was not found at the institutional level (for those demographic group – metric combinations).

RPIE Analysis: This analysis of student equity focuses on the seven demographic groups with significantly lower retention and/or successful course completion rates found at the institutional level (vs. the corresponding rates among all other demographic groups, combined) over the past three years. Tests of statistical significance were conducted to compare program-level and institution-level rates among the seven groups listed above.

Within the Digital Design Graphics Technology Program, the retention rate among non-veterans reflected the rate at the institutional level.

Within the Digital Design Graphics Technology Program, the successful course completion rates of students ages 19 and younger, Latinx/Hispanic students, and students without a disability reported were significantly lower than the corresponding rates at the institutional level. [Due to the low number of enrollments among students with unknown gender and African American/Black students in the Digital Design Graphics Technology Program, this analysis does not include comparison of successful course completion rates at the program and institutional levels.]

These finding regarding equity reflect the findings that emerged from the comparison of retention and successful course completion at the program vs. institutional level, where the program-level retention rate reflected the institution-level rate and the program-level successful course completion was significantly lower than the institution-level rate. (See Section I.B.1 above.)

Program Reflection:

All students are treated equal regardless of gender, gender identity, gender expression, race, nationality, ethnicity, religion, sexual orientation, or disability. I have the same expectations for all students and all students are provided the same resources (DSPS withstanding).

I am very passionate about this program. I went through it as a student, I held the DDGT Technician position for a time, I have been a part-time instructor, and now I am the Program Coordinator. I have seen this program through every "lens" you can imagine. I have always enjoyed, and been excited, about what we can design and I try to pass that passion onto the students. When they get excited, so do I. I do not care what a student looks like, or what background they come from, I am interested in passing my knowledge and passion on to them and helping them being successful on their journey.

3. **Retention and Successful Course Completion Rates by Delivery Mode (of Courses Taught through Multiple Delivery Modes, i.e., In-Person, Hybrid, and Online)**

	Retention Rates (Across Three Years)			Successful Course Completion Rates (Across Three Years)		
	In-Person	Online	Hybrid	In-Person	Online	Hybrid
Online vs. Hybrid						
DDGT-110		100%	92.9%		44.4%	78.6%
Source: SQL Queries for Fall 2024 Program Review						

Source: SQL Queries for Fall 2024 Program Review
This table compares student performance in courses offered through multiple delivery modes within the same academic year.
Bold italics denote a significantly lower rate within that delivery mode.

RPIE Analysis: Over the past three years, one course within the Digital Design Graphics Technology Program was offered through multiple delivery modes within the same academic year. DDGT-110 was offered through online and hybrid formats in 2021-2022. This analysis focuses on program-level rates. Since DDGT-110 was the only course to be offered through multiple delivery modes, the program-level rates are the same as the rates for DDGT-110.

Within the Digital Design Graphics Technology Program:
- *The retention rate in hybrid sections was lower than the retention rate in online sections. (The difference was not statistically significant.)*
- *The successful course completion rate in online sections was lower than the successful course completion rate in hybrid sections. (The difference was not statistically significant.)*

Program Reflection:

This is inaccurate. ALL DDGT courses (DDGT110, 120, 121, 130, 230, 231, 240, and 241) have been, and continue to be, offered in Hy-Flex format since Covid.

Please read the program reflection of B1.

C. Student Achievement

1. Program Completion

	2021-2022	2022-2023	2023-2024
Degrees			
AS Degrees	4	2	2
Certificates of Achievement (DDGT and Mechanical Drafting & Design)	1	--	1
Institutional: AS Degrees	306	287	227
Institutional: Certificates of Achievement	409	962	876
Source: SQL Queries for Fall 2024 Program Review			

RPIE Analysis: The Digital Design Graphics Technology Program conferred 8 degrees between 2021-2022 and 2023-2024. The Digital Design Graphics Technology Program accounted for 1.0% of the AS degrees conferred by NVC across the three-year period. Between 2021-2022 and 2023-2024, the number of degrees conferred by the program decreased by 50%. During the same period, the number of AS degrees awarded by NVC decreased by 25.8%.

The Digital Design Graphics Technology Program conferred one certificate in 2021-2022, which accounted for 0.2% of the certificates awarded by NVC that year.

Program Reflection:

The information in this table is inaccurate as it is missing a lot of data. Here is the information based on our records:

- 10 students have qualified for the Architectural Drafting and Design Certificate of Achievement.
- 13 students have qualified for the Mechanical Drafting and Design Certificate of Achievement.
- 8 students have completed the necessary requirements for the DDGT AS degree.
- Note: All students who have completed the DDGT AS degree automatically qualify for the DDGT Certificate of Achievement and there could be more as the DDGT CoA has less requirements than the AS Degree.
- 164 students have earned an Autodesk Certificate of Completion as each DDGT course offers a unique Autodesk Certificate of completion on a specific piece of software.

I came across these issues three years ago, the last time I filled out the PEP report. At that time, I also ran into a lot of missing certifications. Since then, I have been a strong proponent talking to administration whenever I can, expressing my concerns of how certifications are not being tracked correctly and accurately. I have yet to hear any response from administration to resolve this issue. I cannot even find out who is in charge of these certifications on campus or who to send completed certifications to. This is unfair to the students as there are students who have completed the requirements and yet, they have not been able to get their certifications. There should be a system in place that automatically generates and sends them their certifications once they have completed the necessary classes with the required grade.

The three years this PEP report reflects a low point in DDGT enrollment. What this report does not show is that there has been an upswing in enrollment and currently in Spring 2025, we have the largest enrolled class completing the AS Degree in DDGT241 (4th semester) that we have had in many, many years. Additionally, we have one of the largest DDGT121 (2nd semester) classes that we've also had in many, many years.

2. **Program-Set Standards: Job Placement and Licensure Exam Pass Rates**

Measure	Program-Set Standard* (& Stretch Goal)	Recent Performance			
		Year 1	Year 2	Year 3	Three-Year Total
Job Placement Rate	60% (75%)	81.8%	Not reported due to small N (< 10 in each cohort)		85.0%
Licensure Exam Pass Rate	Licensure exams are not required for this program.				
Source: Perkins IV Core 4 Employment data for Program (4-Digit TOP Code: 0953 Drafting Technology) for job placement rates (https://misweb.cccco.edu/perkins/Core_Indicator_Reports/Summ_CoreIndi_TOPCode.aspx).					

RPIE Analysis: *The job placement rate among Digital Design Graphics Technology students was 85.0% over the past three years. This rate (as well as the rate reported for one individual year) exceeded both the program-set standard and the stretch goal. [Job placement rates for two individual years are not reported due to the small number of students in those Digital Design Graphics Technology cohorts.]*

Program Reflection:

The DDGT Program does not guarantee job placement but we do have job opportunities that arise. I have a requirement for all students to submit a signed document stating that they have read the course syllabus the first week of school. We go over it during class and this is an assignment. For the core classes in the program, I also include a check box on the form asking students if they would like to be notified for any potential job opportunities. For those who check "yes", I add their contact information to a spreadsheet I maintain. When a job opportunity comes along, I forward the information to all students on the contact list and they can respond directly to the interested party if they wish. We get job opportunities ranging from small side jobs (like a local resident wanting to do an addition on their house), to employers looking for full time workers. I express the importance to students to make sure you find an employer who is flexible to work around your school schedule so you can complete your education. I also express what a great opportunity it is for students to be able to work in the industry while they are still in school as they can immediately see the application of the skills they are learning. Students have enough of a skillset to get an introductory drafting position after the first semester of the two-year program.

I am pleased to see so many of our students working.

II. CURRICULUM
A. Courses

Subject	Course Number	Date of Last Review & Approval by the Curriculum Committee *(Courses with last review dates of six years or more must be scheduled for immediate review)*	Has Prerequisite/ Corequisite* Yes/No **(Include Date of Last Review)**	In Need of Revision *Indicate Non-Substantive (NS) or Substantive (S)* **(Include Anticipated Academic Year)**	To Be Archived *(as Obsolete, Outdated, or Irrelevant)* **(Include Anticipated Academic Year)**	No Change
DDGT	110	04/01/2010	No			
DDGT	120	01/19/2012	No			
DDGT	121	12/12/2013	Yes			
DDGT	130	04/01/2010	No			
DDGT	230	03/14/2019	No			
DDGT	231	03/14/2019	Yes			
DDGT	240	05/23/2013	Yes			
DDGT	241	01/19/2012	Yes			

*Note: Prerequisites need to be validated (in subsequent process) through the Curriculum Committee.

Program Reflection:

The course curriculum in the DDGT program is fairly current. There are a few minor changes that can be done to a few of the classes specifically related to changes with Autodesk. I also need to update the curriculum to reflect the addition of new technology in the program (3D Laser Scanning, Augmented Reality, Artificial Intelligence, etc.). Additionally, the DDGT program is an Autodesk Training Center. Autodesk has changed some of their certification options. There were three levels to Autodesk certificates including: certificate of completion (which we still offer), the Certified User Exam, and the Certified Professional Exam. The Certified User and Certified Professional exams are no longer offered by Autodesk so we are no longer training for those certifications. I need to update the curriculum to reflect these changes.

The textbook used in the majority of the DDGT classes has not been updated for several years. Mainly because there's not a newer version and the book is available for free online as a digital PDF. Changing books will increase the cost for students by several hundred dollars. Information in technical design does not change quickly. The information in the textbook is still valid and current.

The courses in the DDGT program will be looked over and updated in the next three years to reflect the changes in Autodesk and the addition of new technology into the program. For example, in DDGT130, we now have access to additional 3D Printing equipment. In DDGT241, we are utilizing 3D Scanning equipment and Augmented Reality headsets.

There are no plans to archive any courses at this time. There are plans to add additional courses to the program including a second level 3D printing course, a robotics course, a course dedicated specifically to technical graphics, and several classes for civil drafting utilizing the 3D scanning and surveying equipment. I have yet to add these as I feel I am getting mixed messages from the college. It is difficult to add courses when I am being told to limit the amount of course offerings that we have now. It has not been a real incentive to go through the hard work of creating and adding courses if we will not be able to offer them.

B. **Degrees and Certificates[+]**

Title of Degree or Certificate	Implementation Date	Required Documentation Complete[++] *Yes/No*	**In Need of Revision *and/or Missing Documentation*** (Include Anticipated Academic Year)	**To Be Archived[*]** *(as Obsolete, Outdated, or Irrelevant)* (Include Anticipated Academic Year)	No Change
Digital Design Graphics Technology (AS)		No			
Architectural Drafting and Design (Certificate of Achievement)	Fall 2019	Yes			
Digital Design Graphics Technology (Certificate of Achievement)		No			
Mechanical Drafting and Design (Certificate of Achievement)	Fall 2019	Yes			

[*]Note: Discontinuance or archival of degrees and certificates must go through the Program Discontinuance process or the Program Archival Task Force.

[+]Degrees and Certificates cannot be implemented until all included required courses in them are approved and active.

[++]Documentation includes Program Narrative and for CTE programs only: Advisory Committee Recommendation, Labor Market Information, and Regional Consortia meeting minutes.

Program Reflection:

I am still looking at adding a one-year Civil Drafting and Design Certificate of Achievement that will also utilize GPS and 3D Scanning with surveying in mind.

I am also considering reviewing the existing DDGT Certificate of Achievement and assessing whether it makes sense to remove courses from the certificate outside of DDGT courses. This would make it easier to assess completions.

III.   LEARNING OUTCOMES ASSESSMENT

A. Status of Learning Outcomes Assessment

Learning Outcomes Assessment at the Course Level

Number of Courses	Number of Courses with Outcomes Assessed		Proportion of Courses with Outcomes Assessed	
Number of Courses	Over Last 4 Years	Over Last 6 Years	Over Last 4 Years	Over Last 6 Years
8	6	7	75%	88%

Learning Outcomes Assessment at the Program/Degree/Certificate Level

Degree/Certificate	Number of Outcomes*	Number of Outcomes Assessed		Proportion of Outcomes Assessed	
		Over Last 4 Years	Over Last 6 Years	Over Last 4 Years	Over Last 6 Years
General PLOs for Program	4	4	4	100%	100%

Program Reflection:

The college changed systems on how to upload SLO/PLO results over the last couple of years. We lost access to the system and I only recently was given access again through Nuventive. I am pleased to say as of winter break 2025, we are now current on all eight courses for SLO/PLOs. Now that we have access, we will return to processing all held courses at the end of every semester and the program level outcomes at the end of every spring.

B. Summary of Learning Outcomes Assessment Findings and Actions

The DDGT program is currently assessing how effective teaching in Hy-Flex modality is for the program. I see the value of offering the classes in different modalities to accommodate people with different schedules and needs. However, I am aware that students who attend asynchronously have a very low success rate when compared to students who attend face-to-face or synchronously. This isn't to say that it's not possible to be successful when attending asynchronously, but it does take a very special student to stay self-motivated and not fall behind. In a seven-unit course (the core classes), there are a lot of expectations and a very rigorous workload and this can be difficult for students to keep up, especially "on their own." I continue to review the student success rates within the different modalities and I am still evaluating if it is worth continuing in multiple modalities. At the same time, there are students who will never be able to take some of our courses if we only offer them face-to-face due to location, transportation, or their schedule.

The Napa Valley College recently transitioned to a 16-week semester as opposed to an 18 week plus finals week. This results in three less weeks of time students have to work on assignments. The DDGT courses are primarily project based which we know require more time outside of class than other types of assignments or courses. Personally, I feel it is a disservice to the students to shorten the semester. Even though it is the same number of hours, it is three less weeks to actually work and complete these assignments. I am currently reviewing the class expectations and the assignments for each course and I will need to make changes accordingly.

Program Reflection:

See previous entry.

IV.   PROGRAM HIGHLIGHTS

The program-level plan that emerged from the last review (fall 2021) included the following initiatives:
- Track students progress across all DDGT Degrees and CoA's to increase completion rates.
- Piloting courses in a Hy-Flex modality to increase flexibility to student schedules and increase program enrollment.
- Creation of new courses to address the needs of students and local industry by expanding existing training paths and creating new ones.
- Creation of a new Civil Drafting and Design CoA to offer additional training the program is not currently offering and address the needs of local industry.
- Continue outreach to local high schools to spread awareness and increase enrollment
- Increase number of computers in computer lab to address smaller cap sizes and to expand the program
- Additional equipment for 3D Printing to expand the 3D Printing portion of the program.
- Drones capable of carrying heavy payloads and cameras for data acquisition and analysis.
- Implement required Autodesk Certifications

A. Accomplishments/Achievements Associated with Most Recent Three-Year Program-Level Plan

- *Track students progress across all DDGT Degrees and CoA's to increase completion rates.*
  DDGT Degrees and Local Certificates as well as Autodesk Certificates of Completion have been gathered. Unfortunately, Local Certifications at the college still are not being completed after submissions. This is an ongoing issue the college still needs to resolve.

- *Piloting courses in a Hy-Flex modality to increase flexibility to student schedules and increase program enrollment.*
  The DDGT program has been offering Hy-Flex courses since Covid. All DDGT courses are offered in this method. This has helped increase student enrollment as this modality works with everyone's schedule but it has also decreased the number of student completions. Students who attend asynchronously tend to be the least successful as it takes a special kind of student to stay self-motivated and stay on track. Students who attend face-to-face typically are the most successful. I have tried to keep asynchronous students on track by having monthly meetings where they meet with me as an assignment to discuss where they are in the class and what they should be focusing on to be successful. I have also posted video tutorials for the majority of assignments on our website. Furthermore, I require everyone to communicate with me in the class at least once a week. This can be done by a text or email, submitting a quiz or homework assignment, or attending in person or via zoon.

- *Creation of new courses to address the needs of students and local industry by expanding existing training paths and creating new ones.*
  The creation of new courses in the DDGT program has been on hold for the last few years for several reasons. First and foremost, with the lack of a DDGT Technician position and having no assistant, I've had to take on additional 20 hours of work per week to cover those tasks. That has severely limited any extra time I have to spend expanding the program. Over the last two years I have been doing the roles of three people: the instructor with overload, the program director, and the DDGT Technician. Furthermore, it has seemed to be counterintuitive to create new classes when I've been told to cut or limit the amount of courses I'm already offering at the college. I still have plans to add new courses but I have concerns that they may not be able to be offered.

  The courses I would still like to add have been revised since the last PEP report. Here are my current ideas:
  - A class on technical graphics.
  - A second level 3D Printing course.
  - A course on robotics and python coding with a Raspberry Pi (small computer).
  - A one-year Civil Design track similar to our mechanical and architectural local certificates utilizing the 3D scanning equipment in a more of a GPS survey style.
  - I have decided not to offer a class on augmented reality as that would be too challenging at this time but I have incorporated it into the two-year program.
  - I have also decided to hold off on the drone technology addition for now as Carrie Roughly in geology is currently doing something similar over in her program.

- *Creation of a new Civil Drafting and Design CoA to offer additional training the program is not currently offering and address the needs of local industry.*
  See answer to previous bullet point.

- *Continue outreach to local high schools to spread awareness and increase enrollment*
  Outreach to local high schools has been an ongoing task and will continue to be an ongoing task into the future. I have contacts at many of the local high schools including: New Tech, Vintage, Napa, St. Helena, and Valley Oak. I have regularly gone out to some of these high schools and given

presentations as well as received students from those schools during on campus tours. I will continue to do so because I feel that word of mouth is the best way to advertise and promote our program.

The Digital Design Graphics Technology program name can be a bit confusing to those outside of the program to describe all that we actually do. It is not as clear cut as a department name of "Welding", "Machine Tool", or "Viticulture." There have been suggestions of changing the name to something simpler and more descriptive but as of yet, I have not come up with something better. This is why it is so important to do outreach so people are aware of our program and what we actually do.

- *Increase number of computers in computer lab to address smaller cap sizes and to expand the program.*
  Increasing the number of computers in the computer lab has become less of an issue since we started teaching in Hy-Flex. With more students attending online via Zoom or asynchronously, it has decreased the number of students who are attending face-to-face. Additionally, some of the students who do attend face-to-face still prefer to bring in their own laptop and work off of that. That being said, we have a computer lab of 28 student machines. This has been split between two classrooms. We keep 21 machines in what we call the first-year lab and we have moved the other seven machines into the second-year lab as that class tends to be smaller. The second-year lab is dedicated to student in the second year of the program and no other students utilize that room. This also allows those students to "render" on those computers overnight without interruptions from other students. (Rendering is computer processing on assignments that takes heavy computer resources.) This is the main reason we have smaller class limits typically set to 15 to 20 students. However, I will typically take more students if there is a need.

  I know the library offers student computer rentals that they can borrow for a semester. For the most part, this is not a viable option for students in our program because those computers tend to be Chromebooks and not true computers. The software we run requires a Windows computer with more processing power and resources, and it needs to be a Windows operating system for the software to run. Some students do have a challenge finding a computer to use at home. It would be nice if the library had a few extra, higher end computers for those students who need them.

- *Additional equipment for 3D Printing to expand the 3D Printing portion of the program.*
  As of Spring 2025, the DDGT department has been given funding to buy an additional 3D Printers. Not all 3D Printers are the same. We have increased the number of 3D Printers from one to eight and they utilize different printing methods and technologies. This is a great asset to the program as it will allow us to demonstrate different printing methods to the students showcasing different printing technologies and different material outputs. Additionally, the extra printers will allow us to catch up on past projects, print additional projects that have been on our waitlist, and to expand the 3D Printing courses in the program.

- *Drones capable of carrying heavy payloads and cameras for data acquisition and analysis.*
  The acquisition of drones capable of carrying heavy payloads and cameras for data acquisition analysis has been on put on hold for now as we do not have the budget for that equipment nor do we have classes or instructors in place. Additionally, Carrie Roughly over in the Geology department has implemented drones on her own for GIS data management. At this time, we are suggesting students take classes over there for those who want that training until we have the resources ourselves. (Please note, if and when we add this to our program, it will not be used the same way as it is in the Geology department and it will not be redundant.)

- *Implement required Autodesk Certifications*
  Over the last three years, Autodesk has changed the certifications that they offer. In the past, there have been three main types of certifications including the "Certificate of Completion", the "Certified

User", and the "Certified Professional". The "Certificates of Completion" are still offered and each student in each class earns a specific Autodesk Certificate of Completion based on a specific piece of software. We charge $125 lab fee for this but if you were to go get that training anywhere else, it would easily cost you over $1000 per title. By the end of the program, students can have upwards of six certificates to put on their resume.

The other two types of certifications Autodesk offered, the "Certified User" and "Certified Professional" exams came with additional costs and you were required to take an online timed exam at our facility. You were allowed to miss very few questions and it was a very challenging exam. I have always encouraged students to take these as they were very well known in the industry and held a lot of weight on a resume. They were not required due to the extra costs. Regardless, Autodesk has discontinued those certifications for now and I am not sure if they are coming back or being replaced with something else.

B. Recent Improvements

241 Final Project
DDGT241 is the 4th semester of the two-year program. During that class, historically, students would work as a team to do a really complex animated video with a story. It would teach students how to work individually within a group to be efficient and to meet milestones and deadlines. When COVID happened, we were no longer able to work in groups and students were forced to work on individual projects. When we came back, I decided to revamp the 241 final project. Students no longer create an animation. Instead, we have included additional technologies such as 3D scanning and augmented reality to improve the scope of the project.

The new project that we started since the last PEP report is now an ongoing project that every DDGT241 class will add to. Each student is responsible for one building on campus. They are responsible for creating a high- and low-resolution 3D digital model of the building with materials. That building is to be reverse engineered based on point cloud data gathered from our 3D laser scanner. Students will take the low-resolution model and turn it into an interactive digital hologram that is superimposed over real world objects using augmented reality with Microsoft HoloLens. Students will also take their digital model and they will 3D print it at 1:500 scale using our 3D printers and adding it to our 3D printed campus which fits on a four-foot by eight-foot board. We are currently using a magnetic board with magnets inserted into the 3D prints to hold them in place. All pieces are printed modularly so that they can be easily replaced with newer, more accurate models in the future as technology improves. Furthermore, students will take their high-resolution 3D model and they will incorporate it into our digital 3D campus. This is interactive and it is currently placed on our department website. You can see a low-resolution proof of concept here.
https://sketchfab.com/3d-models/napa-valley-college-campus-270ee0a11c2341cfad526ea400a24af3
This project is a culmination capstone project of the program utilizing all technologies that were taught over the two years.
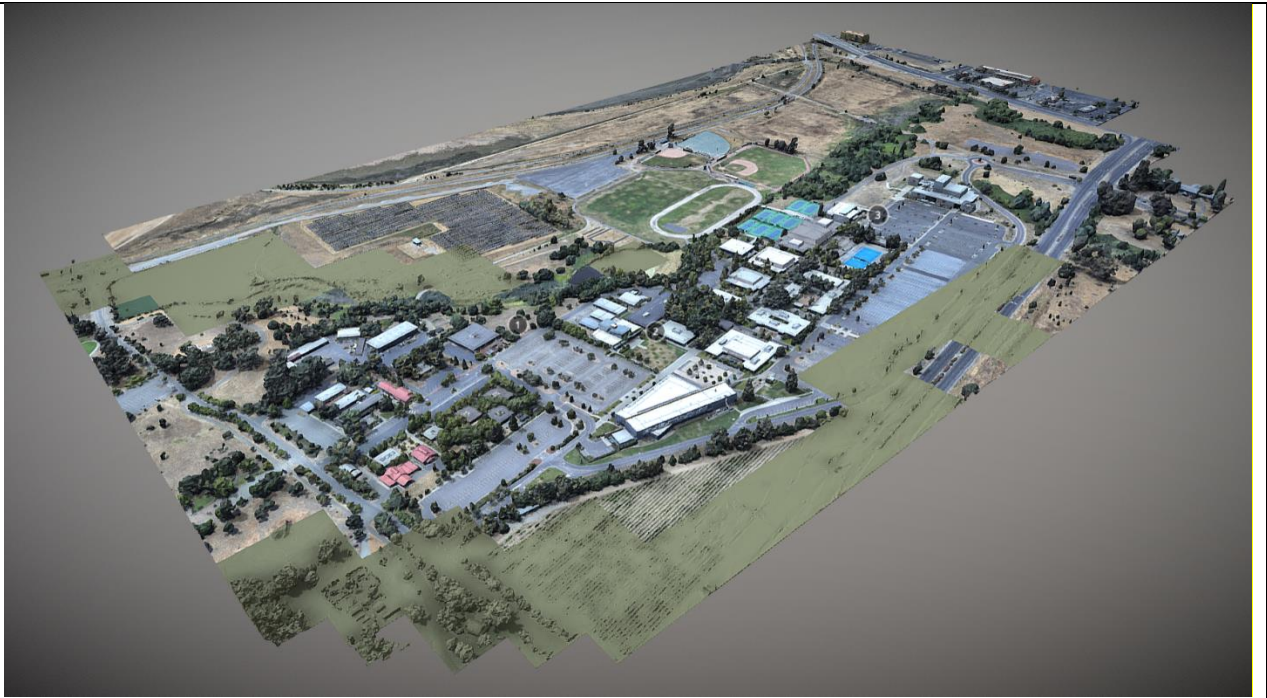
This is a screen capture of the interactive campus model. This is a proof of concept and will be updating it with a higher quality version soon.

CNC Programming with Machine Tool

The Machine Tool program coordinator Stan Hitchcock and his assistants, Steve Wright and Thomas Gray, all took the DDGT130 Intro to 3D Printing course in the last three years as it utilizes the software known as Autodesk Fusion 360. This is one of the software programs that we use to print on the 3D printer. However, it is also the same software that can be used with the Machine Tools 5-Axis Computer Numerical Control (CNC) machine. We have been working collaboratively since, working on 3D models and transcribing them into G-Code to use on his 5-Axis CNC machine. Our first test is with a Turner's cube (see picture below). We are currently meeting once a week to keep moving forward on this collaboration. We are recording our meetings and posting them on our department website (http://ddgt.net/ddgt_cnc.html) and the meetings and the videos are available to students. We are currently evaluating the idea to create a course or certificate around CNC programming.
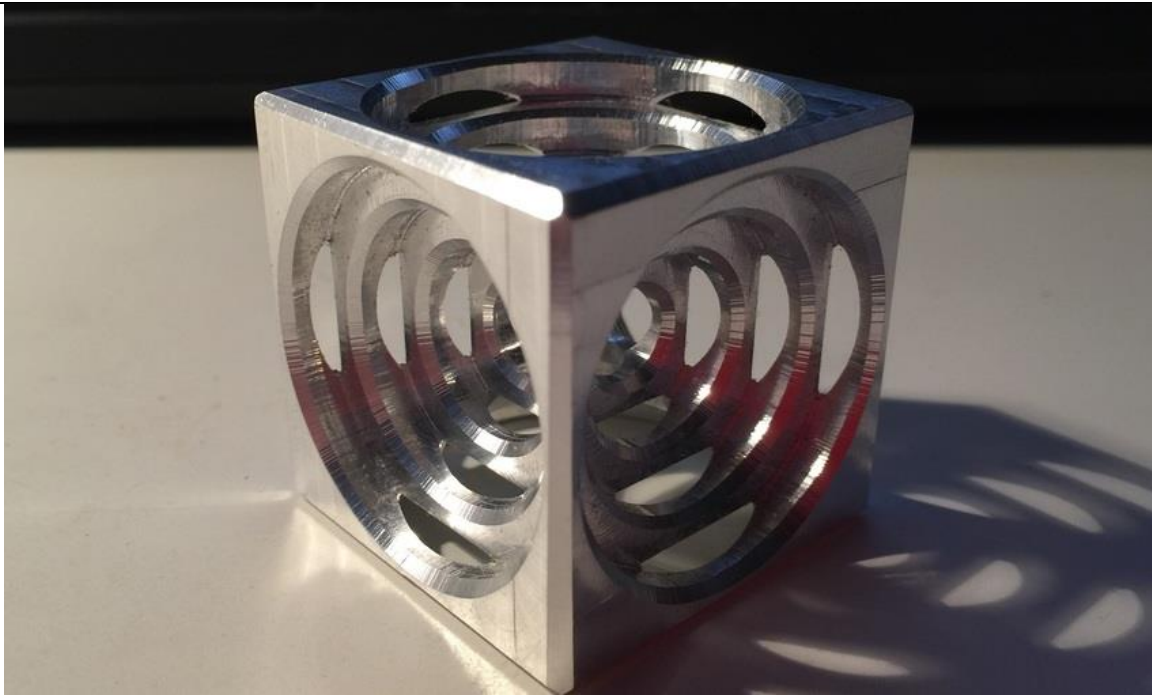
Turners Cube

I am also considering collaborating with Ceramics with 3D Printing on how to create negatives for plaster molds and have met with Rhue. Here is the concept from youtube:
https://www.youtube.com/shorts/-MbevQt13Iw

Ceramics with 3D Printing

Robotics Club

It has been my goal for quite some time to add a second level 3D Printing course to follow DDGT130 that would also include and utilize robotics at some level. The type of robotics that we are working with start with a Raspberry Pi (a miniature computer) and it is connected to linear actuators and different types of motors. The devices are controlled by the Raspberry Pi using Python coding. I'm still wrapping my head around how I want to develop this course. As a rough test, I have started an unofficial robotics club that meets once a week and is open to all students. Those meetings are recorded and are posted on our department website (http://ddgt.net/ddgt_robotics.html) and are available to all students. We are currently learning how to work with the Raspberry Pi, how to currently code with Python language, and to work with different input / output devices. The long-term goal is to either include this in a secondary 3D Printing course or make a stand-alone robotics class and turn it into a local skills certificate. 3D printing and robotics go hand in hand as you will sometimes want to automate your 3D printed parts and assemblies.

Artificial Intelligence

The increased rise in the use of Artificial intelligence is not going anywhere. Students need to learn to use artificial intelligence as another tool in their skill set and not something to be ignored. Students need to be taught how to use it as a tool and not something to cheat with. As of Spring 2025, the DDGT program is going to start implementing AI in some of the courses. This will lend itself well when we are learning digital graphics and students are required to create their own logo for their fictitious company. We have plans of using an AI called DALL-E (or something similar) to help generate those images. When those images are created, we will still recreate them ourselves using vector tools and we are not replacing anything, only assisting the creation of ideas. Another example of incorporation of AI is in the coding of our student webpages and the coding used in our robotics club. In both situations, the idea is to learn the code ourselves and then compare it with AI created code (ChatGPT?) for comparison. If you do not know how to read the code or create the code yourself, then you will be unable to edit and understand the AI created code. However, the AI created code may be cleaner and better than what the student has created. Learning to use both will be an asset.

Video Tutorials

I have added video tutorials for the vast majority of assignments on all DDGT courses on our website (www.ddgt.net). I have done this with some hesitations. I feel there is more value for the students to attempt the assignments on their own because through that struggle is where you truly learn. However, with the loss of the DDGT technician over the last several years and the loss of assistance and resources to the students, I felt it was a disadvantage for the students not to have these resources available to them. I stress to the students that they really should try the assignments on their own first and if they get stuck, they can go watch the video to help them through any hurdles. They will learn more if they attempt it themselves. My main concern is if students solely rely on the video tutorials, and not try to attempt the assignments on their own, they will not be as competent with the software and the skills they need to be learning because they will not always have those types of resources available to them. In the future, students will need to be able to figure out things on their own as part of their skillset. At this time, I feel the advantages of posting theses tutorials outweigh any negatives.

C. Effective Practices

- All lectures in the DDGT program are recorded and posted on our department website with password protection. The use of a password is required to make sure that only students can watch the lectures and to make sure we are not violating any license agreements with ASCENT and Autodesk. We have been doing this since Fall 2014 and this has had a huge positive impact on our program. If students miss a class, did not get the material the first time, need a refresher, or need help falling asleep (joke), students can watch the lectures as many times as they want. This also helps to free up the time of the instructor so that I am not repeating the same information. The student can go watch the lecture, then ask for additional help if necessary. Lectures for prior classes are kept online for students to refer to.
- Many assignments have had video tutorials added to the department website to assist students.
- In all DDGT courses (except DDGT230 and DDGT231), students are required to meet one-on-one with the instructor outside of class three times a semester. These are assignments referred to as "monthly meetings". This gives the instructor an opportunity to go over Canvas and the students' progress in a private setting to discuss and address any issues. This also gives the students an opportunity to ask any questions they may have. This also gives me an opportunity to verify that the student is not falling behind and helps to create better communication between me and the student. This has been successful although I have also found that the students who need this the most and are falling behind, tend to skip this assignment. I believe this has helped with class retention and course completions since implementation.
- Transitioning to an online since Covid has increased the use of Canvas and has made it a better tool for the students. Prior to Covid, we only utilized Canvas to post assignment and quiz scores. Due to Covid and teaching online synchronously, I have delved into Canvas much deeper and now utilize it to post modules, the course schedule, and we now take our quizzes and tests online. We will continue this even after we return face-to-face.
- The use of the 3D Printer in the program has had a huge impact as a learning tool for students.
  - We have 3D Printed many assignments that are given out as 2D illustrations and students can actually hold the 3D Printed version. This helps them visualize the 2D drawing views with the actual 3D part or assembly.
  - We have also been able to add "Reverse Engineering" assignments into the program which is utilized in multiple classes. Reverse Engineering is a common task in the industry where a part or assembly is fabricated before a drawing is created as a prototype. Once the prototype is proven, then a drawing is created based on the physical model where the drafter must measure the dimensions themselves. We have identical 3D Models made and students must create complete drawing based off of the 3D Model given to them.
- Keeping a list of student contacts for Job opportunities has helped many students find work and gain experience in the industry. Students are able to request having their contact information added to the contact list and when job opportunities arise, I send out the information to the list and they can choose to respond directly to the employer if they wish.

PROGRAM PLAN

A. Based on the information included in this document, the program is described as being in a state of:

  __ Viability

  __ Stability

  X Growth

  *Please select ONE of the above.

  Explain why you selected that description of the state of the program.

  I have marked that the program is in a state of growth because for the last two-years, we have had increased enrollment. The Fall of 2024 enrollment was the second largest class we have had in the last 10+ years. We have found a great new instructor for the Architectural track in the program and we have been able to successfully offer DDGT231 for the first time since I have taken over as Program Coordinator. We have also incorporated additional activities outside of classes such as the CNC collaboration with Machine Tool and our Robotics Club, both of which meet once a week is available to all students. We have successfully implemented the 3D Scanning equipment and Augmented Reality equipment into the program. Additionally, in Spring 2025, there is a new addition of 3D Printing and Robotics equipment. It is our goal to add several new classes between now and the next step PEP cycle.

B. Outline the three-year plan for the program by completing Columns A – D of the Three-Year Program Planning Template (the Excel file that will accompany the Program Review Report). For the fall 2024 program review cycle, the 3-year program plan will span 2025-2026 through 2027-2028.

	A	B	C	D	E	F	G
PROGRAM:	*Identify program here.*						
PLANNING YEARS:	2024-2025 through 2026-2027						
	Program/Service	**Unit-Level Initiative**	**Anticipated Year of Implementation**		**Anticipated Outcome of Initiative**	**Description of Resource Need**	**Type of Resource Need**
	DDGT Technician position filled.	The DDGT Technician postion has been vacant for almost three years. This severely limits the state of the program. There is no extra assistance for the students to get one on one help when the instructor is not available. This puts more of a workload on the instructor spending additional time grading, maintaining computers and other equipment, and assisting students instead of lesson planning, improving existing courses, and adding new classes.	2023-2024 (Current)	This needs to be filled as soon as possible. <----	Expected Results: Higher student success. Equipment running smoother. Additional lab hours being maintained. Supervision of toxic materials for student safety.	DDGT Technician position filled.	Staffing
	DDGT Computers	Our computers are 9 years old and counting. The software we utilize requires high end machines with a lot of computer power. Our machines no longer meet these needs.	2023-2024 (Current)	These computers should have been replaced four years ago. <----	We need these computers to teach class. If we cannot run the software, how are we to teach?	32 new lab computers	Technology
	Robotics	We are looking at creating an official robotics class. We currently have the equipment to run five student stations. If we are to offer this class, we will need funding for additional student stations.	2025-2026		We will be able to offer additional courses and continue to grow the program.	Funding for an additional 10 student lab stations.	Equipment (other than Technology)
	3D Printing Supplies	There is an ongoing cost for 3D Printers for materials and consumables. The student projects are paid for by student fees but there are many additional projects that we print for the department.	2023-2024 (Current)		Students will be able to utilize department 3D Printed parts to assist in assignments. It will also be used to print the ongoing DDGT241 Final Project - the 3D Printed Campus.	3D Printed materials	Supplies

V. RESOURCES NEEDED TO IMPLEMENT PROGRAM PLAN

A. Describe the current state of program resources relative to the plan outlined above. (Resources include: personnel, technology, equipment, facilities, operating budget, training, and library/learning materials.) Identify any anticipated resource needs (beyond the current levels) necessary to implement the plan outlined above.

Description of Current Program Resources Relative to Plan:

The computers in the DDGT computer lab are falling severely behind our technological needs. Our computers are currently nine years old and aging. They can barely meet the minimum requirements of the software that we utilize throughout the two-year program. The administration has given us two test computer stations over the last four years to see if they would be acceptable replacements. Nothing has ever happened. We are utilizing software that is very demanding of computer resources and our computers can no longer meet those needs.

The DDGT technician position has been vacant for almost three years. The former employee was promoted to it in a full-time position in IT and then I was told the position would not be filled. I am currently fulfilling the roles of three positions: the Program Coordinator, the Instructor with overload, and the DDGT Technician. This is severely limited the growth of the program. I do not have the time to create new curriculum. I barely have the time to maintain existing curriculum. I am already working seven days a week as I spend my weekends grading. I do not have time to fill out extra projects like this PEP report, which is why this is being submitted several months late (I had to use my Winter Break to fill this out as I do not have any extra time during the school semester). The role of the DDGT technician is vital to the success of the program as it takes pressure off the instructor. Among some of the duties of the DDGT Technician is to maintain computers, maintain other equipment such as 3D printers, keep 3D printed projects moving along, maintain and supervise the safety of students as some of the 3D printing equipment is toxic, assist students with assignments, and to assist with grading. When I am doing all of these things without any assistance, it prevents me from spending time growing the program.

Even with limited resources, the program is still in a state of growth. One of the areas of growth is in our robotics club which I hope to eventually turn into a class. We have currently been given funding to purchase equipment for about five lab stations. If this is to become an official class, we will need additional equipment for additional stations.

There is an ongoing cost with 3D printing for the materials and consumable materials like trays and printheads. Some of this is covered by student fees. However, there are a significant number of prints that are created and used by the department itself. There is an ongoing cost of these materials to be replenished.

B. Identify the resources needed in order to implement each component of the three-year plan for the program by completing Columns E – F of the Three-Year Program Planning Template (the Excel file that will accompany the Program Review Report). If more than one type of resource (e.g., operating expenses, technology, supplies, facilities, equipment, etc.) is needed to implement the initiative, list each need on consecutive rows following the unit-level initiative.

Note: Resources to support program plans are allocated through the annual planning and resource allocation process (not the program review process).

The completed Three-Year Program Planning Template will serve as a draft/starting point for upcoming annual planning and resource allocation cycles.

DIGITAL DESIGN GRAPHICS TECHNOLOGY   FALL 2024

Completed by Supervising Administrator:

Douglas Marriott

Date:

2/14/25

Strengths and successes of the program, as evidenced by analysis of data, outcomes assessment, and curriculum:

Professor Strommen has done well in describing the current state of the program and responding to the program review data. There is demonstrated success with enrollments and a restructuring of class offerings. A noted strength is Professor Strommen's dedication to the program and the students we get to serve. He makes an important point about the unique subject matter and how he is an individual point of contact for student support through video tutorials and instructor access to ensure success. It should be noted that it was Professor Strommen who piloted the "Hi Flex" model at NVC and that he is continually assessing this effort to benefit our students. I also appreciate and value that there is collaboration with our Machining and Tooling faculty and volunteers and always welcome seeing programs reverse refer students for relevant skill acquisition. In 2025 we are in an environment where AI is impacting education, labor, communication, and more and I appreciate that in DDGT it is being incorporated as a tool to help advance skill development and in line with how industry is quickly changing. There are tangible products being produced (3D models) that we should collectively look at featuring in a prominent part of campus to highlight the program (perhaps the student activity center or the library) as the program is somewhat hidden with its location on campus.

Areas of concern, if any:

Since Fall of 2024 NVC has been looking at creating a pathway with Napa High School in Graphic Design and as Professor Strommen shared more work to recruit from and to align with our CCAP partners. There are also opportunities at St. Helena High School for articulation but have been barriers with required technology for testing. More communication and alignment with our High School partners would help with recruitment and awareness of NVC DDGT offerings. It is noted that Professor Strommen is the only full-time faculty member of DDGT and has full semesters and limited time but with support from the Dual Enrollment Manager and newly hired CEWD Counselor there is hope for more formal HS partnerships to advance DDGT.

We appreciate the citing of technology needs for the area, as there are campus wide efforts to advance our instructional areas. The Dean will work with Professor Strommen to explore workforce funding to help address this issue.

Although Professor Strommen cited the program in a state of growth and made recommendations for new offerings, the campus is currently in a state of enrollment stabilization. Many DDGT students come to us for skill development and certifications perhaps not for credit accumulation and degree completion. Perhaps we can explore new offerings through a Community Education fee for service model to determine both viability and interest in new DDGT topics prior to advancing through formal curriculum approval. The Dean will be happy to explore this option with Professor Strommen as a potential next step.

There is a concern of student support with the vacated instructional assistant and this is noted in the program review. This should continue to be cited in annual plans and in follow the recommended new position process.

Recommendations for improvement:

As shared above, the Dean would recommended continued and expanded partnerships with our HS partners, new technology for the program to stay current with training toward industry needs, instructional support, and exploration of not for credit formats for new course ideas.

Additional information regarding resources:

Cited above.