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UNM Academic Program Review

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Fall 2018

### **Computer-Aided Drafting 2018 Valencia Self-Study & Documents**

University of New Mexico - Valencia County Branch

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# Valencia Campus Program Review Checklist

**Name of Program: Computer-Aided Drafting**

**Name of Contact Person: Alexa Wheeler**

## **Review Categories to be Addressed:**

- |      |  |                                     |
|------|--|-------------------------------------|
| I.   | Description of Program's Mission                                   | <input checked="" type="checkbox"/> |
| II.  | Description of the Program's Goals                                 | <input checked="" type="checkbox"/> |
| III. | Changes in trends in enrollment (over the last two years)          | <input checked="" type="checkbox"/> |
| IV.  | Program Assessment   | <input checked="" type="checkbox"/> |
| V.   | Program Funding and Facilities-Budget Report                       | <input checked="" type="checkbox"/> |
| VI.  | Articulation with Main Campus (if appropriate)                     | <input checked="" type="checkbox"/> |
| VII. | Summary: Program's Strengths, Weaknesses and Vision for the Future | <input checked="" type="checkbox"/> |

# Valencia Campus Program Review Worksheet

## I. Description of the Program's Mission

According to the Bureau of Labor Statistics, “increases in overall construction activity stemming from U.S. population growth and the related need to improve the Nation’s infrastructure should spur demand for drafters trained in architectural and civil design.” Computers have taken over production drawing and are now being used in a variety of related fields; virtually all technical and scientific disciplines use technical drawings and are adopting computer-aided drawing and modeling. The Associate of Applied Science in Computer-Aided Drafting includes general education courses and is designed to improve analytic and communication skills. The core of the program consists of CADT courses with a heavy emphasis on lab work. Drafting conventions are covered in the architectural and technical drafting courses. Upon completion of the Associate of Applied Science in Computer-Aided Drafting program, students are prepared for entry-level positions as CAD operators. Graduates of the program have been successfully placed, and many have already advanced to technician and project management positions. The Associate of Applied Science in Computer-Aided Drafting degree, while occupational in nature, can be transferred to the UNM-Main and applied toward a Bachelor's in Organization, Information and Learning Sciences in the College of Education and a Bachelor of Liberal Arts. However, career-technical courses are not guaranteed to transfer as credit. Additionally, grades earned in technical courses are not to be included in the grade point average at the UNM- Main and may not be included in the GPA at other four-year institutions.

## II. Description of the Program's Goals

- The Computer Aided Drafting program provides students with quality instruction to facilitate mastery of the knowledge, skills and behaviors necessary to be successful in the computer aided drafting professions.

## III. Description of Program's Assessment

- CADT Associate Plan – **Appendix I**
- CADT Associate Report – **Appendix II**
- CADT Certificate Plan – **Appendix III**
- CADT Certificate Report – **Appendix IV**

#### **IV. Changes in Trends in Enrollment (Over the last 5 years)**

- Since 2012, **5** students declared their major to be Computer-Aided Drafting. **2** of these students are Hispanic. The average age of these students is 35. **4** are male and **1** is female.
- Since 2012, **674** unique students enrolled in CADT specific courses, 5 of which are current CADT majors who have not completed their degrees or transferred to Main Campus.
- The actual unique student enrollment by years is as follows:
  - 2012 – **145**
  - 2013 – **162**
  - 2014 – **116**
  - 2015 – **126**
  - 2016 – **95**
  - 2017 – **30**

#### **V. Program Funding and Facilities-Budget Report**

This is a Career-Technical Educational (CTE) program. None of the courses offered in the program are core courses and only **1** transfers to Main Campus – CS 150L Computing for Business Students. Only **3** courses in this program would be offered without this program – IT 121 Electronic Spreadsheets, an IT Elective, and CS 150L Computing for Business Students. The Practicum/Cooperative Education course (CADT 295) is offered as an arranged/independent study course. No courses are currently offered online.

#### **VI. Articulation with Main Campus**

This program encompasses terminal degrees/certificates that is not offered on Main Campus.

#### **VII. Summary**

This program has seen a decline in enrollment over the past 5 years and has few declared majors. Although this is a campus-wide trend, this program shows a huge decline in students. The 3D Printing Certificate has helped generate some interest in the program, but enrollment is still low. Nonetheless, I do see this program surviving with some restructure. Recently, a meeting with the Chair and Advisor of the School of Architecture put into place a plan to create a 1 + 3 agreement with UNM – Valencia. Within a few years, the plan is to transform this into a 2 + 2 agreement. We could then use much of the curriculum we already teach, adopt the ARCH (Architecture) prefix, and many of our courses in CADT would transfer to bachelor's degree programs within the School of Architecture & Planning at Main Campus. I believe this will boost enrollment and provide clearer paths of transferability for our students.

## **Appendix I – Associate Assessment Plan**

Associate of Applied Science in Computer-Aided Drafting Assessment Plan

The University of New Mexico

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### **A. College, Department and Date**

1. College: *Valencia Branch*
2. Department: *Business, Technology and Fine Arts*
3. Date: *11-8-2017*

### **B. Academic Program of Study\***

*Associate of Applied Science in Computer-Aided Drafting*

### **C. Contact Person(s) for the Assessment Plan**

*Alexa Wheeler, Division Chair, [alexa08@unm.edu](mailto:alexa08@unm.edu)*

### **D. Broad Program Goals & Measurable Student Learning Outcomes (SLOs)**

#### **1. Broad Program Learning Goal(s) for this Degree/Certificate Program**

The Computer Aided Drafting program provides students with quality instruction to facilitate mastery of the knowledge, skills and behaviors necessary to be successful in the computer aided drafting professions.

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\* Academic Program of Study is defined as an approved course of study leading to a certificate or degree reflected on a UNM transcript. A graduate-level program of study typically includes a capstone experience (e.g. thesis, dissertation, professional paper or project, comprehensive exam, etc.).

## 2. List of Student Learning Outcomes (SLOs) for this Degree/Certificate Program

Upon successful completion, students will demonstrate that they have developed the ability to:

- A. Communicate effectively in both oral and written form and use basic math to solve drawing problems.
- B. Understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.
- C. Work as an entry level CAD operator in engineering firms.
- D. Complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.

### E. Assessment of Student Learning Plan

#### 1. Student Learning Outcomes

Relationship to UNM Student Learning Goals (insert the program's SLOs and check all that apply):

University of New Mexico Student Learning Goals				
Program SLOs	Knowledge	Skills	Responsibility	Program SLO is conceptually different from university goals.
Students will demonstrate that they have developed the ability to communicate effectively in both oral and written form and use basic math to solve drawing problems.	x	x		
Students will demonstrate that they have developed the ability to understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.	x	x		
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	x	x	x	
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	x	x	x	

## 2. How will learning outcomes be assessed?

Assessing Student Learning Goals			
Program SLOs	Assessment Measures	Direct or Indirect	Criteria for Success
Students will demonstrate that they have developed the ability to communicate effectively in both oral and written form and use basic math to solve drawing problems.	Student performance in ENGL 101 and MATH 120 will be measured.	Direct	All students should earn a B- or higher in ENGL101 and MATH 120
Students will demonstrate that they have developed the ability to understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.	CAD 150 Vacation House working-drawing assignment	direct	All students should earn a B- or higher on Vacation House CAD working-drawing assignment
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	Student performance in their internship experience, as based on a passing grade in CADT 295.	Direct	All students should earn a B- or higher for the CAD 295 internship course.
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	Performance on required CAD 295 and math 120	direct	All students should earn a B- or higher in CAD 295 and math 120

B. Who: All students in the program are assessed.

**3. When will learning outcomes be assessed? When and in what forum will the results of the assessment be discussed?**

Program SLOs	Year/Semester Year
Students will demonstrate that they have developed the ability to communicate effectively in both oral and written form and use basic math to solve drawing problems.	Year 1, Fall 2015 ENGL101 and MATH 120
Students will demonstrate that they have developed the ability to understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.	Year 1, Spring 2016 CAD 150
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	Year 2, Fall 2016 CADT 295
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	Year 2, Spring 2017 CAD 295 and MATH 120

Results are discussed by the chair and professor in the CARC meetings for program assessment.

**4. What is the unit's process to analyze/interpret assessment data and use results to improve student learning?**

All faculty teaching in the program are made aware of the results by the division chair. The chair and faculty will have already reviewed results and suggestions actions with the CARC, who will have provided feedback and a timeline of next steps.



**Appendix II - Associate Assessment Report**

**Part I: Cover Page**

**UNM Academic Programs Assessment Report  
Record for Assessment of Student Learning Outcomes  
The University of New Mexico**

<b><u>Title of Degree or Certificate Program</u></b>	<b><u>Degree Level</u></b> <i>(Certificate, Associate, Bachelors, Master's, etc.)</i>
Computer-Aided Drafting	Associate

Name of Academic Department (if relevant): Business, Technology and Fine Arts

Name of College/School/Branch: Valencia

Academic Year/Assessment Period: 2016-2017

Submitted By (include email address): Alexa Wheeler, alexa08@unm.edu

Date Submitted to College/School/Branch for Review: 11-8-2017

Date Reviewed by College Assessment and Review Committee (CARC) or the equivalent:

State whether ALL of the program's student learning outcomes (SLOs) are targeted/assessed/measured within one year, two years, OR three years: Two years

If the program's SLO's are targeted/assessed/measured within two years or three years, please state whether this assessment record focuses on SLOs from the first year, second year, or third year: Second year

Describe the actions and/or improvements that were implemented during the previous reporting period (provide relevant evidence):

Student Learning Outcomes	UNM Student Learning Goals (Knowledge, Skills, and/or Responsibility)	Assessment Measures incl. Measure Type (Direct or Indirect)*	Performance Benchmark	Data Results*	Data Analysis*	Recommendations for Improvement/ Changes*
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	Knowledge, skills and responsibility	Student performance in their internship experience, as based on a passing grade in CADT 295. (direct)	All students should earn a B- or higher for the CAD 295 internship course.	One CAD AAS graduate earned an A for the CAD 295 internship	Only one student, so no analysis possible	No changes
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	Knowledge, skills and responsibility	Performance on required CAD 295 and math 120. (direct)	All students should earn a B- or higher in CAD 295 and math 120	One CAD AAS graduate earned an A for both CAD 295 and Math 120	Only one student, so no analysis possible	No changes

## Part II: Assessment Report

**Program Goal:** The Computer Aided Drafting program provides students with quality instruction to facilitate mastery of the knowledge, skills and behaviors necessary to be successful in the computer aided drafting professions.

## **Appendix III – Certificate Assessment Plan**

### Certificate in Computer-Aided Drafting Assessment Plan

The University of New Mexico

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#### **A. College, Department and Date**

1. College: *Valencia Branch*
2. Department: *Business, Technology and Fine Arts*
3. Date: *11-8-2017*

#### **B. Academic Program of Study\***

*Certificate in Computer-Aided Drafting*

#### **C. Contact Person(s) for the Assessment Plan**

*Alexa Wheeler, Division Chair, [alexa08@unm.edu](mailto:alexa08@unm.edu)*

#### **D. Broad Program Goals & Measurable Student Learning Outcomes (SLOs)**

##### **1. Broad Program Learning Goal(s) for this Degree/Certificate Program**

The Computer Aided Drafting program provides students with quality instruction to facilitate mastery of the knowledge, skills and behaviors necessary to be successful in the computer aided drafting professions.

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\* Academic Program of Study is defined as an approved course of study leading to a certificate or degree reflected on a UNM transcript. A graduate-level program of study typically includes a capstone experience (e.g. thesis, dissertation, professional paper or project, comprehensive exam, etc.).

## 2. List of Student Learning Outcomes (SLOs) for this Degree/Certificate Program

Upon successful completion, students will demonstrate that they have developed the ability to:

- E. Communicate effectively in both oral and written form and use basic math to solve drawing problems.
- F. Understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.
- G. Work as an entry level CAD operator in engineering firms.

Complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.

### E. Assessment of Student Learning Plan

#### 1. Student Learning Outcomes

Relationship to UNM Student Learning Goals (insert the program's SLOs and check all that apply):

<b>University of New Mexico Student Learning Goals</b>				
<b>Program SLOs</b>	Knowledge	Skills	Responsibility	Program SLO is conceptually different from university goals.
Students will demonstrate that they have developed the ability to communicate effectively in both oral and written form and use basic math to solve drawing problems.	x	x		
Students will demonstrate that they have developed the ability to understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.	x	x		
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	x	x	x	
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	x	x	x	

## 2. How will learning outcomes be assessed?

<b>Assessing Student Learning Goals</b>			
<b>Program SLOs</b>	<b>Assessment Measures</b>	<b>Direct or Indirect</b>	<b>Criteria for Success</b>
Students will demonstrate that they have developed the ability to communicate effectively in both oral and written form and use basic math to solve drawing problems.	Student performance in ENGL 101 and MATH 120 will be measured.	Direct	All students should earn a B- or higher in ENGL101 and MATH 120
Students will demonstrate that they have developed the ability to understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.	Performance on CAD 195 final drawing assignment	direct	All students should earn a C average or higher on CAD 195 final drawing assignment
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	Student performance in their internship experience, as based on a passing grade in CADT 295.	Direct	All students must earn a C or better in the CADT 295 internship course.
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	Performance on required academic courses	direct	All students must earn a final grade of C or better in at least 75% of the required academic courses

B. Who: All students in the program are assessed.

## 3. When will learning outcomes be assessed? When and in what forum will the results of the assessment be discussed?

Program SLOs	Year/Semester Year
Students will demonstrate that they have developed the ability to communicate effectively in both oral and written form and use basic math to solve drawing problems.	Year 1, Fall 2015 ENGL101 and MATH 120
Students will demonstrate that they have developed the ability to understand and apply necessary knowledge and skills in computer aided drafting. These skills prepare students to solve drawing problems and execute drawings using drafting and design software.	Year 1, Spring 2016 CAD 195
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	Year 2, Fall 2016 CADT 295
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	Year 2, Spring 2017 Academic Core Courses

Results are discussed by the chair and professor in the CARC meetings for program assessment.

**4. What is the unit's process to analyze/interpret assessment data and use results to improve student learning?**

All faculty teaching in the program are made aware of the results by the division chair. The chair and faculty will have already reviewed results and suggestions actions with the CARC, who will have provided feedback and a timeline of next steps.

**Appendix IV – Certificate Assessment Report**

**Part I: Cover Page**

**UNM Academic Programs Assessment Report**  
**Record for Assessment of Student Learning Outcomes**  
**The University of New Mexico**

<b><u>Title of Degree or Certificate Program</u></b>	<b><u>Degree Level</u></b> <i>(Certificate, Associate, Bachelors, Master's, etc.)</i>
Computer-Aided Drafting	Certificate

Name of Academic Department (if relevant): Business, Technology and Fine Arts

Name of College/School/Branch: Valencia

Academic Year/Assessment Period: 2016-2017

Submitted By (include email address): Alexa Wheeler, alexa08@unm.edu

Date Submitted to College/School/Branch for Review: 11-8-2017

Date Reviewed by College Assessment and Review Committee (CARC) or the equivalent:

State whether ALL of the program's student learning outcomes (SLOs) are targeted/assessed/measured within one year, two years, OR three years: Two years

If the program's SLO's are targeted/assessed/measured within two years or three years, please state whether this assessment record focuses on SLOs from the first year, second year, or third year: Second year

Describe the actions and/or improvements that were implemented during the previous reporting period (provide relevant evidence):

**Part II: Assessment Report**

**Program Goal:** The Computer Aided Drafting program provides students with quality instruction to facilitate mastery of the knowledge, skills and behaviors necessary to be successful in the computer aided drafting professions.

Student Learning Outcomes	UNM Student Learning Goals (Knowledge, Skills, and/or Responsibility)	Assessment Measures incl. Measure Type (Direct or Indirect)*	Performance Benchmark	Data Results*	Data Analysis*	Recommendations for Improvement/ Changes*
Students will demonstrate that they have developed the ability to work as an entry level CAD operator in engineering firms.	Knowledge, skills and responsibility	Student performance in their internship experience, as based on a passing grade in CADT 295. (direct)	All students should earn a B- or higher in ENGL101 and MATH 120,	No CAD Certificate graduates for Fall 2016 or Spring 2017	NA	NA
Students will demonstrate that they have developed the ability to complete transferrable academic courses that can be applied in the College of Education or in the School of Engineering and Architecture and Planning.	Knowledge, skills and responsibility	Performance on required academic courses. (direct)	All students must earn a final grade of C or better in at least 75% of the required academic courses	No CAD Certificate graduates for Fall 2016 or Spring 2017	NA	NA