



Computer-Aided Drafting

Online Certificate

(Funded through 2011 TAA-CCCT Grant)

Submitted by:

Dr. Cathy Anderson, Vice President

James Loverich, CAD Instructor

Todd Anderson, CAD Instructor

May 8, 2012

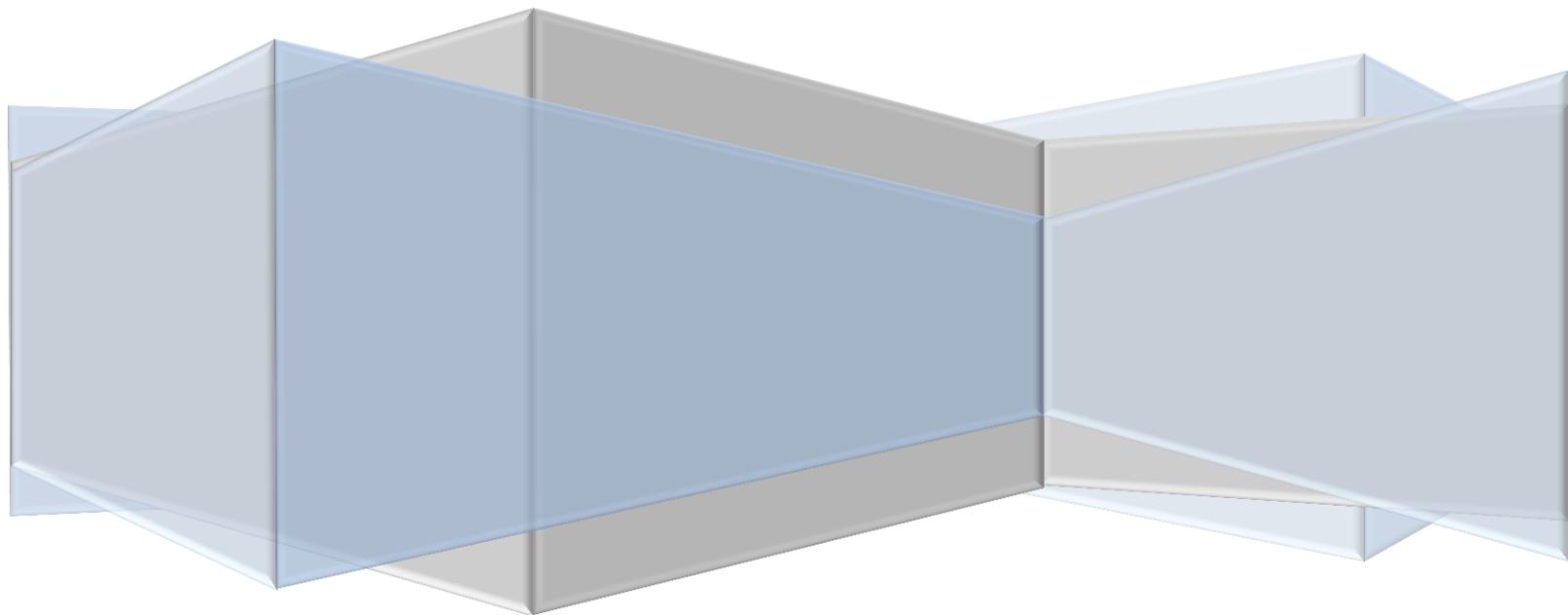


Table of Contents

EXECUTIVE SUMMARY	2
IDENTIFICATION AND DESCRIPTION OF THE PROGRAM	3
OBJECTIVES AND PURPOSE OF THE PROGRAM	3
PROGRAM OUTCOMES	3
METHODS OF OBTAINING THE OBJECTIVES OF THE PROGRAM.....	4
POPULATION SERVED BY THE PROGRAM	4
PROJECTED THREE-YEAR BUDGET	4
PROGRAM COMPETENCIES AND ENTRY AND EXIT POINTS OF SUBOCCUPATIONS	4
STATEMENT OF NON-DUPLICATION	5
CURRICULUM DESIGN	5
WAGE FACTOR	5
EMPLOYMENT OUTLOOK.....	5
APPENDIX A – COMPUTER-AIDED DRAFTING ONLINE CERTIFICATE CURRICULUM	6
APPENDIX B – LETTERS OF SUPPORT	7

Computer-Aided Drafting Online Diploma Program

EXECUTIVE SUMMARY

Western Dakota Technical Institute is seeking approval to enhance the Computer-Aided Drafting program by adding an online diploma to the existing Associate of Applied Science in Computer Aided Drafting. This diploma will provide those individuals who are currently employed, in a related field such as engineering, architecture or manufacturing, with an opportunity to add to their skills and job enhancement. This program will also focus on the integration of green technologies in the manufacturing and architectural field of CAD. In addition, this will also provide a “fast-track option” to individuals who have related work experience and wish to add CAD skills to enhance their career opportunities and to provide students with an option for completing the first two semesters of their CAD AAS degree online.

This online diploma will be developed by Western Dakota Technical Institute as an initiative under the Trade Adjustment Assistance-Community College and Career Training grant program received by Lake Area Technical Institute. Providing skill training and development in Computer Aided Drafting is the key to meeting the needs of the construction, manufacturing, and engineering industries.

Adding this diploma will meet industry needs that are expected to grow locally and regionally. Nationally it is expected that employment in this field will grow at a rate of 11.4%, according to the Federal Bureau of Labor. Employment as Computer Aided Drafting technicians encompasses fields such as manufacturing, architecture, construction and mining.

IDENTIFICATION AND DESCRIPTION OF THE PROGRAM

The Computer Aided Drafting online diploma is expected to meet the growing demand from industry for skilled technicians who can demonstrate skill and knowledge in 2D and 3D computer-aided drafting, and to green technology as it applies to building design and manufacturing. In addition, the student will leave the program prepared to apply the basic fundamentals of drafting and blueprint reading.

OBJECTIVES AND PURPOSE OF THE PROGRAM

The primary purpose of the CAD diploma option is to provide students, specifically those who are seeking employment, a fast-track option, to enter the field of Computer-Aided Drafting as skilled technicians. The diploma option will provide students with entry level skills specific to the CAD field utilizing a short term training program that allows them to return quickly to the workforce. It will also provide those who are already employed with an opportunity for retraining for advancement in their careers. This program may also be a benefit for students who have attained a four year degree in engineering, architecture, and other related fields who wish to upgrade their skills in the application of CAD software. Upon completion of the diploma, students will be able to continue their education at WDTI and earn their AAS by completing two additional semesters.

This program will also provide “fast track” training which WDTI has agreed to provide in the field of computer-aided drafting under the TAA-CCCT grant.

PROGRAM OUTCOMES

- Demonstrate knowledge of drafting and blueprint reading
- Apply CAD software to develop basic architectural, civil, and mechanical drawings.
- Understand best practices related to architectural, civil, and mechanical designs.
- Engage in professional dialogue to effectively convey and receive technical information.

METHODS OF OBTAINING THE OBJECTIVES OF THE PROGRAM

The diploma option will be entirely online. The AAS will continue to be provided via face to face classroom delivery. In order to ensure ongoing continuous improvement the faculty will work with our industry partners to ensure that the knowledge and skills gained by students will meet the standards of industry.

POPULATION SERVED BY THE PROGRAM

This program is being developed to meet the agreement requirement for Western Dakota Technical Institute under the TAA-CCCT grant. The specifications of the grant require that the technical institutes implement programs, strategies and technology to expand our capacity to meet the training and education needs of the workforce.

The program will be open to full time and part time students. No restrictions will be made regarding race, creed, gender or age. The program will draw students primarily from South Dakota.

The program will serve graduates from other WDTI programs such as Electrical Trades, Welding, Environmental Engineer Tech, et cetera who want to enhance their knowledge of CAD as it applies to their course of study. This program will also serve the existing workforce who has been laid off due to the impact of international trade. The program is also being offered online to increase opportunities for those students in remote locations wishing to enhance their skills.

PROJECTED THREE-YEAR BUDGET

This program will share instructors with the existing CAD program at WDTI. The grant provides for the hiring of a CAD online program manager who will assist in developing the online components of the program and some instruction. This position is fully funded under the TAA-CCCT grant.

PROGRAM COMPETENCIES AND ENTRY AND EXIT POINTS OF SUBOCCUPATIONS

Entry point: Fall Semester

Exit point: Graduation with a Computer-Aided Drafting Diploma after two full-time semesters

STATEMENT OF NON-DUPLICATION

Western Dakota Tech is proposing this program to meet industry needs for a fast-track CAD diploma program. There are no other two semester online CAD programs in South Dakota.

CURRICULUM DESIGN

See Appendix A for Curriculum Sequence

WAGE FACTOR

Placement data from the AAS offered by WDTI indicates that graduates were being hired at an average hourly wage of \$14.58 per hour for 2009 and \$15.63 in 2011.

EMPLOYMENT OUTLOOK

There are many industries in the state of South Dakota which are anticipated to expand due to increased demand for skilled technicians in manufacturing, mining and construction. According to industry projections for the State of South Dakota industries such as nonmetallic mineral production, machining manufacturing and construction of buildings are industries that are all expected to grow in the state, based upon State of South Dakota Department of Labor projections. In these related fields, such as civil drafting employment, between 2008 – 2018 is anticipated to grow at 12.0 percent, mechanical drafters at 16.7%, mechanical engineering technician at 23.5%. The Bureau of Labor Standards projects the machinery manufacturing, which creates end products, such as gears and mechanical elements to perform work is projected to grow at 21.7 percent in the State of South Dakota, this field is one of the fastest growing industries in the state.

Computer Aided Drafting CIP Code: 15.1301

APPENDIX A – COMPUTER-AIDED DRAFTING ONLINE CERTIFICATE CURRICULUM

NUMBER	TITLE	PRE REQS	CREDITS
FIRST SEMESTER			
CAD 101	DRAFTING FUNDAMENTALS		3
CAD 132	INTRODUCTION TO 2D CAD		3
CAR 216	BLUEPRINT READING		2
CIS 105	MICROCOMPUTER SOFTWARE APPLICATIONS I		3
MATH 104	TECHNICAL MATHEMATICS		3
PSYC 103	HUMAN RELATIONS IN THE WORK PLACE		3
ORT 030	ONLINE ORIENTATION		1
	TOTAL		18
SECOND SEMESTER			
CAD 111	ARCHITECTURAL DRAFTING I	CAD 135, CAD 132	3
CAD 140	ADVANCED 2D CAD	CAD 132	3
CAD 214	INTRO TO CIVIL DRAFTING	CAD 132	3
CAD 232	MECHANICAL PRINCIPLES	CAD 132	3
CAD 255	INTRODUCTION TO 3D CAD	CAD 140	3
ENG 201	TECHNICAL WRITING		3
	TOTAL		18
	TOTAL CERTIFICATE CREDITS		36

APPENDIX B – LETTERS OF SUPPORT

Architecture



Incorporated

A.R. Dargatzis, AIA, LEED® AP
Mark Apgas, AIA
Steve Jostrom, AIA
Patti Manson, Assoc. AIA, LEED® AP
Elizabeth Szyper, AIA
Sarah Aldinger, AIA, LEED® AP
Lisa Ward/Voon, LEED® AP
Michael Aldinger, AIA, LEED® AP
Kris Anderson
Kristine Bjerke, AIA, LEED® AP
Jordan Barbock, Assoc. AIA
Diane de Koeijer, Assoc. AIA
Catherine DeBorja, LEED® GA
Andrew Elmsie, LEED® AP
Kelly Evans
Ben Gröbäl, Assoc. AIA
Ryan Haber, Assoc. AIA
Maggie Job, NCIDQ, LEED® AP
Susan Kohler
Heather Morgan, NCIDQ
Kelli Mraz, NCIDQ, LEED® AP
Tisha Murphy
Jason Pittman, LEED® AP
Mandy Schneider
Adam Scholas
Dorsey Talaksian
Sandy Wulfswinkel, LEED® AP

415 South Main Avenue
P.O. Box 2140
Sioux Falls, SD 57101-2140
P. 605.339.1711
F. 605.339.2331

909 St. Joseph Street
Suite 202
P.O. Box 8047
Rapid City, SD 57709
P. 605.721.1158
F. 605.721.4114

www.architecturinc.com

Date: May3, 2012

Dr. Cathy Anderson, Vice President
Western Dakota Tech
800 Mickelson Drive
Rapid City, SD 57703

Dear Dr. Anderson:

I encourage the initiative of WDT to develop a two semester Computer Aided Drafting Diploma. As a manager of a Rapid City firm that hires CAD technicians, I am very aware of the need for a source of well trained and educated persons in this field.

I have had the opportunity to review the list of courses and descriptions proposed for this diploma and believe the content would be appropriate for several situations:

1. A person who has some form of industry experience and needs to gain CAD experience.
2. A person who already has a post-secondary degree, but needs to gain CAD experience.
3. A person who is currently working in a CAD related field, but would like to be brought up to speed with the latest CAD software.

I look forward to playing an integral role in the development of this program in order to ensure that we are appropriately preparing successful CAD technicians.

Sincerely,

Kristine Bjerke, AIA
Principal Architect



May 3, 2012

Dr. Cathy Anderson, Vice President
Western Dakota Tech
800 Mickelson Drive
Rapid City, SD 57703

Dear Dr. Anderson:

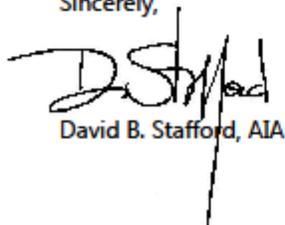
I encourage the initiative of WDT to develop a two semester Computer Aided Drafting Diploma. As a manager of a Rapid City firm that hires CAD technicians, I am very aware of the need for a source of well trained and educated persons in this field.

I have had the opportunity to review the list of courses and descriptions proposed for this diploma and believe the content would be appropriate for several situations:

1. A person who has some form of industry experience and needs to gain CAD experience.
2. A person who already has a post-secondary degree, but needs to gain CAD experience.
3. A person who is currently working in a CAD related field, but would like to be brought up to speed with the latest CAD software.

I look forward to playing an integral role in the development of this program in order to ensure that we are appropriately preparing successful CAD technicians.

Sincerely,



David B. Stafford, AIA



Caterpillar Inc.
525 University Loop, Suite 116
Rapid City, SD 57701

May 7, 2012

Dr. Cathy Anderson, Vice President
Western Dakota Tech
800 Mickelson Drive
Rapid City, SD 57703

Dear Dr. Anderson:

I encourage the initiative of WDT to develop a two semester Computer Aided Drafting Diploma. As a manager of a Rapid City firm that hires CAD technicians, I am very aware of the need for a source of well trained and educated persons in this field.

I have had the opportunity to review the list of courses and descriptions proposed for this diploma and believe the content would be appropriate for several situations:

1. A person who has some form of industry experience and needs to gain CAD experience.
2. A person who already has a post-secondary degree, but needs to gain CAD experience.
3. A person who is currently working in a CAD related field, but would like to be brought up to speed with the latest CAD software.

I look forward to playing an integral role in the development of this program in order to ensure that we are appropriately preparing successful CAD technicians.

Sincerely,

Wayne Baumberger
Engineering Manager
Caterpillar Inc.