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PREPARE FOR
A GREAT CAREER IN
COMPUTER-AIDED
DRAFTING &
DESIGN

DRAFTING
TECHNICIAN
IS A GOOD
CAREER FIELD

Good-paying jobs are waiting for trained applicants

The Colorado Department of Labor and Employment forecasts that over the next seven years there will be 106 openings per year for architectural and civil drafters; 42 openings per year for electrical and electronics drafters; and 41 openings per year for mechanical drafters.

INSTRUCTOR PROFILE Ben Shepard



Ben teaches AutoDesk 3D Max, an animation program, which is exactly what he uses at Neenan Archistruction. "I take a project from another computer program, and I'll work to make it look really fancy," he says. Working with 3D Max, he can add parking lots, grass, rocks, curbs and gutters, and then create a 3D video for the client.

Ben has a bachelor of science in interior design from Colorado State University, where, as a senior, he taught 3D. "I played with it all the time, and I turned it into a career," he says. He likes teaching 3D Max at FRCC, which has the most up-to-date software package available, because "it improves my skills in all aspects of the program. It keeps me updated, too. I love helping people out and getting people excited about things."



CAD graduate Bob Kabat checks his drawings at a construction site

CAD jobs

	Colorado Mean
Architectural and Civil Drafters	\$46,790/yr
Electrical and Electronic Drafters	\$55,770/yr
Mechanical Drafters	\$49,260/yr

U.S. Bureau of Labor Standards, May 2007

An Associate of Applied Science (A.A.S.) degree or certificate from Front Range Community College (FRCC) will help you get ready to work.

If you have a degree and/or one or more certificates from Front Range Community College, you show employers you achieved a higher standard. You are "job ready."

A career as a drafting technician could be right for you. There are so many industries from which to choose: architecture, construction, civil engineering, theater design, horticulture and landscape design, interior design, surveying, mechanical design, lighting design, electrical design, city planning, heating, ventilation, and air conditioning, and animation (how do you think that football stadium in Sprint's TV commercial was created?). Come talk to us. Visit our classes. You will see we're focused on your success.

Do you want to get to work fast? With one or more of our certificates, you can move quickly into the workforce.

Are you already working in one of these fields? Come talk with us about upgrading your skills on the most up-to-date software you will find anywhere.

START YOUR BACHELOR'S DEGREE AT FRCC

Thinking of transferring? Start here

Although the A.A.S. degree gets you "job ready," FRCC is a good starting point before transferring to Colorado State University or the University of Colorado. Our faculty has worked closely with CSU and CU so several classes will transfer. As always, work closely with your CAD Program advisor.

STUDENT PROFILE Mollie Simpson



Mollie's versatility helped her get a job with Neenan Architecture, where she has worked in the design department for a year and a half. She has three CAD certificates from FRCC, plus an A.A.S. degree in Architectural Engineering and Construction Technology. At Neenan, Mollie works with design architects

in the health-care department on hospitals and clinics anywhere in the United States. "CAD helped me a lot," Mollie says. "I know enough about each of the programs. That's why I got hired. I'm versatile. My AEC background lets me do everything from drafting to helping out with floor layouts." Mollie is still a student at FRCC, taking two guaranteed-transfer classes. Her goal is to complete a bachelor's degree in art history from Colorado State University, then go on for a master's degree in architecture.

INSTRUCTOR PROFILE Claudia Romero



Claudia, the program director at the Larimer Campus, has a bachelor of science in interior design from Colorado State University, where she also earned a master's in education. She was a pioneer in introducing CAD to the firms where she worked in private industry. She has worked for a design center, an architect, a landscape architect, and a landscape company. Now, she teaches CAD and interior design. "I love to teach," she says. "It's a lot of fun and rewarding, working with students. I like to see them grow. I like to be a part of their future and the challenges along the way." Claudia also serves at the state level as a member of the CAD Curriculum Discipline Team as well as co-chair of the Interior Design Curriculum Discipline Team.

Learn from the best instructors in the business

Our faculty and instructors have real-life experiences to share that help make their subjects real and exciting. They'll answer all your questions. You can expect to learn a lot and have a great time doing it in small classes designed to accommodate your work schedule. You will get lots of hands-on training.

The most up-to-date software anywhere

When we say you'll learn on current software programs, we mean it. We update with every release:

- AutoDesk AutoCAD
- AutoCAD Architecture
- AutoCAD Civil 3D
- AutoDesk Revit Architecture
- AutoDesk Inventor
- AutoDesk Land Desktop
- AutoDesk MAX 3D
- AutoDesk Revit Structure
- SolidWorks 2008/2009
- SDS2
- And MasterCam and Sketchup are in course development

INSTRUCTOR PROFILE Rod Atkins



When Rod started teaching at FRCC 29 years ago, mechanical drawings were done by hand. Times have changed, and so has Rod, faculty at the Westminster Campus. He is so up to date on curriculum he serves on the statewide faculty curriculum committee. Rod believes what he teaches "should reflect real-life

applications. I try to make the program as real as I can. I show students manufacturing processes, taking a project from concept to prototype." Rod's real-world industrial experience includes working as a drafter/designer for companies in the mechanical/air conveyor business and companies that manufactured underground low-profile mining front loaders and dump trucks. All that modern experience, but there is one area where Rod is definitely 20th century: vintage car racing.

STUDENT PROFILE Rick Longcrier



Rick has more than kept up with the times. When he graduated with an A.A.S. degree, the program was called Machine Drafting Technology – and most of the work was done by hand. "We were still drawing on the board, doing ink on acetate and Mylar," he says. Today, Rick is a mechanical designer at Air Comm Corp. in

Boulder, a manufacturer of high-performance heaters and air conditioners for turbine helicopters with clients worldwide. He works with CAD software called SolidWorks 2009. "I love the work," Rick says. "Every day is different. The pace is really fast. There's no time to get bored." Rick prepares design drawings for the company's products. With today's technology, his designs can go right from his computer to a rapid-prototype company, with the part ready for testing within days.

GET STARTED!

Contact Claudia Romero

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FRCC-Larimer Campus

Rod Atkins

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FRCC-Westminster Campus

3645 W. 112th Ave.
Westminster, CO 80031

Go to www.frontrange.edu/cad

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Course requirements
for a degree or certificate in

Computer -Aided Drafting and Design



Course requirements for Associate of Applied Science in Computer-Aided Drafting and Design

REQUIRED COURSES	CREDITS
CAD 100 Blueprint Reading for CAD	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 219 3D/MAX	3
CAD 289 Capstone	3
Required Electives: CIS, MGD	6
Choose one of the following drawing courses:	
AEC 101 Basic Architectural Drafting	4
ENT 131 Mechanical Drawing I	4
HLT 140 Landscape Design & Planning	4
IND 112 Graphic Communication	4
Total Required Credits	31

Required General Education Courses	Credits
ART 121 Drawing I	3
ENG 131 Technical Writing I	3
MAT 121 College Algebra	4
Social and Behavioral Sciences Elective	3
Science Elective	3
Total Required General Education Credits	16

Required Drafting and CAD Elective Courses	Credits
Students must work with a CAD Program Advisor in order to select 13 credits from among the following courses: (those appropriate in the student's occupational interests)	
AEC 102 Residential Construction Drawing	4
AEC 215 Elementary Site Planning	3
CAD 220 3D/MAX Advanced	3
CAD 224 REVIT	3
CAD 225 Architectural Desktop/AutoDesk	3
CAD 227 Advanced REVIT	3
CAD 228 SDS2	3
CAD 231 Land Desktop/AutoDesk	3
CAD 233 Civil 3D/AutoDesk	3
CAD 240 Inventor I/AutoDesk	3
CAD 244 Advanced Inventor	3
CAD 255 Solidworks/Mechanical	3
CAD 259 Advanced SolidWorks	3
CAD 275 Sketchup	1
GIS 101 Intro to Geographic Information Systems	3
HLT 130 Landscape Graphics Studio	3
IND 105 Intro to Interior Design	3

Required Drafting and CAD Elective Courses, continued	Credits
IND 114 Space Planning	3
MTE 110 Communication for Teamwork	3
Total Required for A.A.S. Degree	60

Course requirements for Certificates in Computer-Aided Drafting and Design

Advanced Architectural Computer-Aided Drafting

REQUIRED COURSES	CREDITS
CAD 202 Computer-Aided Drafting/3D	3
CAD 219 3D/MAX	3
CAD 224 REVIT	3
CAD 227 Advanced REVIT	3
CAD 289 Capstone	3
(or AEC 280 Internship or AEC 285 Independent Study)	
Any MGD Course	3
Total Required Credits for Certificate	18

Advanced Mechanical CAD

REQUIRED COURSES	CREDITS
CAD 201 Computer-Aided Drafting/Custom	3
CAD 219 3D/MAX	3
CAD 240 Inventor/AutoDesk	3
CAD 255 SolidWorks/Mechanical	3
CAD 289 Capstone	3
MTE 110 Manufacturing Communication and Teamwork	3
Total Required Credits for Certificate	18

Animation and Visualization CAD

REQUIRED COURSES	CREDITS
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 219 3D Studio Max	3
CAD 220 3D/MAX Advanced	3
CAD 289 Capstone	3
MGD Electives	3
Total Required Credits for Certificate	21

Basic Computer-Aided Drafting & Design

REQUIRED COURSES	CREDITS
CAD 100 Blueprint Reading for CAD	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer-Aided Drafting/3D	3
Total Required Credits for Certificate	15

Basic Mechanical CAD

REQUIRED COURSES	CREDITS
CAD 100 Blueprint Reading for CAD	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer-Aided Drafting/3D	3
ENT 131 Mechanical Drawing I	4
Total Required Credits for Certificate	19

Civil CAD

REQUIRED COURSES	CREDITS
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 231 Land Desktop/AutoDesk	3
CAD 233 Civil 3D/AutoDesk	3
(or GIS 101 Introduction to Geographic Information Systems)	
CAD 289 Capstone	3
Total Required Credits for Certificate	18

Landscape CAD Technician

REQUIRED COURSES	CREDITS
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 289 Capstone	3
HLT 130 Landscape Graphics Studio	3

REQUIRED ELECTIVE COURSES	CREDITS
Select an additional 6 credits from the following HLT courses:	
HLT 120 Principles of Xeriscape	2
HLT 140 Landscape Design and Planning	4
HLT 235 Principles of Grading and Drainage	3
HLT 236 Landscape Construction	4
HLT 237 Landscape Bidding and Estimating	2
HLT 250 Landscape Irrigation Design	3
Total Required Credits for Certificate	21