Computer Aided Drafting and Design - Associate of Applied Science Degree

Code: F_AAS_CAD4
Campus: Larimer and Westminster

This program provides advanced CAD skills to the student seeking a career within computer-aided drafting and design. The student will complete 2D and 3D projects using the most current releases of the CAD software. Upon completion of this AAS degree, the student is prepared to enter the workforce as a CAD technician.

This program will meet unique computer-aided drafting and design, CAD illustration, and graphics needs. With the growth of employment needs in small- to mid-sized companies, employers are increasingly seeking employees with advanced and specialized computer-aided drafting skills.

Coursework is offered on an open-entry basis: students may complete some of the courses, enter the workforce, and then return to complete the program or upgrade a specific skill. Some courses may not be offered every semester or at every campus. Please work with a program advisor in selection of your courses. Please contact Claudia Romero, 970-204-8632 at the Larimer Campus or Lisa Compton, 303-404-5612, at the Westminster Campus.

All courses applied to the degree must be completed with a grade of "C" or above.

REQUIRED COURSES	***CREDITS***
CAD 100 Print Reading for CAD	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 115 Sketchup	3
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 219 3DS/Max	3
CAD 262 3D Printing	3
CAD 289 Capstone	3
Required Electives: CIS, MGD	6
Choose one of the following drawing courses:	
AEC 101 Basic Architectural Drafting	4
EGT 101 Technical Drafting I	3
EGT 143 Civil/Survey Drafting I	3
HLT 130 Landscape Graphics Studio	3
Total Required Credits	***36***

REQUIRED GENERAL EDUCATION COURSES	***CREDITS***
ART 121 Drawing I	3
ENG 121 English Composition I OR	3
ENG 131 Technical Writing I	3
MAT 121 College Algebra	4
Natural & Physical Sciences elective from the AAS General Education Electives List	3
Social and Behavioral Sciences elective from the AAS General Education Electives List	3
Total Required General Education Credits	***16***

DRAFTING AND CAD ELECTIVE COURSES:

Students must work with a CAD program advisor in order to select at least 9 credits from among the following courses: (Those appropriate in the student's occupational interests)

AEC 102 Residential Construction Drawing	4
AEC 123 Commercial Construction Drawings	4
AEC 215 Elementary Site Planning	3
CAD 216 Advanced Sketchup	3
CAD 220 3DS/Max Advanced	3
CAD 222 Navisworks/AutoDesk	3
CAD 224 Revit Architecture	3

CAD 225 AutoCAD Architecture	3
CAD 227 Advanced Revit Architecture	3
CAD 229 Revit Structure	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
EGT 205 Geometric Dimensioning & Tolerance	3
GIS 101 Intro to Geographic Information Systems	3
HLT 140 Landscape Design & Planning	4
IND 114 Space Planning	3
IND 200 Kitchen & Bath Design I	4
IND 261 Advanced Kitchen & Bath Design	4
MTE 110 Manufacturing Communication and Teamwork	3
Total Required Elective Credits	**9**
Total Required Credits for AAS Degree	**61**

GAINFUL EMPLOYMENT DISCLOSURE INFORMATION

The U.S. Department of Education requires colleges to disclose a variety of information for any financial-aid-eligible program that "prepares students for gainful employment in a recognized occupation." The information provided here is the best available to us but represents one year's data only. We hope that this information is helpful to our current students and to prospective students as they make their career and educational choices. For more Gainful Employment information, please go to the FRCC website: www.frontrange.edu/GainfulEmployment.

Computer-Aided Drafting and Design - Certificates

This program provides career opportunities to the advanced computer-aided drafting and design technician. It is designed to offer advanced training for the professional and technician already in the field or for students in a related drafting program.

Assessment testing is required for all students. Students who are reading at the college level and place into CCR 093 or above and MAT 055 or above may begin this program of study. All courses applied to the certificates must be completed with a grade of “C” or above.

Advanced Architectural Computer-Aided Drafting Certificate

Code: F_CER_CADA
Campus: Larimer and Westminster

See also Architectural Engineering and Construction Technology.

This certificate offers advanced training in CAD for the professional or technician already employed in the field, or for students working towards the architectural concentration within the CAD or Architectural Engineering and Construction Technology programs.

All courses applied to the certificates must be completed with a grade of “C” or above.

REQUIRED COURSES	***CREDITS***
CAD 115 Sketchup	3
CAD 216 Advanced Sketchup	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 219 3DS/MAX	3
CAD 224 Revit Architecture	3
CAD 227 Advanced Revit Architecture	3
CAD 289 Capstone	3
(or AEC 280 Internship or AEC 285 Independent Study)	
Any MGD Course	3
Total Required Credits for Certificate	**24**

Advanced Mechanical CAD Certificate

Code: F_CER_CADX
Campus: Larimer and Westminster

This certificate prepares students to become proficient in the use of advanced mechanical computer-aided drafting with a concentration in Mechanical CAD applications.

REQUIRED COURSES	***CREDITS***
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer Aided Drafting/3D	3
CAD 216 Advanced Sketchup	3
CAD 219 3DS/Max	3
CAD 255 Solidworks/Mechanical	3
CAD 262 3D Printing	3
CAD 289 Capstone	3
ELECTIVES (CHOOSE 3 Credits) MTE 110 Manufacturing Communication and Teamwork or CAD 240 Inventor I/Autodesk or CAD 244 Advanced Inventor or CAD 259 Advanced Solidworks	3
Total Required Credits for Certificate	**24**

Animation and Visualization CAD Certificate

Code: F_CER_CADV
Campus: Larimer and Westminster

See also Multimedia Technology.

This certificate prepares students to become proficient in the use of computer-aided drafting with a concentration in 3D graphics and animation and visualization applications.

REQUIRED COURSES	***CREDITS***
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 115 Sketchup	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 216 Advanced Sketchup	3
CAD 219 3DS/Max	3
CAD 220 3DS/Max Advanced	3
CAD 289 Capstone	3
MGD Electives	3
Total Required Credits for Certificate	**27**

Basic Computer-Aided Drafting and Design Certificate

Code: F_CER_CAD4
Campus: Larimer and Westminster

This certificate prepares students to become proficient in the use of computer-aided drafting.

REQUIRED COURSES	***CREDITS***
CAD 100 Print Reading for CAD	3
CAD 101 Computer-Aided Drafting I*	3
CAD 102 Computer-Aided Drafting II*	3
CAD 115 Sketchup	3
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer-Aided Drafting/3D	3

Total Required Credits for Certificate	**18**

*Interior Design Students must take CAD105 AutoCAD for Interiors (4 Credits) and CAD 216 Advanced Sketchup (3 credits), instead of CAD 101 and CAD 102.

Basic Mechanical CAD Certificate

Code: F_CER_CADM
Campus: Larimer and Westminster

This certificate provides instruction in basic drafting and the use of CAD technology.

REQUIRED COURSES	***CREDITS***
CAD 100 Print Reading for CAD	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 115 Sketchup	3
CAD 201 Computer-Aided Drafting/Custom	3
CAD 202 Computer-Aided Drafting/3D	3
EGT 101 Technical Drafting I	3
EGT 205 Geometric Dimensioning & Tolerance	3
Total Required Credits for Certificate	**24**

Civil CAD Certificate

Code: F_CER_CDV1
Campus: Larimer and Westminster

This certificate prepares students to become proficient in the use of computer-aided drafting with a concentration in Civil CAD applications.

REQUIRED COURSES	***CREDITS***
AEC 215 Elementary Site Planning	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 115 Sketchup	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 233 Civil 3D/Autodesk	3
(or GIS 101 Introduction to Geographic Information Systems)	
CAD 289 Capstone	3
EGT 143 Civil/Survey Drawing	3
Total Required Credits for Certificate	**24**

Landscape CAD Technician Certificate

Code: F_CER_CADL
Campus: Larimer and Westminster

See also Horticulture and Landscape Technologies.

This certificate integrates instruction in CAD technologies, landscape design and landscape construction to prepare students to become proficient in the use of computer-aided drafting as it is used in the landscape architecture and landscape design field.

REQUIRED COURSES	***CREDITS***
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 115 Sketchup	3
CAD 202 Computer-Aided Drafting/3D	3
CAD 289 Capstone or HLT 287	3
HLT 130 Landscape Graphics Studio	3
Total Required Credits	***18***

REQUIRED ELECTIVE COURSES	***CREDITS***
Select an additional 12 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	**30**