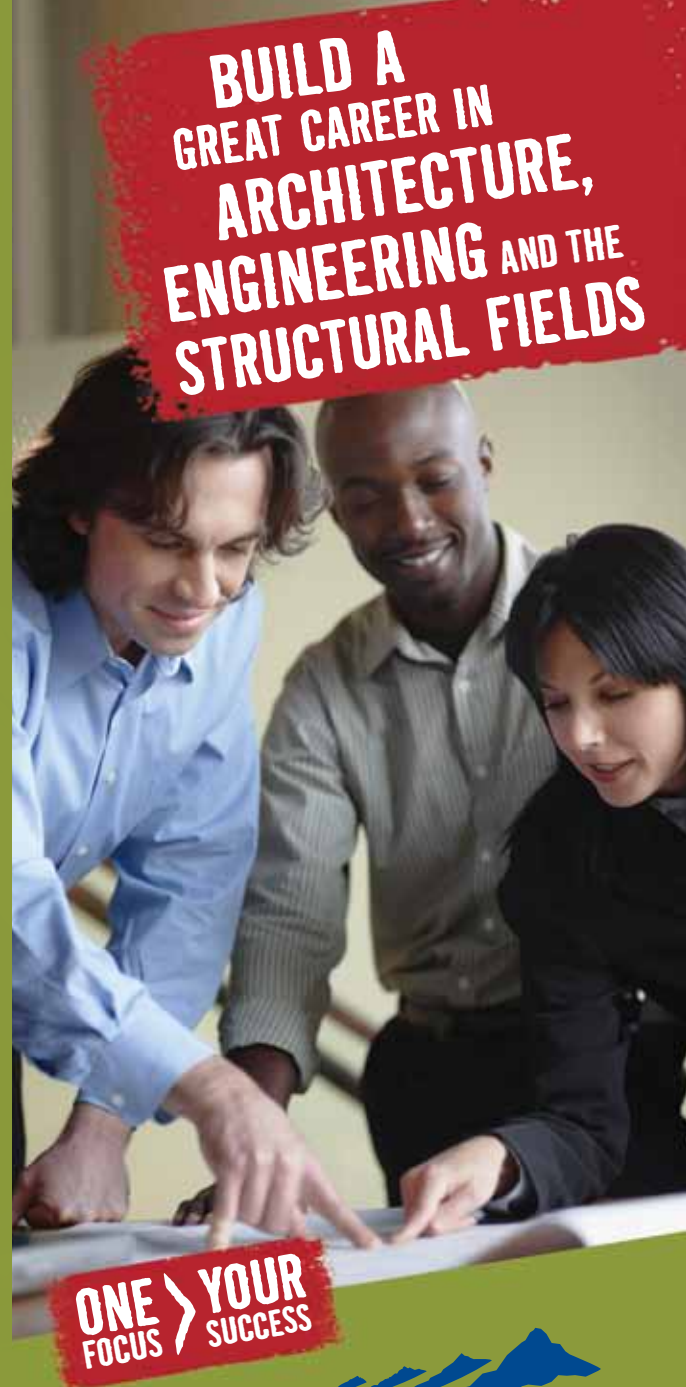




ONE > YOUR
FOCUS SUCCESS



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BUILD A GREAT CAREER IN ARCHITECTURE, ENGINEERING AND THE STRUCTURAL FIELDS

BECOME AN ENGINEERING TECHNICIAN OR BUILDING CONSTRUCTION MANAGER FOR GREAT CAREER OPPORTUNITIES

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; 41 openings per year for mechanical drafters; 71 openings per year for civil engineering technicians; 121 openings per year for construction and building inspectors; 1,191 openings per year for first-line construction supervisors/managers; and 822 openings per year for construction managers.

INSTRUCTOR PROFILE Lisa Compton



A licensed architect for more than 20 years, Lisa has been teaching for more than a dozen years. She discovered a talent for teaching while working full-time as an architect (when "I found out I was good at explaining how CAD works" to people at the firm, she says. Explaining complex skills to students is very satisfying. "The best part is definitely teaching and

seeing students' faces when they accomplish something." She has a five-year architectural degree from Arizona State University. She still maintains a small architecture practice, mainly in residential construction, but also some light commercial work, too.

FRCC has degree programs and certificates that prepare you for careers in those areas

- Architectural Engineering Technology and Building Construction Management – support architects, engineers, and construction industry leaders.
- Civil Engineering Technology – support civil engineers on large building structures or construction of roads, highways, bridges, tunnels, etc.
- Structural Engineering Technology – learn to produce shop drawings for steel fabricators and erectors.

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

Architectural Engineering, Civil Engineering, Structural Steel Engineering areas

	Colorado Mean
Architectural and Civil Drafters	\$46,790/yr
Electrical and Electronic Drafters	\$55,770/yr
Mechanical Drafters	\$49,260/yr
Civil Engineering Technician	\$49,030/yr

U.S. Bureau of Labor Standards, May 2007

Building Construction Management areas

	Colorado Mean
Construction and Building Inspectors	\$50,490/yr
First-Line Construction Supervisor/Manager	\$58,030/yr
National Median	
Building Equipment Contractors	\$75,200/yr
Electrical Contractors	\$74,380/yr
Nonresidential Building Construction	\$74,080/yr
Foundation, Structure, and Building Exterior Contractors	\$71,640/yr
Residential Building Construction	\$69,400/yr

U.S. Bureau of Labor Standards, May 2007

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

START HERE TO BECOME A LICENSED ARCHITECT

One of these careers could be just right for you. Do you like to draw or work with computers? Are you detail-oriented? Start from the ground up. 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 of our two- or three-semester 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.

INSTRUCTOR PROFILE Joe Wujek



If you have ever heard of someone, "He ought to write a book," that someone might be Joe. But not "a book." Joe has written two textbooks and has a third coming out in 2010. "Applied Statics and Strengths of Materials in Structural Design" and the fifth edition of "Mechanical and Electrical Systems in Architecture, Engineering, and Construction"

are used in the classroom. Coming up next is "Sustainable Building Systems." Joe has been teaching for 26 years. "Students are my life," he says. "Nothing is more enjoyable than working with students one-on-one." About that, Joe could probably write a book.

STUDENT PROFILE Patrick McCormick



Patrick is a general superintendent and estimator for Alliance Construction Solutions in Loveland. He also is a LEED (Leadership in Energy and Environmental Design) accredited professional. After serving as a submariner in the Navy, Patrick was living in Westminster, installing automatic doors for a living. He enrolled in the AEC

Program at the Westminster Campus and graduated with an A.A.S. degree, beginning work at Alliance before graduating. He has returned to FRCC to visit his teachers. "I want to show them what they turned out," he says. Patrick also uses his skills and serves his country in the Navy Reserves as a Seabee (the nickname for a member of a Construction Battalion).

You can even start at FRCC to become a licensed architect in Colorado

FRCC's AEC degree concentration in Architectural Engineering Technology is recognized as an approved path toward licensure in architecture by the Colorado State Board of Licensure for Architects, Professional Engineers and Professional Land Surveyors. Whether you start down this path with an A.A.S. or bachelor's and master's degrees, the time it takes to meet the requirements to be eligible to take the Architect Registration Examination (ARE) is the same – a total of about nine years of education and work experience. One difference: You're working in the real world faster.

Thinking of transferring? Start here

Although the A.A.S. degree gets you "job ready," FRCC is a good starting point before transferring to the University of Colorado-Boulder or Colorado State University. Our faculty has worked closely with CU and CSU so several AEC classes will transfer. Of course, there also are plenty of general-education classes guaranteed to transfer. As always, work closely with your advisor.

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. 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.

STUDENT PROFILE Shawna Lee



Shawna graduated in 2003 with an A.A.S. degree in Architectural Engineering Technology, having also taken the classes on the Construction Management side, too. Her company, The Lee Construct, consults in CAD management. Her experience is across the board in the AEC field – architectural offices and structures, civil and land development, corporate training, and software recommendations. Close to completing a Certificate in English Language Teaching to Adults from the University of Cambridge, Shawna also is considering taking her FRCC degree and work experience toward a degree in interior design, engineering, or architecture. Of her FRCC experience, Shawna says, "I loved the whole team and environment. Everyone worked together. We had a group of students who pushed for Revit, sustainable design, and an AEC club. The teachers facilitated that and went above and beyond."

INSTRUCTOR PROFILE Jeff Keely



Jeff is a licensed professional engineer in Colorado whose latest project is a bridge replacement over the South Platte River on Colorado Highway 7 near Brighton. Even with an extensive career as an engineer, Jeff loves to teach. "It's a curse, really," he says. It's also a family tradition; his 78-year-old father still teaches full-time at a community

college in Washington. Jeff has been bringing the real world of engineering into FRCC classrooms for 14 years. Jeff has bachelor's and master's degrees in civil engineering from the University of Washington.

GET STARTED!

Contact
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Go to www.frontrange.edu/waec

CAD 101 Computer Aided Drafting I	3
CAD 102 Computer Aided Drafting II	3
CAD 202 Computer Aided Drafting/3D or AEC 243 Computerized Steel Detailing	3
Total Required Credits	48

Required General Education Credits

ART 121 Drawing I	3
ENG 121 English Composition I	3
ENG 131 Technical Writing I	3
MAT 121 College Algebra	4
MAT 122 College Trigonometry	3
PHY 111 Physics: Algebra Based I with Lab	5
COM 115 Public Speaking	3
Total Required General Education Credits	24
Total Required Credits for A.A.S. Degree	72

Course requirements for certificates in Architectural Engineering and Construction Technology

Architectural Drafting

REQUIRED COURSES	CREDITS
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawing	5
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 123 Commercial Construction Drawings	5
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 202 Computer-Aided Drafting/3D (or CAD 224 Revit)	3
CIS 118 Introduction to PC Applications	3
Total Required Credits	33

REQUIRED GENERAL EDUCATION COURSES CREDITS

ART 121 Drawing I	3
ENG 121 English Composition I (or ENG 131 Technical Writing I)	3
MAT 099 Intermediate Algebra (or MAT 121 College Algebra)	4
Total Required General Education Credits	10
Total Required Credits for Certificate	43

Building Electrical/Mechanical Drafting

REQUIRED COURSES	CREDITS
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawing	5
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 123 Commercial Construction Drawings	5
AEC 208 Building Electrical Systems	2
AEC 210 Building Mechanical Systems	4
CAD 101 Computer-Aided Drafting I	3

CAD 102 Computer-Aided Drafting II	3
CAD 202 Computer-Aided Drafting/3D (or CAD 224 Revit)	3
CIS 118 Introduction to PC Applications	3
Total Required Credits	39

REQUIRED GENERAL EDUCATION COURSES CREDITS

ENG 121 English Composition I (or ENG 131 Technical Writing I)	3
MAT 121 College Algebra	4
Total Required General Education Credits	7
Total Required Credits for Certificate	46

Structural Drafting

REQUIRED COURSES	CREDITS
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawing	5
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 123 Commercial Construction Drawings	5
AEC 205 Applied Statics and Strengths of Materials	3
AEC 206 Applied Structural Analysis	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CAD 202 Computer-Aided Drafting/3D (or CAD 224 Revit)	3
CIS 118 Introduction to PC Applications	3
Total Required Credits	39

REQUIRED GENERAL EDUCATION COURSES CREDITS

ART 121 Drawing I	3
ENG 121 English Composition I (or ENG 131 Technical Writing I)	3
MAT 121 College Algebra	4
Total Required General Education Credits	10
Total Required Credits for Certificate	49

For more information contact

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Course requirements
for degrees or certificates in
Architectural Engineering
Building Construction Management
Civil Engineering Technology
Structural Engineering Technology



Many courses span all areas.
Start with the fundamentals, then follow your interest.

		AEC/Arch Eng Tech	AEC/Build Const Mgt	Civil Eng Tech	Struct Eng Tech
AEC 101	Basic Architectural Drafting	Yes	Yes	Yes	Yes
AEC 102	Residential Construction Drawing	Yes	Yes	Yes or AEC 123	Yes
AEC 121	Construction Materials and Systems	Yes	Yes	Yes	Yes
AEC 122	Construction Practices and Documents	Yes	Yes	Yes	Yes
AEC 205	Applied Statics & Strength of Materials	Yes	Yes	Yes	Yes
AEC 206	Applied Structural Analysis	Yes	Yes	Yes	Yes

Course requirements for an A.A.S. Degree in Architectural Engineering Technology

REQUIRED COURSES	CREDITS
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawing	5
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 123 Commercial Construction Drawings	5
AEC 200 Building Design Development	3
AEC 205 Applied Statistics and Strengths of Materials	3
AEC 206 Applied Structural Analysis	3
AEC 208 Building Electrical Systems	2
AEC 210 Building Mechanical Systems	4
AEC 215 Elementary Site Planning	3
AEC 218 Sustainable Building Systems	3
CAD 101 Computer-Aided Drafting I	3
CAD 102 Computer-Aided Drafting II	3
CIS 118 Introduction to PC Applications	3
Total Required Credits	51
REQUIRED GENERAL EDUCATION COURSES	CREDITS
ART 121 Drawing I	3
ENG 121 English Composition I (or ENG 131 Technical Writing I)	3
MAT 121 College Algebra	4
MAT 122 College Trigonometry (or an advisor-approved MAT course)	3
PHY 105* Conceptual Physics	4
Total Required General Education Credits	17
Total Required Credits for A.A. S. Degree	68

Note: * Students desiring professional advancement in this field should consider taking PHY 111- Physics: Algebra-Based I with Lab (5 credit hours) to satisfy general education requirements in physics.

Course requirements for an A.A.S. Degree in Building Construction Management

REQUIRED COURSES	CREDITS
ACC 101 Fundamentals of Accounting	3
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawing	5
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 131 Estimating I: Quantity Survey	4
AEC 205 Applied Statics and Strengths of Materials	3
AEC 206 Applied Structural Analysis	3
AEC 215 Elementary Site Planning	3
AEC 221 Building Electrical/Mechanical Systems	3
AEC 231 Estimating II: Cost Analysis	3
AEC 232 Construction Project Management	2
AEC 233 Construction Safety and Loss Prevention	2
AEC 234 Construction Contract and Labor Law	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
Total Required Credits	51
REQUIRED GENERAL EDUCATION COURSES	CREDITS
ENG 121 English Composition I (or ENG 131 Technical Writing I)	3
MAT 121 College Algebra	4
MAT 122 College Trigonometry (or an advisor-approved MAT course)	3
PHY 105 Conceptual Physics	4
SOC 101 Introduction to Sociology I	3
Total Required General Education Credits	17
Total Required Credits for A.A.S. Degree	68

Course requirements for an A.A.S. Degree in Civil Engineering Technology

REQUIRED COURSES	CREDITS
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawings or AEC 123 Commercial Construction Drawings	5
AEC 103 Computer Applications in AEC or CIS 118 Introduction to Computer Applications	3
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 141 Civil Construction Materials	5
AEC 205 Applied Statics and Strengths of Materials	3
AEC 206 Applied Structural Analysis	3
AEC 215 Elementary Site Planning	3
AEC 223 Civil Construction Systems	3
AEC 224 Civil Water/Environmental Systems	3
CAD 101 Computer Aided Drafting I	3
CAD 102 Computer Aided Drafting II	3
CAD 231 Land Desktop/Autodesk	3
Total Required Credits	48
Required General Education Courses	CREDITS
ART 121 Drawing	3
ENG 121 English Composition	3
ENG 131 Technical Writing	3
COM 115 Public Speaking	3
MAT 121 College Algebra	4
MAT 122 College Trigonometry or an advisor-approved MAT course	3
PHY 111 Physics-Algebra Based I with Lab	5
Total Required General Education Credits	24
Total Required Credits for A.A.S. Degree	72

Course requirements for an A.A.S. Degree in Structural Engineering Technology

Required Courses	CREDITS
AEC 101 Basic Architectural Drafting	5
AEC 102 Residential Construction Drawings	5
AEC 103 Computer Applications in AEC or CIS 118 Introduction to PC Applications	3
AEC 121 Construction Materials and Systems	4
AEC 122 Construction Practices and Documents	2
AEC 123 Commercial Construction Drawing	5
AEC 205 Applied Statics & Strengths of Materials	3
AEC 206 Applied Structural Analysis	3
AEC 221 Building Electrical/Mechanical Systems	3
AEC 241 Introductory Steel Detailing	3
AEC 242 Advanced Steel Detailing	3