



**Front Range Community College (FRCC), Larimer Campus and Colorado Department of Transportation
Associate of Applied Science (AAS) in Highway Maintenance Management Program**



1. Purpose: To create an Associate of Applied Science (AAS) in Highway Maintenance Management degree to advance the development of highway maintenance leaders.
2. Key Program Objectives:
 - Increase level of professionalism among leaders in Highway Maintenance.
 - Improve organizational succession planning by increasing competencies of employees.
 - Recruit, develop, and retain productive employees.

3. Program Curriculum: 60 credits

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| General Education: 15-17 credits | Required Maintenance and Operations: 15 credits |
| Required Management: 15 credits | Electives: 13-15 credits) |

| General Education Courses (15-17 credits; complete one course in each area) | | | | |
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| Mathematics (3-4 credits) - MAT 107: Career Mathematics (3 credits) - MAT 108: Technical Mathematics (4 credits) - MAT 121: College Algebra ¹ (4 credits) | Communication (3 credits) - ENG 131: Technical Writing - ENG 121: English Composition ¹ | Communication (3 credits) - COM 115: Public Speaking ¹ - COM 125: Interpersonal Communication ¹ - MTE 110: Applied Communication & Teamwork in Industry | Technology (3 credits) - CIS 118: Introduction to PC Applications - CIS 155: PC Spreadsheet Concepts: Excel - GIS 101: Introduction to Geography Information Systems | General Studies (3-4 credits) - COM 217: Group Communication (3 credits) - COM 220: Intercultural Communication (3 credits) - COM 225: Organizational Communication (3 credits) - ENV 101: Intro. to Environmental Science with Lab (4 credits) - POS 125: American State and Local Governments (3 credits) |
| Notes: - Preference for courses transferable to 4-year degree ¹ = Select if planning to continue to a 4-year degree | | | | |

| Required/Core Courses (must complete all courses – 30 credits) | |
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| Required Management Courses (15 credits) | Required Highway Maintenance and Operations Courses (15 credits) |
| - MAN 128: Human Relations in Organizations - MAN 226: Principles of Management - MAN 230: Corporate Ethics & Social Responsibility - MAN 241: Project Management in Organizations - Complete one: - MAN 105: Logistics Management - MAN 116: Principles of Supervision - MAN 224: Leadership - MAN 225: Managerial Finance | - HWY 100: Highway Maintenance and Operations Safety (1 credit) - HWY 101: Introduction to Highway Maintenance and Operations (3 credits) - HWY 105: Traffic Control (2 credits) - HWY 110: Highway Asset Management (1 credit) - HWY 115: Highway Preventive Measures and Preservation Treatments (2 credits) - HWY 255: Highway Maintenance Leadership (4 credits) Complete one: - HWY 288: Highway Maintenance and Operations Field Practicum (2 credits) - HWY 289: Highway Maintenance and Operations Capstone (2 credits) |
| Future step: Completion of all required Management courses earns a Highway Maintenance Management Certificate | Future step: Completion of all required Highway Maintenance and Operations courses earns a Highway Maintenance and Operations Certificate |

| Elective Courses (13-15 credits) | | | | |
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| Elective credits are used to develop a concentration in an area(s) of highway maintenance and operations. Elective credits are earned by completing job-relevant courses and through Prior Learning Assessment (PLA). | | | | |
| Highway Engineering Technician (HWY 180/280) <ul style="list-style-type: none"> • Drainage • Estimating • Plan reading • Surveying | Highway Materials and Structures (HWY 181/281) <ul style="list-style-type: none"> • Asphalt • Bridge • Concrete • Gravel | Highway Equipment Operations and Management (HWY 182/282) <ul style="list-style-type: none"> • Heavy equipment operation • Welding | Environmental (HWY 183) <ul style="list-style-type: none"> • Erosion and sediment control | Incident Management, Emergency Management, and Weather Events (HWY 283) <ul style="list-style-type: none"> • National Incident Management System (Incident Command System) • Traffic incident management • Winter storm operations |
| <ul style="list-style-type: none"> • Possible courses: <ul style="list-style-type: none"> ○ Architecture, Engineering, and Construction Technology (AEC) ○ Construction Technology (CON) ○ Geology (GEY) | <ul style="list-style-type: none"> • Possible courses: <ul style="list-style-type: none"> ○ HWY 210: Gravel Road Maintenance ○ Architecture, Engineering, and Construction Tech. (AEC) ○ Construction Tech. (CON) | <ul style="list-style-type: none"> • Possible courses: <ul style="list-style-type: none"> ○ Welding (WEL) | <ul style="list-style-type: none"> • Possible courses: <ul style="list-style-type: none"> ○ Water Quality Management (WQM) | <ul style="list-style-type: none"> • Possible courses: <ul style="list-style-type: none"> ○ Geography (GEO) ○ Meteorology (MET) |
| <ul style="list-style-type: none"> • Possible industry training/certifications: <ul style="list-style-type: none"> ○ Colorado Local Technical Assistance Program (LTAP) ○ National Highway Institute (NHI) ○ National Institute for Certification in Engineering Technologies (NICET) | <ul style="list-style-type: none"> • Possible industry training/certifications: <ul style="list-style-type: none"> ○ American Concrete Pavement Assoc. (ACPA) ○ Colo. Asphalt Pavement Association (CAPA) ○ Colorado Local Technical Assistance Program (LTAP) ○ National Highway Institute (NHI) ○ Western Alliance for Quality Transportation Construction (WAQTC) | <ul style="list-style-type: none"> • Possible industry training/certifications: <ul style="list-style-type: none"> ○ Colorado Commercial Driver's Licenses (CDL) ○ Colorado Contractors Association (CCA) ○ Colorado Local Technical Assistance Program (LTAP) | <ul style="list-style-type: none"> • Possible industry training/certifications: <ul style="list-style-type: none"> ○ National Highway Institute (NHI) ○ Certified Inspector of Sediment and Erosion Control (CISEC) ○ Envirocert International, Inc. | <ul style="list-style-type: none"> • Possible industry training/certifications: <ul style="list-style-type: none"> ○ Federal Emergency Management Agency (FEMA) ○ American Association of State Highway and Transportation Officials (AASHTO) Winter Roadway Computer-Based Training |
| Other relevant elective courses: <ul style="list-style-type: none"> - ACC 101: Fundamentals of Accounting - ACC 121: Accounting Principles - BUS 201: Business Logistics Optimization - BUS 202: Purchasing, Supply, and Sourcing Logistics - BUS 217: Business Communication and Report Writing - BUS 226: Business Statistics - MAN 242: Project Management Tools and Techniques - MAR 216: Principles of Marketing | | | | |

Front Range Community College's (FRCC) residency requirement requires students earning an AAS degree to earn at least 25% of the credits (15 credits) by completing FRCC classroom or online courses. The balance of the credits (i.e., General Education, required Management, required Maintenance and Operations, and electives) can be earned through **Prior Learning Assessment (PLA)**. PLA is the process for evaluating knowledge and skills to award college credit for learning from (1) work experience; (2) training courses and/or certifications; (3) on-the-job training; (4) military training and voluntary service; and (5) independent study. PLA credit can be earned by passing a knowledge examination, demonstrating a skill, and/or providing satisfactory documentation from a recognized industry partner and/or subject matter expert.