

Railroad Operations- Mechanical Option, AAS

Mechanical services include a variety of responsibilities for the maintenance, service and repair of locomotives, freight cars and other rolling stock. Skills include diesel engine repair, electrical and electronic system repair, freight car repair and inspection, and welding processes. The final phase of the program consists of training provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based upon various criteria. Interested students should meet with a JCCC counselor as early as possible.

(Major Code 2840; State CIP Code 49.0208)

- Railroad Science (<http://www.jccc.edu/academics/transportation/railroad>)

Associate of Applied Science Degree

Prerequisites for Required Courses

Prior to beginning the program, the student must take one of the following prerequisite courses, or have obtained a waiver from the department or may contact the Testing Center for prior learning credit.

First Semester

CPCA 105	Introduction to Personal Computers: Windows	1
CPCA 108	Word Processing I: MS Word*	1
CPCA 110	Spreadsheets I: MS Excel*	1
ENGL 121	Composition I*	3
MATH 130	Technical Mathematics I* (or higher)	3
PHIL 124	Logic and Critical Thinking	3
RRT 120	History of Railroad	3

Total Hours **15**

Second Semester

Technical Electives (see below)		2
ENGL 123	Technical Writing I*	3
MATH 131	Technical Mathematics II* (or higher)	3
PHYS 133	Applied Physics*	5
RRT 121	Railroad Technical Careers	3
Health and/or Physical Education Elective ^		1

Total Hours **17**

^ See all AAS general education electives (<http://catalog.jccc.edu/degreerequirements/associate-applied-science>)

Third Semester

BUS 121	Introduction to Business	3
ECON 132	Survey of Economics	3
or ECON 230	Economics I	
PHIL 138	Business Ethics	1
RRT 150	Railroad Operations	3
RRT 165	Railroad Safety, Quality and Environment	3
SPD 125	Personal Communication	3

Total Hours **16**

Fourth Semester

Technical Electives (see below)		10
RRIT 122	Elements of Welding*	3
RRIT 123	Basic Welding*	3

Total Hours **16**

Technical Electives

AET 110	Industrial Maintenance*	3
AET 120	Industrial Fluid Power*	3
AET 140	Actuator and Sensor Systems*	3
AET 160	Programmable Logic Controllers I*	3
AET 240	Industrial Robotics*	3
AET 260	Programmable Logic Controllers II*	3
AUTO 165	Automotive Engine Repair*	4
CET 105	Construction Methods	3
CET 129	Construction Management	3
DRAF 123	Interpreting Machine Drawings*	2
ELEC 120	Introduction to Electronics	3
ENGR 180	Engineering Land Surveying I*	3
INDT 125	Industrial Safety/OSHA 30	3
MFAB 124	Introduction to Welding	3
MFAB 128	Basic Machine Tool Technology	3
MFAB 140	Maintenance Repair Welding*	3
MFAB 180	Blueprint and Symbols Reading for Welders	2
MFAB 152	Manufacturing Materials and Processes	3
MFAB 240	Metallurgy	2
RRTM 130	Freight Car Yard Inspection*	3
RRTM 131	Freight Car Repair Track Inspector*	3
RRTM 152	Freight Car Air Brakes, Basic*	2

Total Program Hours: 64