

MATH 120E Fund of College Math Expanded 3 Credits

Fundamentals of College Mathematics with Corequisite Support: Includes real numbers, consumer mathematics, variation, functions, relations, graphs, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. Fulfills the lower-division mathematics requirement for a Bachelor of Arts Degree. Satisfies mathematics requirement for baccalaureate degrees.

MATH 126 Precalculus I 3 Credits

A third course in algebra that stresses polynomial, quadratic, rational, exponential, and logarithmic functions, including their graphs and applications; complex numbers; systems of equations; and basic operations with matrices and determinants, including Cramer's rule. It is recommended that students have completed prerequisites within two years of enrolling in this course.

MATH 126E Precalculus I Expanded 3 Credits

Precalculus I Expanded with Co-requisite support: Includes equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course.

Program Requirements

DT 100 Shop Practices .5-4 Credits

An introduction to hand tool identification and proper use, shop safety, and other topics including screw thread, hydraulic hose, and fitting identification. Also covers measuring devices.

DT 101 Basic Diesel Engines 1-6 Credits

A review of basic engine operation with an emphasis on operating principles, nomenclature, components, and design, and terminology. May be repeated up to 18 credits.

DT 102 Basic Vehicle Electronics 1-9 Credits

A lecture and laboratory course study of AC and DC electricity as used in mobile equipment. Emphasis on charging systems, starting systems, lighting systems, and wiring diagrams. Troubleshooting and repairing of electrical components, electronic controls systems, and voltage drops analysis will be covered. May be taught in modules.

DT 105 Mobile Air Conditioning 1-5 Credits

A lecture and laboratory course covering heating and refrigeration theory. Includes heating and air conditioning components, control systems, service evacuation, charging, overhaul, and replacement of major components.

DT 106 Heavy Duty Trans/Power Tr 1-8 Credits

The theory and operation of heavy equipment power trains will be covered in detail with emphasis on power shift transmissions. Students will become familiar with driveline angle calculations, gear ratios, clutches, differentials, and transmission electronic control systems. May be repeated up to eight credits.

DT 201 Diesel Brakes/Pneumatics 2.5 Credits

The principles of pneumatic brake systems are discussed in detail, with emphasis on cam-operated brakes. Pneumatic brake valves, schematic drawings, and foundation brake troubleshooting will be included in this technical course.

DT 215 Electronic Diesel Engines 1-9 Credits

Designed to give individuals knowledge of electronic diesel engine controls as they apply to major diesel engine manufacturers. Emphasis is placed on engine sensors, electronic injection systems, and engine operating systems. No prerequisite but students having experience with diesel engines and basic electronics will find it helpful. Course may be taught in modules.

IT 208 Fluid Power 1-9 Credits

A review of fluid power mechanics with an emphasis on schematic symbols, circuit operation and design, hydraulic component theory and operation, and hydraulic terminology. Course may be taught in modules.

WELD 136 Welding Maintenance Tech I 1-3 Credits

In this course the Maintenance Technician will learn safety in welding and Oxy-Fuel Cutting operations. Also covered in this course, the Maintenance Technician will gain an understanding of electrodes and electrode selection as well as develop an understanding on Shielded Metal Arc Welding equipment that is used in the shop and field environments. The Maintenance Technician will perform the operation of using high alloy electrodes to extract broken bolts. The Maintenance Technician will become knowledgeable in the MSHA and OSHA fabrication regulations regarding hand railing. Repeatable up to three times. (Formerly WELD 135, Welding for the Maintenance Technician I)

WELD 235 Welding Maintenance Tech II 1-3 Credits

The course is designed to give the Maintenance Technician a basic understanding of the principles of the Flux Cored Arc Welding process with hands-on training. The course will also cover the Carbon Arc Cutting process, joint designs, welding symbols, weld testing and inspection. Repeatable up to three times.

Suggested Course Sequence

1st Semester - Fall

Course Credits DT 100 3 DT 102 8 IT 208 8 WELD 136 3 Mathematics* 3 English/Communications* 3 TOTAL 28 *Choose with advisor

2nd Semester - Spring

Course Credits DT 101 5.5 DT 105 2 DT 106 8 DT 201 2.5 DT 215 8 WELD 235 3 TOTAL 29