Process Technology (PRT)

Courses

PRT A101 Introduction to Process Technology **3 Credits**
Introduces industrial process operations through an overview of general information, processes, procedures and equipment.

PRT A110 Introduction to Process Safety, Health and Environmental Awareness **3 Credits**
Introduces safety, health and environmental awareness within the process industry. Examines types of hazards, applicable government regulations, and current industry standards and practices. Analyzes the potential for harm to an individual and to the environment due to unsafe conditions. Covers various types of preventative procedures, systems and equipment.

PRT A130 Process Technology I: Equipment **3 Credits**
Provides an in-depth analysis of process equipment, components, applications and theory. Examines process flows, piping diagrams, and piping and instrumentation diagram (P&ID) symbols. Examines process equipment design characteristics. Provides an overview of basic industrial hand tools and their safe and effective use.
Prerequisites: (MATH A105 with a minimum grade of C or concurrent enrollment or MATH A121 with a minimum grade of C or concurrent enrollment or MATH A151 with a minimum grade of C or concurrent enrollment or MATH A152 with a minimum grade of C or concurrent enrollment or MATH A155 with a minimum grade of C or concurrent enrollment or MATH A211 with a minimum grade of C or concurrent enrollment or MATH A212 with a minimum grade of C or concurrent enrollment or MATH A221 with a minimum grade of C or concurrent enrollment or MATH A251 with a minimum grade of C or concurrent enrollment or MATH A251F with a minimum grade of C or concurrent enrollment or MATH A252 with a minimum grade of C or concurrent enrollment or MATH A252F with a minimum grade of C or concurrent enrollment or MATH A253 with a minimum grade of C or concurrent enrollment) and PRT A101 with a minimum grade of C.
Corequisites: PRT A130L.

PRT A130L Process Technology I: Equipment Lab **1 Credit**
The course will introduce students to the basics of process equipment, tools, and their safe use. This course illustrates, augments, and applies concepts covered in the lecture course.
Corequisites: PRT A130.

PRT A140 Industrial Process Instrumentation I **3 Credits**
Introduces the terminology and symbolism encountered in process instrumentation. Explores common process variable measurement tools.
Prerequisites: (MATH A105 with a minimum grade of C or concurrent enrollment or MATH A121 with a minimum grade of C or concurrent enrollment or MATH A151 with a minimum grade of C or concurrent enrollment or MATH A152 with a minimum grade of C or concurrent enrollment or MATH A155 with a minimum grade of C or concurrent enrollment or MATH A211 with a minimum grade of C or concurrent enrollment or MATH A212 with a minimum grade of C or concurrent enrollment or MATH A221 with a minimum grade of C or concurrent enrollment or MATH A251 with a minimum grade of C or concurrent enrollment or MATH A251F with a minimum grade of C or concurrent enrollment or MATH A252 with a minimum grade of C or concurrent enrollment or MATH A252F with a minimum grade of C or concurrent enrollment or MATH A253 with a minimum grade of C or concurrent enrollment).

PRT A144 Industrial Process Instrumentation II **3 Credits**
Examines continuous control strategies and final control elements, discrete-type alarm, annunciator, and shutdown systems utilized for process control. Reviews computerized control systems. Analyzes instrument calibration and troubleshooting procedures. Utilizes a variety of instrument projects to increase practical knowledge through troubleshooting, repair, instrument calibration and functional check-out (FCO) procedures.
Prerequisites: PRT A140 with a minimum grade of C.

PRT A160 Oil and Gas Exploration and Production I **3 Credits**
Examines the history of oil and gas, exploration, reservoir geology, and aspects of petroleum mineral leasing. Covers drilling and completion techniques, production systems, methods of petroleum delivery, and emulsion hazards and treatment. Surveys alternative petroleum sources and the theory of peak oil, and reviews current petroleum marketing strategies.

PRT A230 Process Technology II: Systems **4 Credits**
Provides an overview of major industrial process systems, both simple and complex, and covers a wide range of systems that a technician will be expected to operate.
Prerequisites: PRT A130 with a minimum grade of C and PRT A140 with a minimum grade of C.

PRT A231 Process Technology III: Operations **3 Credits**
Examines the different operational phases found in industrial processes, with all relevant safety, health, and environmental rules. Focuses on the unit (outside) operator position.
Prerequisites: PRT A144 with a minimum grade of C and PRT A230 with a minimum grade of C and PRT A250 with a minimum grade of C or concurrent enrollment.
Corequisites: PRT A231L.

PRT A231L Process Technology III: Operations Lab **1 Credit**
Introduces the process of developing and writing Standard Operating Procedures (SOPs). Applies practices and procedures for the startup of Big Silver's DeltaV control system in accordance with the SOPs for each piece of equipment. Introduces proper procedures for Lockout/Tagout (LOTO) and verifying zero energy.
Corequisites: PRT A231.

PRT A250 Process Troubleshooting **3 Credits**
Introduces the concept of troubleshooting and analyzes how instrumentation such as indicators, variables and controllers can be used for effective troubleshooting. Develops troubleshooting skills that can be used effectively throughout the process industry.
Prerequisites: PRT A144 with a minimum grade of C or concurrent enrollment and PRT A230 with a minimum grade of C.

PRT A255 Quality Concepts for the Process Industry **1 Credit**
Examines quality concepts, tools, and methods used in the process industry. Covers the effectiveness of their implementation and continued use. Investigates root cause analysis problem-solving techniques.
Prerequisites: PRT A230 with a minimum grade of C or concurrent enrollment.

PRT A260 Oil and Gas Exploration and Production II **3 Credits**
Analyzes operator duties and responsibilities in oil and gas production facilities; oil and gas well production; well pad operations; drill site operations; and oil and gas transportation methods. Covers both on-shore and off-shore producing areas.
Prerequisites: (MATH A105 with a minimum grade of C or concurrent enrollment or MATH A121 with a minimum grade of C or concurrent enrollment or MATH A151 with a minimum grade of C or concurrent enrollment or MATH A152 with a minimum grade of C or concurrent enrollment or MATH A155 with a minimum grade of C or concurrent enrollment or MATH A211 with a minimum grade of C or concurrent enrollment or MATH A212 with a minimum grade of C or concurrent enrollment or MATH A221 with a minimum grade of C or concurrent enrollment or MATH A251 with a minimum grade of C or concurrent enrollment or MATH A251F with a minimum grade of C or concurrent enrollment or MATH A252 with a minimum grade of C or concurrent enrollment or MATH A252F with a minimum grade of C or concurrent enrollment or MATH A253 with a minimum grade of C or concurrent enrollment) and PRT A160 with a minimum grade of C.