PROCESS TECHNOLOGY (PTEC)

PTEC 1000 — Intro to Hazardous Materials **3 credit hours**
Lecture Hours: 3; Lab Hours:0 This course provides an overview of hazardous materials. It discusses the health effects of these substances on the ecosystem and introduces the legislation intended to minimize risks to the population at large. HAZWOPER Certification available.
Flat Fee: 50

PTEC 1010 — Intro to Process Technology **3 credit hours**
Lecture Hours:3; Lab Hours: 0 This course introduces the field of process operations within the process industry and reviews the roles and responsibilities of process technicians, the environment in which they work, and the equipment and systems that they operate.
Flat Fee: 100
Schedule type: Web

PTEC 1030 — Industrial and Plant Safety **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 This course introduces various types of plant hazards, safety and environmental systems and equipment, and industry regulations. OSHA certification available upon completion of course.
Flat Fee: 100
Schedule type: Independent Study, Web

PTEC 1040 — Lab Technician **3 credit hours**
Lecture Hours:0: Lab Hours: 3 The course familiarizes students with different petroleum refinery laboratory techniques involving products such as gasoline, kerosene, jet fuel, and diesel as well as product quality control. It emphasizes the theory, operation, and significance of each test covered
Schedule type: Independent Study

PTEC 1330 — Process Instrumentation **2 credit hours**
Lecture Hours: 2; Lab Hours: 0 This course is designed to introduce the student to the equipment and methodologies used by the industry for monitoring performance and controlling processes. Topics addressed include common terminologies, basic principles of measurement and instrumentation, specific hardware, performance characteristics, control loops, typical applications and operating limits
Flat Fee: 100
Pre-requisite(s): PTEC 1010, MATH 1299, MATH 1300
Co-requisite(s): PTEC 1331
Schedule type: Lecture, Web

PTEC 1331 — Process Instrumentation Lab **2 credit hours**
Lecture Hours: 0; Lab Hours: 2 This course is designed to introduce the student to laboratory exercises and activities involving equipment and methodologies used by the industry for monitoring performance and controlling processes. Topics addressed include common terminologies, basic principles of measurement and instrumentation, specific hardware, performance characteristics, control loops, typical applications and operating limits.
Flat Fee: 100
Pre-requisite(s): MATH 1300, MATH 1299
Co-requisite(s): PTEC 1330
Schedule type: Independent Study, Laboratory, Web

PTEC 1630 — Process Equipment **2 credit hours**
Lecture Hours: 2; Lab Hours: 0 This course is a study of process plant equipment including their construction, principles of operations, maintenance and utilization within the process industry. Equipment to be studied includes piping, valves, pumps, compressors, heat exchangers, red furnaces, steam and gas turbines.
Flat Fee: 100
Schedule type: Lecture, Web

PTEC 1631 — Process Equipment Lab **2 credit hours**
Lecture Hours: 0; Lab Hours: 2 This course is a study of process plant equipment and is designed to introduce he student to laboratory exercises and activities involving equipment materials of construction, principles of operations, maintenance and utilization within the process industry. Equipment to be studied includes piping, valves, pumps, compressors, heat exchangers, red furnaces, steam and gas turbines.
Flat Fee: 100
Co-requisite(s): PTEC 1630
Schedule type: Independent Study, Laboratory, Web

PTEC 1640 — Oil and Gas Production I **3 credit hours**
Lecture Hours:3: Lab Hours: 0 This course familiarizes students with the job of the oil and gas production technician. Students learn the history of the oil market, concepts surrounding exploration and geology, and the fundamentals of drilling and well completion. Upon completion of the course, they are able to describe and operate the equipment and systems used by the oil and gas production technician today. Schedule Types: Lecture/Lab
Flat Fee: 15
Schedule type: Independent Study

PTEC 2070 — Quality Control **3 credit hours**
Lecture Hours: 3; Lab Hours:0 This course introduces many process industry related quality concepts including operating consistency, continuous improvement, plant economics, team skills, and statistical process control.
Flat Fee: 100

PTEC 2420 — Process Technology II:Systems **3 credit hours**
Lecture Hours: 2; Lab Hours: 0 PTEC 2420 – Process Technology II (Unit Systems) This course studies the interrelation of process equipment and process systems by arranging process equipment into basic systems, describing the purpose and function of specific process systems, explaining how factors affecting process systems are controlled under normal conditions, and recognizing abnormal process conditions. It also introduces the concept of system and plant economics.
Flat Fee: 100
Pre-requisite(s): PTEC 1010, MATH 1300, MATH 1299
Schedule type: Independent Study, Web

PTEC 2421 — Process Tech II: Systems Lab **1 credit hour**
Lecture Hours: 0; Lab Hours: 1 Provides laboratory exercises and activities involving the interrelation of process equipment and process systems that complement the content of PTEC 2420, Process Technology Systems II. Covers arranging process equipment into basic systems; the relationship between different pieces of equipment in systems; safety, health, and environmental concerns associated with process systems and the roles of the operator.
Flat Fee: 100
Pre-requisite(s): MATH 1300, MATH 1299
Co-requisite(s): PTEC 2420
Schedule type: Independent Study, Laboratory, Web

PTEC 2430 — Process Tech III: Operations **2 credit hours**
Lecture Hours: 3; Lab Hours: 0 PTEC 2430 – Process Technology III (Operations) This course teaches the operation of an entire unit within the process industry using the students' existing knowledge of equipment, systems, and instrumentation. It also examines concepts related to equipment, systems, and instrumentation. It also examines concepts related to commissioning, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations, as well as the process technician's role in performing the tasks associated with these concepts within an operating unit.
Flat Fee: 100
Schedule type: Lecture, Web

PTEC 2431 — Process Tech III:OperationsLab **2 credit hours**
Lecture Hours: 0; Lab Hours: 2 This course is designed to introduce students to laboratory exercises, process simulations and other activities that occur within the process industry using existing knowledge of equipment, systems, and instrumentation. Concepts covered will be related to commissioning, normal startup, operations, normal shutdown, turnarounds, safety, environmental, and abnormal situations, as well as the process technician's daily roles and responsibilities in performing tasks associated with concepts utilized within an industrial processing unit.
Flat Fee: 100
Pre-requisite(s): PTEC 2420, PTEC 2421
Co-requisite(s): PTEC 2430
Schedule type: Laboratory

PTEC 2440 — Process Troubleshooting **3 credit hours**
Lecture Hours: 2; Lab Hours: 1 This course applies a six-step troubleshooting method for solving and correcting operation problems. It focuses on malfunctions as opposed to process design or configuration improvements. It uses data from the instrumentation to determine the cause for abnormal conditions in an organized and regimented way.
Flat Fee: 100
Pre-requisite(s): PTEC 2420
Schedule type: Lecture, Web

PTEC 2630 — Fluid Mechanics **3 credit hours**
Lecture Hours: 3; Lab Hours: 0 This course addresses fluids, fluid types, and the chemical and physical natures and factors affecting fluids while in motion. It reviews basic calculations relative to flow and volume. It also addresses such topics as laminar/turbulent flow, viscosity, and Reynolds Number.
Flat Fee: 100
Pre-requisite(s): PTEC 1010, MATH 1300, INDT 1010, MATH 1300
Schedule type: Web

PTEC 2910 — Process Technology Internship **3 credit hours**
Lecture Hours: 0; Lab Hours: 9 Students work a minimum of 135 supervised hours in a local industrial setting. If an internship is not available, students complete an internal independent study.
Flat Fee: 100
Schedule type: Internship/Coop, Laboratory