Process Technology

IPT 113 Intro to Process Technology 3 cr
Introduction to Process Technology is part of the NAPTA Series for Process Technology. It provides learning material for the first course of a process technology program. The course was developed in partnership with Industry and Education. It covers history of the process industry, green technologies, career as a process technician, working as a team member, basic physics, basic chemistry, safety, health and environmental protection, principles of quality and process equipment. It explores the industry s modern-day processes and legislative influences and includes new critical thinking. This course is the foundation for and supports a consistent curriculum and exit competencies for process technology graduates.

IPT 141 Process Quality 3 cr
Process Quality is part of the NAPTA Series for Process Technology. This course is the study of the background and application of quality concepts. Topics include team skills, quality tools, and economics and continuous improvement. Students will define terms associated with quality systems; demonstrate team skills; and apply principles and tools of quality to process systems. The course was developed in partnership with Industry and Education. It covers Total Quality Management (TQM), customer service and personal effectiveness, team skills, variance and operating consistency, continuous improvement and corrective/ preventive action, group problem solving, Statistical Process Control (SPC), data collection, analysis and interpretation. This course supports a consistent curriculum and exit competencies for process technology graduates.

IPT 142 Process Technology I - Equip 4 cr
Process Technology I - Equipment is part of the NAPTA Series for Process Technology. It focuses on the tools and equipment of the process industry. The course was developed in partnership with Industry and Education and provides a common national standard for the process technology equipment course of a process technology degree program. It covers piping, tubing, hoses & fittings, valves, pumps, compressors, turbines, motors & engines, power transmission & lubrication, heat exchangers, cooling towers, furnaces, boilers, filters, dryers, vessels, towers & columns, reactors, tanks & drums, flares, and process diagrams. This course includes a lab and field trip where students will demonstrate their ability to identify and describe the purpose of process equipment. This course supports a consistent curriculum and exit competencies for process technology graduates.

IPT 143 Process Technology II, Systems 3 cr
Systems is one of the eight core courses in the Process Technology Curriculum, sponsored by the North American Process Technology Alliance. It has been created to train students for careers as Process Technicians in the chemical process industry. This course is a critical building block in preparation for Process Technology III Operations and Process Troubleshooting. Process Technology II Systems introduces students to many process industry related Systems concepts including basic systems, the purpose and function of specific process systems, the methods of controlling process systems and abnormal process conditions. A strong emphasis in distillation basics and operation will be pursued.

IPT 151 Safety, Health and Environment 3 cr
Safety, Health and Environment are part of the NAPTA Series for Process Technology. This course covers the development of knowledge and skills to reinforce the attitudes and behaviors required for safe and environmentally sound work habits. Emphasis is placed on safety, health, and environmental issues in the performance of all job tasks and regulatory compliance issues. Students will list components of a typical plant safety and environmental program; describe the role of a process technician in relation to safety, health, and environment; and identify and describe safety, health, and environmental equipment uses. The course was developed in partnership with Industry and Education. It covers types of hazards and their effects, site security, hazard controls, process safety management, audits, investigations and reporting, work permitting systems, personal protective equipment and first aid, fire, rescue and emergency response. This course supports a consistent curriculum and exit competencies for process technology graduates.

IPT 171 Process Instrumentation 3 cr
Process Instrumentation is part of the NAPTA Series for Process Technology. This course is the study of instruments and instrument systems used in chemical processing industry, including terminology, primary variables, symbology, control loops, and basic troubleshooting. Students will identify and explain the function of instruments used in the chemical processing industry; explain the relationship of process control elements in a control loop; and define and apply terms and symbols used in instrumentation. The course was developed in partnership with Industry and Education. It covers process variables, elements and instruments, control loops, switches, relays, alarms, instrument air systems, interlocks, symbology, and instrumentation troubleshooting. This course supports a consistent curriculum and exit competencies for process technology graduates.

IPT 231 Process Technology Skills Lab 3 cr
This course provides hands on application for equipment and systems start-up, monitoring, troubleshooting, shutdown and maintenance preparation. It focuses on safety and choosing and utilizing the proper Personal Protective Equipment and hand tools to accomplish common tasks. Students will be taught how to locate and apply relevant safety, environmental and work procedures to complete common tasks. Students will learn the importance of effective communication by completing an operator s log, writing work orders, job tasks and updating procedures. This also includes effective verbal communication via radio with other operators, the control room, supervision and maintenance.

IPT 232 Process Troubleshooting 3 cr
This course provides instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships, and reasoning. Students will explain steps in troubleshooting models; demonstrate use of troubleshooting tools; and apply troubleshooting techniques to process problems.

IPT 244 Process Technology III-Ops 3 cr
This course provides instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships, and reasoning. Students will explain steps in troubleshooting models; demonstrate use of troubleshooting tools; and apply troubleshooting techniques to process problems.