ATPT 242 Process Technology II-Systems
Credit Hours: 3
Scheduled hours per week
Lecture: 10
Lab: 2
Other: #

Catalog Course Description:
Equipment roles and control methods are studied for each process system. Emphasis is on the safety of each of these systems and the role played by operator in maintaining the system safely.

Pre-requisites: ATPT 130, ATPT 131, ATPT 140

Co-requisites: None

Course Learning Outcomes:

Understand

- *Develop an understanding of the various systems utilized in process industries including service/utility water, waste water, cooling water, instrument air, utility air, breathing air, nitrogen, natural gas, fuel gas, relief & flare systems, and electrical power generation & distribution.*
- *Develop an understanding of material storage*
- *Develop an understanding of other systems, steam generation & distribution systems*
- *Develop an understanding of various process systems including reaction, separation, extraction, distillation, stripping, absorption, dehydration, adsorption, and filtration systems.*

Topics to be studied:

- Potable and Fire Water Systems
- Service/Utility and Waste Water Systems
- Cooling Water Systems
- Instrument, Utility, and Breathing Air Systems
- Nitrogen, Natural Gas and Fuel Gas Systems
- Relief and Flare Systems, Electrical Power Generation and Distribution Systems,
- Material Storage and Blending
- Refrigeration Systems -
- Steam Generation & Distribution Systems
- Reaction Systems -
- Separation Systems
- Extraction Systems
- Distillation Systems -
- Stripping Systems and Absorption Systems
- Dehydration and Adsorption Systems
- Filtration Systems, Separation Systems Comparison
- Control Systems
- System Economics and Optimization

Relationship of Course to Program Learning Outcomes:	
Exhibit knowledge of OSHA General Industry requirements.	x
Articulate Total Quality Management concepts including customer service, variance, process capability, continuous improvement, corrective/preventive action, SPC basics, data collection, and control charts.	x
Internalize the process instrumentation that a process technician/operator utilizes in performing job functions.	x
Use the various types of equipment in the process environment in a productive manner, and the interaction of the process operator/technician with it.	x
Knowledge of equipment roles and control methods for each process system.	x
Demonstrate safety and the role played by operator in maintaining the system safely.	x
Understand and follow Block flow diagrams, P & ID drawings, Process Flow diagrams, 3D drawings, and Plot plans.	
Use critical thinking skills, be able to see and troubleshoot problems in the process through trending and analysis of process parameters. Use critical thinking skills, be able to see and troubleshoot problems in the process through trending and analysis of process parameters.	x
10/20/2017	

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	x
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	x
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
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Special requirements of the course:

None

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Date: 10/20/2017