ENGT 2240
Process Operations Process III Syllabus

Course Description: This course will continue to build student confidence in a multitude of processes found throughout industry. Students will demonstrate an understanding of complex industrial processes involving, thermal power boilers, turbine generators, ethanol production, paper production, refining production, mining and more. Students will also demonstrate the proper utilization of a provided simulation software package that virtually models industry processes. It is the third in a series of courses on processes and focuses on system responses to normal and abnormal operating conditions.

Fundamental Goals & Outcomes:
- *Safety*
  - ***Students shall comply with all safety rules and operational/procedural protocols when working in the laboratory or with our other process simulators and demonstrators.***
- *Communications*
  - Students will communicate all written and verbal work in an organized and professional manner.
- *Critical Thinking*
  - Students will be further their ability to identify and explain the operational characteristics of fundamental and expand their abilities to include more advanced process control strategies.
  - Students will be able to identify and explain an expanded range of various industrial processes operations, dynamics and control strategies.
  - Students will utilize the process of collecting and analyzing data in an organized manner to develop hypotheses' of possible causes and present potential solutions to operational issues in a variety of industrial processes.
- *Technology*
  - Students will learn and operate various current technologies utilized in the process industry.

Course scope and what the student can expect:
- Stringent enforcement of safety rules and operational/procedural protocols.
- The course will consist of a variety of demonstrations, research assignments, hands-on assignments utilizing a computer-based process simulator and physical process simulator units.
- Students will be given a variety of industrial processes, both on paper and on the computer simulator, to learn their operational characteristics. These assignments will include multiple operational scenarios for the student to identify, study, gather information, analyze and provide possible solutions to operational abnormalities in an organized manner e.g. Process dynamics, Mechanical Issues, Material Imbalances, etc.
- Students will be able to identify, explain and demonstrate their knowledge of fundamental and advanced process control strategies: e.g. Feedback, Cascade, Ratio, Override and Feedforward control.

- Students will be able to identify, explain and demonstrate their knowledge process dynamics and the application of the PID controller in advanced control strategies. e.g. Ratio, Cascade, Override and Feedforward.

Performance expected of the student:
- Strict compliance with safety and operational/procedural protocols.
- Embrace the practical benefits and limitations of basic process control strategies.
- Embrace organized statement, data gathering, analyzation, and logical reasoning with reasoned argument to solve process problems.
- Be fully engaged in my learning and on time every day.
- Self-identify and utilize learning resources inside and outside of class to meet my learning goals.
- Embrace that continuous learning is intrinsic to one's future career success.

Extra help available:
- If you experience difficulties in this class, please notify us as soon as possible. If needed, we can work through the Academic Support Center to provide additional help (at no cost to the student).

Academic Integrity:
- This program adheres to and will enforce the ICC Academic Integrity Policies.
- http://www.itascacc.edu/academics/college-policies/academic-integrity

Performance and Grading Commitment:
- Students can expect one or two private consultations with the instructor to discuss any performance, concerns or questions the student or instructor may have. I commit to providing a mid-semester assessment and final grade within one week of returning loaned research tools and the final submittal of deliverables.

Grading commitment:
I commit to providing a mid-semester assessment and final grade within one week of returning loaned research tools and submittal final deliverables.

Grading and Deliverables:
All deliverables are due on time, unexcused late submittals will receive a grade of **_0%_**
Final course grading for Exams, Quizzes, Assignments, etc. is based on the accumulated individual scores as a percentage of the course total available points.

Deliverable	Score	Available	Percentage
Safety, Health & Protocol Compliance	Pass	Expulsion	
Exams & Quizzes			
Research & Presentation Assignments			
Labs			
Engagement with learning & observations*		+/-20%	
Instructor Discretionary		+/-20%	

Engagement & observations include items such as but not limited to: e.g. on time, class participation, attitude, student's initiative, attendance, quality of work, etc. ***Students are expected to schedule all nonemergency personal business outside of scheduled class time.***
Two unexcused absences will result in unrecoverable 10% reduction in grade; three unexcused absences will result in a course grade of an "F" and the student being dropped from the program.

Final Grading Policy:

Final %	Grade
>90%	A
80-89.99%	B
70-79.99%	C
<70%	F

Disability services:
The college will make reasonable accommodations for persons with documented disabilities. Students should notify the Director of the Disability Services/Office for Students with Disabilities (located in Backes Student Center right next to the Bookstore) and their instructors of any accommodation needs as soon as possible.

Signatures: Student: Date:

Instructor: *Thomas J. Raiche* 5/30/2017