NSF Grant #1700558

Process Operations Program Overview

The ICC Process Operations program partially subsidized by NSF grant #1700558 was created utilizing existing ICC course curriculum where possible, e.g., industrial math, technical writing, physics, etc. and utilizing the NSF Grant to develop new curriculum emphasizing the technical and hands on skills required for process technicians.

The specialized course development was divided into three areas:

Industrial Processes and Process Control:

Process I: Industrial Safety (utilizing industrial partners existing safety training program)

Process II: Fundamentals of process dynamics and process control (delivered in concert with Technical II, part B)

Process III: Process systems, advanced process control and introduction to process troubleshooting

Industrial Technologies:

Technical I: Process Equipment, Introduction of typical process equipment, e.g., pumps, valves, heat exchangers, separators, distillation towers etc.

Technical II, Part A: Basic Electricity (delivered by ICC Physics department)

Technical II, Part B: Instrumentation and Control, introduction to industrial control systems with hands on skills development, (delivered in concert with Process II)

Technical II, Part C: The Rankin Cycle

Technical IV: Develop and execute a Capstone Project in conjunction with an industrial partner.

Professional Development

Professional I: Technical writing (delivered by ICC English department)

Professional II: Industrial work teams and individual responsibilities

Professional III: Introduction to Root Cause Failure Analysis and Industrial Quality Control concepts, e.g., Lean Manufacturing, Six Sigma

Professional IV: Documenting the Capstone Project and delivering final results.