

Senior Design Project Description

Company Name	Ametek - Controls Southeast Inc (CSI)	Date Submitted	5/26/17
Project Title	Process Optimization for Material Control, Process Pipe, Jacketed Pipe & Pressure vessels work cells (AMETEK_OPT)	Planned Semester	2017-2018

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project. 250 hours are expected per person.

Complete the following table if this information is known, otherwise the Senior Design Committee will develop based on the project scope:

Discipline	Number	Discipline	Number
Mechanical	1	Electrical	
Computer		Systems	5
Other ()			

Project Overview:

Utilize Lean Six Sigma tools to optimize the Material Control, Process Pipe, Jacketed Pipe and Pressure Vessel processes from Material Control to QC Checkout.

Initial Project Requirements:

Conduct a value stream mapping exercise (or other lean six sigma tool) to identify process flow, communication flow and takt time. Develop a future and current state of the process flow identifying any wastes, constraints and actions required to create synchronous flow. Utilize the ERP system tables and other data sources to create automated reports that calculates product specific takt times and verify by conducting time studies on the manufacturing floor. Help integrate Material Test Report (MTR) verification and MTR Matrix development into the Material Control receiving process.

Expected Deliverables/Results:

- Load Leveling – synchronous flow
- Cycle Time Reduction
- Inventory Reduction
- Quality Improvement
- Constraint identification and minimization
- Improved / more efficient use of ERP system



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- Exception reporting to improve robustness of process, speed and accuracy of decisions, eliminate/minimize multiple manual touches of information - Use Microsoft SQL server Management Studio to accomplish above
- Automated MTR verification and MTR Matrix Generation

Disposition of Deliverables at the End of the Project:

Current and future state maps, automated reports and any third-party software acquired or hardware developed to create synchronous flow will stay with the Industry sponsor.

List here any specific skills, requirements, knowledge needed or suggested (If none please state none):

- Ability to use Microsoft SQL Server Management Studio to access ERP tables and develop reports to help calculate takt times, create exceptions reports, and data verification
- Familiarity with Lean Six Sigma Tools
- Familiarity with Industrial Pipe Fabrication components and nomenclature
- Basic understanding of MIG, TIG and Flux-Core welding
- Design Reviews to be held at Supporter location.