

Senior Design Project Description

Company Name	<i>SPX Flow</i>	Date Submitted	<i>08/05/20</i>
Project Title	<i>Redesign of Rotor Part to Achieve 30% Weight Savings with 3D Metal Print Validation</i> (SPX_ROTOR)	Planned Starting Semester	Fall 2020

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project.

Please provide your estimate of staffing in the below table. The Senior Design Committee will adjust as appropriate based on scope and discipline skills:

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

Company and Project Overview:

Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE: FLOW) innovates with customers to help feed and enhance the world by designing, delivering and servicing high value solutions at the heart of growing and sustaining our diverse communities. The company's product offering is concentrated in rotating, actuating and hydraulic technologies, as well as automated process systems, into food and beverage and industrial markets. SPX FLOW has approximately \$1.5 billion in annual revenues with operations in more than 30 countries and sales in more than 100 countries.

SPX Flow encompasses over 20 brands that develop specialty engineered products for heat exchangers, homogenizers, mixers, blenders, air and gas treatment, dryers, filtration, pumps valves and several other types of equipment.

Project Requirements:

The focus of this project will be to redesign a rotor part used in a current product.



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The current part meets all technical specs, but engineering management believes that a cost reduction is possible by reducing the part weight by 30% through a mechanical redesign. The project team will analyze the specifications and develop a part redesign that meets these specs with a weight reduction goal of 30%.

During the testing and validation phase, the team will work with a metal 3D printing subcontractor, to print the new design and use that part in testing and validation of the design.

Expected Deliverables/Results:

- Documentation for redesigned part including CAD files and analysis
- 3D metal printed part for testing and validation, all test data to determine compliance to specifications

Disposition of Deliverables at the End of the Project:

Hardware developed is the property of the Industry Supporter and will be handed over to the supporter following the Expo

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

- Interest in metal 3D printing
- Interest in stress analysis for mechanical design