

Grant Recipient Report

Steel Curriculum Development Grant

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The objective of this project is to attract younger students into the iron and steel industry and to provide them with the necessary knowledge and skills to succeed in completing the degree emphasis and to start a career in the steel industry.

This grant was requested to support the development and enhancement of a newly created course at Georgia Southern University, ENGR 2436: Molten Metal Processes. This course is targeted to sophomore students and is a core course for the brand-new metalcasting emphasis in the mechanical engineering department.

This emphasis and vehicle design were the first two emphases that the department has created. Three elective courses are required to obtain the metal casting emphasis: ENGR 2436 Molten Metal Processes, MENG5831 Applied Metal Casting, and MFGE 5533 Steel Heat Treatment and Microstructure. ENGR 2436, which is partially funded by this grant, will act as the entry-level course to spark interest among students in molten iron and steel processes. This course was offered for the first time in spring 2025 with 36 available seats.

The first year of the award period (2022–2023) was focused on developing the syllabus, course materials and lab content, as well as additional equipment that can greatly enhance the existing lab capabilities when teaching this course. Newly manufactured equipment included a lab-scale rolling mill and a blast/cupola furnace. The second year of the award period (2023–2024) was spent on improving the lab capabilities for accommodating larger group of students (36) in the foundry lab at a time. This includes the purchase of a brand-new sand muller for preparing molding sand, and designing and building a bucket elevator for the sand delivery to the mixer. This grant was utilized to cover the material cost of building the bucket elevator. ♦



Students from Georgia Southern University working in the lab.