The Program

The program at Kent State University consists of four concentrations: Applied Engineering and Technology Management, Computer Engineering Technology, Mechanical Engineering Technology, and Mechatronics. The Applied Engineering field is concerned with the application of management, design and technical skills for the design and integration of systems, the execution of new product designs, the improvement of manufacturing processes and the management and direction of physical and/or technical functions of a firm or organization. Applied Engineering and Technology Management provides students the necessary skills to manage complex technological systems. It also functions as a completer degree for students with engineering technology associate degrees. The majority of the coursework in the last two years focuses on the management of applied engineering. Applied Engineering students learn in the classroom as well as through hands-on experiments and real world internships.

Upon completion of the Applied Engineering program, students will have developed technical competencies based on engineering principles, learned to integrate communications, social and physical sciences to develop critical thinking and quantitative skills, and developed the necessary skill set to solve complex technological problems from a systems and sustainability perspective.

Students graduate with a BS in one of the following: Mechatronics, Mechanical Engineering Technology, or Technology Management. A BS in Foundry Technology is anticipated to be added in the Fall of 2018.

The Curriculum

The classes available at Kent State are wide ranging. Sophomores can jump right into the Materials & Processes class which is an introduction to engineering that includes a casting lab. From there Cast Metals (an introduction to metalcasting), Metallurgy, Solid Modeling & Solidification (including MAGMA training), and Patternmaking are also available. Patternmaking is the culmination of the learning process – this is the student’s final project – the actualization of a product.

One of the most important aspects of Kent’s curriculum is that each student is exposed to many hours of hands-on experience through their lab opportunities. A recent graduate commented: “My bachelor’s degree from KSU’s technology program provided me with an invaluable combination of a high-tech environment, hands-on industrial experience and an effective approach to managing resources.”

The Facilities

In the Materials and Processes lab at Kent State, students apply what they learn in lecture by participating in six rotations: welding, manual machining, forging, casting, materials testing, and plastics. The M&P lab also has CNC, sand testing, metal spectroscopy, and pattern making capabilities.

The Professor

Trent True began his teaching career at Kent State in 2015. He is a Kent graduate with a BS and Masters of Technology. Prior to attending Kent, Trent served in the Army for three years – in Bosnia for two of those years. Following graduation he accepted a position at Harrison Steel Casting as a Foundry Process Engineer; after working at Harrison for eight years, he then accepted the teaching position at Kent State. Trent brings a unique background and variety of experiences to share with his students.

Trent can be reached at ttrue@kent.edu. The FEF Key School Contact is Tom Dempsey who can be reached at tdempsey@hillandgriffith.com.
The Students

Processes and experiences that are available to the students are:

- **Molding:** Chemically Bonded, Permanent Molds, Lost Foam, Centrifugal, and K-Bond Sand
- **Metals:** Aluminum, Copper Base, Iron, and Steel
- **Core Making, Pattern Making, and Casting Simulation**
- **Processes:** Heat Treating, Machining, Forging, Mechanical Testing, NDT, and Metrology

Kent students participate in many service opportunities and off-campus learning experiences. Select students are responsible for putting together Foundry in a Box kits that are sold to AFS Chapters, companies, educational institutions and other individuals. They also demo these kits at high schools, STEM and Manufacturing Day events, and other gatherings as they have the opportunity.

The students attend local AFS Chapter meetings, the AFS CastExpo and Casting Congress events, as well as visiting local foundries to see how what they are learning translates into real-world applications.

Over the past four years, 13 FEF registered students have taken a job in metalcasting or related industry, and 13 students have participated in internships and/or co-ops in metalcasting or related industry in the past two years.