

Mechatronics Engineering (MHEN)

MHEN 5306 Thesis Research **3 SCH (3-0)**

Designed for Plan 1 students. The course requires completion of thesis research. Prerequisite: Departmental approval. May be repeated for a maximum of 6 semester hours.

MHEN 5370 Adv Eng Analysis **3 SCH (3-0)**

Ordinary and Linear Differential Equations, Complex Analysis, Laplace Transforms, Z-transforms, Fourier Series, Fourier Transform, Vector Calculus and Linear Algebra, Calculus of Variations, Numerical Analysis, Probability Statistics.

MHEN 5371 Mechatronic Systems **3 SCH (3-0)**

Mechanical Processes and Components; Electrical Systems and Sensors; Actuators; Data Acquisition; Machine Vision; Noise, Analysis and Design Considerations; Power Electronics.

MHEN 5372 Sensors & Actuators Mechatron **3 SCH (3-0)**

Sensors, Linear Actuators, Stepper Motors, Continuous-Drive Actuators, Mechanical Transmission Components, Rotary Actuators, MEMS, Interfacing.

MHEN 5373 Embedded Mechatronic Sys **3 SCH (3-0)**

Design and implementation of embedded systems in the context of mechatronic products, with emphasis on advanced technologies and computer aided design tools. It covers embedded system architecture and programming, sensor networks, input/output, analog and digital interfacing and peripherals in hardware integration.