TMAE 5131G Essentials of Applied Mechanical Engineering
3 Credit Hours. 2 Lecture Hours. 3 Lab Hours.
This course introduces fundamental concepts of wave propagation, polarization, radiation from sources, guided waves, transmission lines, smith charts, and numerical calculation techniques such as Finite-Difference Time-Domain (FDTD) method. The course includes research project activities.

Prerequisite(s): A minimum grade of "C" in EENG 3230 or Permission of Instructor.
TMAE 7331 Advanced Digital Signal Processing
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course discusses advanced topics in digital signal processing such as implementation of discrete-time systems, design of FIR/IIR digital filters, sampling and reconstruction of signals, multi-rate digital signal processing, linear prediction and optimum linear filters, and power spectrum estimation.
Prerequisite(s): A minimum grade of "C" in ENGR 2341 or Permission of Instructor.

TMAE 7332 Digital Control Systems
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An understanding of the elements of digital control theory will be developed. Students will be introduced to discrete system modeling, sampled data systems, z-transforms, discrete root-locus and state-space control designs, quantization and time delay effects and the different tools that can be used to analyze these properties. Students will also develop a working knowledge of digital control techniques.
Prerequisite(s): A minimum grade of "C" in EENG 5431 or EENG 5431 G or MENG 5536 or MENG 5536G or Permission of Instructor.

TMAE 7430 Industrial Case Study Analysis
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The systems approach and case study format are utilized for the resolution of current technical management problems of various industries. Problem solving methods are presented, discussed, and utilized in student activities.

TMAE 7431 Advanced Quality Control
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A study of modern philosophies, methodologies, and technologies for quality control and improvement with emphasis on total quality management, statistical process control, quality improvement methods, and acceptance sampling.

TMAE 7432 Advanced Engineering Economy
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Consideration of probability and risk effects on estimates, selection of the minimum, attractive rate of return, capitol rationing among competing projects, and economic analysis in government.

TMAE 7433 Facilities Planning
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An organized approach for planning a facility that achieves facilities location and design objectives, including how the activity's tangible assets best support achieving the activity's objectives. It is a composite of facilities location and facilities design with the approach based on the engineering design process. Techniques can be applied equally for non-manufacturing applications.

TMAE 7434 Product Lifecycle Analysis
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will provide a holistic overview of the product lifecycle starting with idea conceptualization and ending with environmental conscious product disposal. The cradle to grave design concept will be emphasized throughout this course. A related area of emphasis will be product demand forecasting and facilities design. Several aspects such as design review, Quality Function Deployment, trend extrapolation, statistical techniques, product functionality and usability will also be included.
Prerequisite(s): A minimum grade of "C" in TMAE 7431.

TMAE 7435 Manufacturing Systems Analysis
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A study of the analysis of manufacturing systems, systems analysis and problem solving in manufacturing. The tools of systems analysis will be used to formulate the real problems of manufacturing, identify where computer systems can help, and solve challenging manufacturing systems problems.

TMAE 7530 Research in Applied Engineering
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A study of modern research methods and their application to the preparation of the thesis and technical reports.

TMAE 7531 Technical Management and Leadership
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A study in the application of modern technical management and leadership principles in the Engineering and Information Technology disciplines. The course focuses on the process of obtaining, deploying, and utilizing a variety of essential resources that contribute to the effective and efficient operation of technical organizations in dynamic and competitive environments.

TMAE 7532 Global Technology
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An examination of the developments in engineering, technology, and industry worldwide and the effects upon international relations.

TMAE 7890 Selected Topics in Applied Engineering
1-3 Credit Hours. 1-3 Lecture Hours. 0-2 Lab Hours.
This course is scheduled on an infrequent basis to explore special areas of applied engineering.

TMAE 7891 Independent Study
1-3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Independent study is available for students to undertake individualized experimentation, research, study related to applied engineering, or a capstone project. The specific topic will be approved by a faculty member in the program, and credit will be assigned commensurate with the magnitude of the study.
Cross Listing(s): TMAE 7891S.

TMAE 7891S Independent Study
1-3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Independent study is available for students to undertake individualized experimentation, research, study related to applied engineering, or a capstone project. The specific topic will be approved by a faculty member in the program, and credit will be assigned commensurate with the magnitude of the study.
Cross Listing(s): TMAE 7891.

TMAE 7895 Special Problems in Applied Engineering
1-3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Individual and specialized study in the areas of applied engineering not otherwise covered in the program. Students must submit a proposal of the special problem for approval by the faculty member of record. Credit will be assigned commensurate with the magnitude of the study.

TMAE 7999 Thesis
1-6 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
This course focuses on the preparation and completion of the thesis.
Cross Listing(s): TMAE 7999S.

TMAE 7999S Thesis
1-6 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
This course focuses on the preparation and completion of the thesis.
Cross Listing(s): TMAE 7999.