MET - Mechanical Engineering Technology

MET 120 Computer Aided Drafting (3 Credit Hours)
Computer based drafting methods are taught with a major emphasis on 'Hands On' practice using 2-D AutoCAD software in the computer lab, along with the various methods of editing, manipulation, visualization and presentation of technical drawings. This course includes the basic principles of engineering drawing/hand sketching, dimensioning and tolerancing.

MET 200 Materials and Manufacturing Processes (3 Credit Hours)
Application and characteristics, both physical and chemical, of the materials most commonly used in industry as well as procedures and processes used in converting raw materials into a finished product.

MET 225 Strength of Materials Laboratory (1 Credit Hour)
A laboratory course dealing with the standard methods of inspecting and testing materials used in engineering applications with emphasis on laboratory reports, including presentation and interpretation of experimental data.
Pre- or corequisite: ENGT 220

MET 295 Topics (1-3 Credit Hours)
Study of selected topics.

MET 300 Thermodynamics (3 Credit Hours)
The basic laws of thermodynamics, properties of fluids, heat, and work and their applications in processes and cycles and an introduction to conduction heat transfer.
Prerequisites: CHEM 121N, MATH 211, and PHYS 111N or PHYS 231N

MET 310 Dynamics (3 Credit Hours)
A fundamental treatment of coplanar and three-dimensional kinematics and kinetics of particles and rigid bodies, including relative motion, mass moment of inertia, Newton's laws, work and energy and impulse and momentum.
Prerequisites: A grade of C or better in MATH 211, and MET 210 or CET 200 or ENGT 200

MET 320 Design of Machine Elements (3 Credit Hours)
Practical analyses of fundamental machine elements such as shafts, springs, and screws. Fundamental principles required for the correct design of the separate elements which compose the machine with attention given to problems of synthesis and the interrelationships of the design of elements within the sub-assembly. Topics include stress analysis of screws, belts, clutches, brakes, chains and thin and thick cylinders, and lubrication and bearings.
Prerequisites: A grade of C or better in MATH 211, and ENGT 220

MET 330 Fluid Mechanics (3 Credit Hours)
The study of fluid statics and dynamics, including momentum, energy, Bernoulli's equation, laminar and turbulent fluid flow and friction in pipes, fluid machinery, and open-channel flow.
Prerequisites: MATH 211, and MET 210 or CET 200 or ENGT 200

MET 331 Fluid Mechanics Laboratory (1 Credit Hour)
A laboratory course dealing with the verification of fluid equations and principles and the characteristics of fluid machinery with emphasis on presentation and interpretation of experimental data.
Prerequisites: MATH 211
Pre- or corequisite: MET 330

MET 340 Heat Transfer (3 Credit Hours)
A study of conduction, convection and radiation heat transfer and heat exchangers. Emphasis is on applications and problem solving using current techniques, and modern correlations.
Prerequisites: MET 300

MET 350 Thermal Applications (3 Credit Hours)
A study of the applications of thermodynamics. Topics include the basic steam and gas turbine power cycles, internal combustion engines, introduction to refrigeration systems, gas mixtures, and psychrometrics applied to air conditioning processes.
Prerequisites: MET 300 with a grade of C or better
MET 471 Nuclear Systems I (3 Credit Hours)
Reactor physics principles as applied to the design and operation of various
types of commercial nuclear power reactors. Topics include sources of
radiation and interaction with matter, neutron interactions, diffusion theory,
and reactor kinetics.
Prerequisites: MATH 211

MET 472 Nuclear Systems II (3 Credit Hours)
Complete study of the nuclear fuel cycle, from mining through fabrication,
fuel management in an operating commercial power reactor, spent fuel
management, and fuel reprocessing, with emphasis on chemical engineering
considerations.
Prerequisites: MET 471

MET 475 Marine Engineering I (3 Credit Hours)
This course includes: fundamental principles of naval architecture including
nomenclature, geometry, stability, hydrostatics, structures, and motions;
ship design processes; and a basic introduction to shipboard systems such as
HVAC, refrigeration, power generation, propulsion, hydraulics, electronics,
cargo handling systems, seawater systems, freshwater systems, and fuel, lube
and other oil systems.
Prerequisites: MET 330 and MET 350

MET 476 Marine Engineering II (3 Credit Hours)
This course builds upon MET 475 and provides a more in-depth look on
how the marine shipbuilding industry is using various software including
SIEMENS PLM, 3D CAD modeling and new technologies like laser
scanners and augmented reality to reshape the future of shipbuilding,
maintenance, and repair processes. Focus will be based on model-based
learning and creating a 'digital thread' of information. Students will practice
what they learn on shipbuilding concepts using commercial software that is
widely used across automotive, aerospace, and marine industries.
Prerequisites: MET 475

MET 480 High Performance Piston Engines (3 Credit Hours)
A study of the fundamental principles and performance characteristics of
spark ignition and diesel internal combustion engines. Overview of engine
types and their operation, engine design and operating parameters; ideal and
semi-empirical models of engine cycles; combustion, fluid flow and thermal
considerations in engine design and performance. Laboratory evaluation of
gine performance using flow and dynamometer systems. (cross-listed with
MAE 477/MAE 577)
Prerequisites: MET 350 or MAE 312

MET 485 Maintenance Engineering (3 Credit Hours)
This course looks at maintenance systems: predictive, preventative and
corrective; large scale maintenance systems, principles of reliability
engineering, maritime logistics; planning for maintenance and repair, using
and ordering spare parts, technical manuals, system specifications, and
shipyard operations.
Prerequisites: MATH 211

MET 495 Topics in Mechanical Engineering Technology (1-3 Credit
Hours)
Study of selected topics.
Prerequisites: permission of the instructor

MET 496 Topics in Mechanical Engineering Technology (1-3 Credit
Hours)
Study of selected topics.
Prerequisites: permission of the instructor

No Graduate courses found.