MECHANICAL ENGINEERING TECHNOLOGY (ACCREDITED) (MECH)

MECH 1014 Statics (3 Credits)
Analysis of the forces which act upon particles and rigid bodies at rest. Balances of forces and moments on an object provide the basis for equilibrium calculations involving points, rigid bodies, trusses, frames and machines with a variety of supports, including frictional. The concepts of centroids, center of gravity and moment of inertia are also introduced.
Prerequisites: MATH 1610 or higher and PHYS 1201
Previous: Legacy Equivalent(s): MEC* 104, MEC* 114

MECH 2034 Electromechanical Controls (4 Credits)
Introduces the student to the fundamentals of electric circuits and electrical machinery emphasizing DC/AC single and polyphase motors and generators. Presents electrical methods of manual and automatic control of mechanical systems. The laboratory portion covers motors, control systems, digital logic, and applications. Emphasizes the organization, report, and interpretation of test data in a written report for each experiment,
Prerequisites: MATH 1001 or higher
Additional fees may apply
Previous: Legacy Equivalent(s): MEC* 234

MECH 2038 Dynamics (4 Credits)
This course covers the fundamental techniques used for analyzing the motion of particles and rigid bodies and the forces which cause that motion. Translation and rotation as fundamental components of rectilinear, curvilinear and constrained plane motion are explained. Relative and absolute velocities and accelerations are treated with both graphical and computational techniques. Laboratory practice is used to verify and reinforce the theoretical concepts
Prerequisites: MATH 2600 or higher and MECH 1014
Additional fees may apply
Previous: Legacy Equivalent(s): MEC* 238

MECH 2040 Fundamentals of Heat and Thermodynamics (4 Credits)
This course covers the fundamental concepts of heat transfer and thermodynamics. Major topics in heat transfer include conduction, convection and radiation and their application to heat exchangers. Major topics in thermodynamics include the First and Second Laws of Thermodynamics and their application to vapor-power and refrigeration cycles. Laboratory experiments will supplement the theoretical class work.
Prerequisites: MATH 1610 or higher
Additional fees may apply
Previous: Legacy Equivalent(s): MEC* 240

MECH 2051 Materials Strength (4 Credits)
This course covers the principles involved in the analysis of stresses which occur within machine and structural elements subjected to various types of loads. Analyses of these stresses are made as applied to beams, columns, couplings and shafts, pressure vessels, connections and other load bearing elements. Laboratory activities will reinforce theory covered in lecture. Mechanical properties of common materials are determined using equipment such as Tensile Testing Machine, Torsion Testing Machine and Impact Testing Machine. Word Processing, Spreadsheet and Oral presentation programs are used in the analysis of experimental data, preparation of laboratory reports, and presentation of those reports in class.
Prerequisites: MECH 1014
Additional fees may apply
Previous: Legacy Equivalent(s): MEC* 251

MECH 2071 Fluid Mechanics (4 Credits)
An introductory survey of the principles and methods involved in the analysis of fluid systems. Included are common fluid properties, hydrostatics and the kinematics of fluid flow and energy relationships. The use of standard empirical information to reflect the departure of actual hardware performance from the theoretical is reflected in many of the applications considered. This course also provides laboratory experience with practical applications of some of the concepts learned in the lecture.
Prerequisites: MATH 1610 or higher
Additional fees may apply
Previous: Legacy Equivalent(s): MEC* 271

MECH 2072 Fluid Mechanics and Thermodynamics (4 Credits)
This course investigates the behavior of fluids from a fluid mechanics and thermodynamics point of view, including the concepts of enthalpy, entropy, and energy balances.
Prerequisites: PHYS 1105
Previous: Legacy Equivalent(s): MEC* 272

MECH 2074 Heat Transfer (2 Credits)
This course will include one- and two-dimension flow, and principles of convection, conduction, and radiation. Steady state conditions will be investigated.
Prerequisites: MATH 2600, MECH 2072, PHYS 1105
Corequisite: MECH 2075
Previous: Legacy Equivalent(s): MEC* 274

MECH 2075 Thermal Sciences Lab (1 Credits)
This course studies selected labs from the fields of fluid mechanics, thermodynamics, and heat transfer.
Corequisite: MECH 2074
Additional fees may apply
Previous: Legacy Equivalent(s): MEC* 275