ENGINEERING (ENGR)

ENGR 201. Statics
Credits: 3
Corequisite: Concurrent registration in, or previous successful completion of, MATH 166 with a grade of C or better.
Typically Offered: FALLSPR
Vector approach to principles of statics. Resultants of force systems, equilibrium of force systems, analysis of structures, centroids, moments of inertia.

ENGR 202. Dynamics
Credits: 3
Prerequisite: ENGR 201 and MATH 166, both with a grade of C or better.
Typically Offered: FALLSPR
Vector approach to principles of dynamics. Rectilinear and curvilinear translation, rotation, plane motion, force-mass-inertia, work-energy, impulse-momentum.

ENGR 203. Mechanics of Materials
Credits: 3
Prerequisite: ENGR 201 and MATH 166, both with a grade of C or better.
Typically Offered: SPRING
Students study simple stress and strain, torsion, shear and bending moment, flexural and shearing stresses in beams, combined stresses, deflection of beams, statically indeterminate members and columns.

ENGR 204. Surveying I
Credits: 3
Prerequisite: MATH 105 or MATH 107.
Corequisite: Concurrent registration in, or previous successful completion of ENGR 204L.
Typically Offered: FALL
This course includes an introduction to surveying, measurements and errors, measurements of distances and angles, differential leveling, traverse surveys, coordinate geometry and area calculations, mapping, construction surveys, simple horizontal and vertical curves, earthwork calculations, and an introduction to GPS surveying, state plane coordinates and Public Land Survey system.

ENGR 204L. Surveying I Lab
Credits: 1
Corequisite: Concurrent registration in, or previous successful completion of, ENGR 204.
Typically Offered: FALL
Laboratory field and classroom exercises dealing with measurements of distances, angles, and coordinate geometry; use of tapes, EDM, total stations, GPS/GNSS, and automatic levels; traversing; leveling; horizontal curves; vertical curves; and topographic surveys.

ENGR 205. Surveying II
Credits: 3
Prerequisites: ENGR 204 and ENGR 204L.
Corequisite: ENGR 205L.
Typically Offered: SPRING
This course includes expanded topics on state plane coordinate system, Public Land Survey system, survey types (including boundary surveys, A.L.T.A. surveys and others), survey controls, precision, additional topics in GPS surveying, laser scan surveys, and surveying data collection and reduction.

ENGR 205L. Surveying II Lab
Credits: 1
Typically Offered: SPRING
Three hours of lab per week. Field and office exercises that supplement lecture material. Equipment used includes tapes, chains, levels, total stations, robotic/spatial total stations, and GPS equipment.

ENGR 206. Fluid Mechanics
Credits: 3
Prerequisite: ENGR 201 and Math 265, both with a grade of C or better.
Corequisite: Concurrent registration in, or previous successful completion of, ENGR 202 with a grade of C or better.
Typically Offered: ONDEMAND
This course covers fluid properties, fluid statics, fluid dynamics, transport theory and transport analogies, conservation of mass, energy and momentum, dimensional analysis, boundary layer concepts, pipe flows, compressible flow, and open channel flow.

ENGR 241. Thermodynamics I
Credits: 3
Prerequisite: ENGR 201 and MATH 166, both with a grade of C or better.
Corequisite: Concurrent registration in, or previous successful completion of, ENGR 202 with a grade of C or better.
Typically Offered: ONDEMAND
Fundamental concepts of thermal energy relationships, processes and cycles are introduced, including: first and second law of thermodynamics, entropy, and availability.