

# COURSES

## ENGINEERING

### ENGR 2301 ENGINEERING MECHANICS-STATICS

3 lec (3 Cr.) This is a three credit hour course. Topics include basic theory of engineering mechanics, using calculus, involving the description of forces, moments, and couples acting on stationary engineering structures; equilibrium in two and three dimensions; free-body diagrams; friction; centroids; centers of gravity; and moments of inertia.

Pre-requisites: PHYS 2425 University Physics I

Concurrent enrollment in or previous completion of MATH 2414 Calculus II

Credits

3

Distribution

ENGR

Offered

Fall Only

### ENGR 2302 ENGINEERING MECHANICS-DYNAMICS

3 lec (3 Cr.) This is a three credit hour course. Topics include Basic theory of engineering mechanics, using calculus, involving the motion of particles, rigid bodies, and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems.

Pre-requisites: ENGR 2301 Engineering Mechanics – Statics

Credits

3

Distribution

ENGR

Offered

Spring Only

### ENGR 2305 ELECTRICAL CIRCUITS I

3 lec (3 Cr.) This course is a study of the principles of electrical circuits and systems. Basic circuit elements (resistance, inductance, mutual inductance, capacitance, independent and dependent controlled voltage, and current sources); topology of electrical networks; Kirchhoff's laws; node and mesh analysis; DC circuit analysis; operational amplifiers; transient and sinusoidal steady-state analysis; AC circuit analysis; first- and second-order circuits; Bode plots; and use of computer simulation software to solve circuit problems.

Pre-requisites: PHYS 2425 University Physics I; MATH 2414 Calculus II

Pre-requisite or Co-requisite: MATH 2320 Differential Equations

Credits

3

Distribution

ENGR

Offered

Spring Only