Basic Engineering Courses

Courses

BE 1101. Introduction to Engineer Lab.
Introduction to Engineering Lab (0-3) Students will learn and practice team skills, data analysis techniques, written and oral communication skills, engineering math applications, and problem solving using Excel. Students will work in teams on several hands-on projects that each culminate in a written report and oral presentation.
1 Credit Hour
3 Total Contact Hour
3 Lab Hour
0 Lecture Hour
0 Other Hour

Prerequisite(s): (ENGL 1311 w/C or better) OR (RWS 1301 w/C or better) OR (COMM 1611 w/C or better) OR (RWS 1601 w/C or better) OR (ENGL 1611 w/C or better) AND (MATH 1411 w/C or better) OR (MATH 1312 w/C or better) OR (MATH 2313 w/C or better) OR (MATH 2326 w/C or better) OR (MATH 1411A w/C or better) AND MATH 1411B w/C or better AND MATH 1411C w/C or better

Graphic Fundamentals in Engineering Design (1-3) Fundamentals of multiview projections, auxiliaries, sections, pictorial drawings, dimensioning; introduction to CAD, decision process, and geographical information systems.
2 Credit Hours
4 Total Contact Hours
3 Lab Hours
1 Lecture Hours
0 Other Hours

BE 1301. Introduction to Engineering.
Introduction to Engineering (3-0) This course will introduce the student to effective methods for solving engineering problems using mathematics, fundamental engineering concepts, data analysis techniques, and computational tools. The course will also introduce the student to the engineering profession, including the role and responsibilities of the engineer in today's society and engineering ethics.
3 Credit Hours
3 Total Contact Hours
0 Lab Hours
3 Lecture Hours
0 Other Hours

Major Restrictions:
Restricted to majors of LDCE,LDIE,LDME,LDMT

Classification Restrictions:
Restricted to class of FR,SO

Prerequisite(s): (ENGL 1311 w/C or better) OR (RWS 1301 w/C or better) OR (COMM 1611 w/C or better) OR (RWS 1601 w/C or better) OR (ENGL 1611 w/C or better) AND (MATH 1411 w/C or better) OR (MATH 1312 w/C or better) OR (MATH 2313 w/C or better) OR (MATH 2326 w/C or better) OR (MATH 1411A w/C or better) AND MATH 1411B w/C or better AND MATH 1411C w/C or better

BE 2303. Intro. to Mats. Sci. and Engr..
Introduction to Materials Science and Engineering (3-0) Introduction to properties of engineering materials and relationships to their structure, behavior, and processing; materials testing and measurement of properties. Selection of materials for engineering applications considering interrelationships between structure, properties, processing, and performance.
3 Credit Hours
3 Total Contact Hours
0 Lab Hours
3 Lecture Hours
0 Other Hours

Prerequisite(s): (CHEM 1305 w/C or better)
BE 2326. Engineering Economy.
Engineering Economy (3-0) Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution.
3 Credit Hours
3 Total Contact Hours
0 Lab Hours
3 Lecture Hours
0 Other Hours
Prerequisite(s): (MATH 1411 w/C or better ) OR (MATH 1312 w/C or better ) OR (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better ) OR (MATH 1411A w/C or better AND MATH 1411B w/C or better AND MATH 1411C w/C or better)

BE 2338. Mechanics II.
Mechanics II (2-3) A second course in Newtonian mechanics; dynamics (kinematics and kinetics) of particles and rigid bodies; work and energy; impulse and momentum.
3 Credit Hours
5 Total Contact Hours
3 Lab Hours
2 Lecture Hours
0 Other Hours
Prerequisite(s): (MATH 1312 w/C or better ) OR (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better)

BE 2375. Intro. to Thermal-Fluid Sci.
Introduction to Thermal-Fluid Science (2-3) An introduction to the basic concepts of thermodynamics and fluid mechanics to include properties, property relationships, states and fields. Presentation of the basic equations of thermal-fluid science, continuity, first and second laws of thermodynamics and momentum.
3 Credit Hours
5 Total Contact Hours
3 Lab Hours
2 Lecture Hours
0 Other Hours
Prerequisite(s): (BE 2338 w/C or better ) OR (MECH 2338 w/C or better)

BE 2377. Electrical Circuits and Motors.
Electrical Circuits and Motors (2-3) Principles of electrical circuits, generators, and motors. Introduction to electronics and introduction to microprocessors for data acquisition.
3 Credit Hours
5 Total Contact Hours
3 Lab Hours
2 Lecture Hours
0 Other Hours
Prerequisite(s): (PHYS 2421 w/C or better ) OR (PHYS 2411 w/C or better)

BE 2434. Mechanics I.
Mechanics I (3-3) A first course in Newtonian mechanics using vectors. Equilibrium of particles and rigid bodies, forces in space, centroids, moments of inertia, study of stress and strain; use of stress-load equations to determine the state of stress in specific structural elements; study of combined stresses.
4 Credit Hours
6 Total Contact Hours
3 Lab Hours
3 Lecture Hours
0 Other Hours
Prerequisite(s): (MATH 1411 w/C or better ) OR (MATH 1312 w/C or better ) OR (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better ) OR (MATH 1411A w/C or better AND MATH 1411B w/C or better AND MATH 1411C w/C or better)
BE 3341. Engineering Analysis.
Engineering Analysis (3-0) Applications of mathematical principles to the analysis of engineering problems: derivation and solution of mathematical models of physical systems, closed-form solutions, computer solutions by programming in a higher language and by using mathematical computer packages.
3 Credit Hours
3 Total Contact Hours
0 Lab Hours
3 Lecture Hours
0 Other Hours
Prerequisite(s): (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better ) AND (MATH 2326 w/C or better)

Engineering Probability and Statistical Models (2-3) Fundamental concepts of discrete and continuous random variables, distribution functions, moments, moment generating functions, statistical dependence, stochastic modeling and random events, graphical and numerical methods, descriptive and inferential statistics, point and interval estimation, hypothesis testing and regression analysis. The creation and proper utilization of statistical decision models for engineering analysis and design are stressed. Emphasis is on measurement, formulation analysis and design of physical problems.
3 Credit Hours
5 Total Contact Hours
3 Lab Hours
2 Lecture Hours
0 Other Hours
Prerequisite(s): (MATH 2313 w/C or better ) OR (MATH 2326 w/C or better)