University of the Incarnate Word®

Bachelor of Science in Engineering - Mechanical Track

School of Mathematics, Science and Engineering

PROGRAM OVERVIEW

The Bachelor of Science in Engineering in the School of Mathematics, Science and Engineering at the University of the Incarnate Word develops highly skilled, highly educated engineering professionals ready to succeed in the lab, in the field or in the C-suite.

The B.S. in Engineering is a 129-hour degree program that combines a strong core of math, science and engineering courses with an intensive study in one of four tracks. Students can choose from electrical, mechanical, management and mechatronics tracks based on their career or academic goals.

The Mechanical Track is a hands-on concentration that includes courses covering the following topics, among others—mechanical vibrations, degrees of freedom for movement in a structure, stress analysis of elastic solids, finite elements, stress in solids, fatigue failure, gears, springs, thermophysical properties, heat transfer and heat exchangers. Students can expect to explore the inner workings of complex machines like vehicles and industrial equipment. Graduates specializing in this track are also prepared to pursue a graduate degree in mechanical engineering.

Engineering students also have the opportunity to work with faculty on ongoing research projects, among them are Unmanned Aircraft Systems (UAS) as part of the department's Autonomous Vehicle Systems (AVS) Lab.

The Capstone course challenges students to apply their engineering education and apply it as a solution or innovation to a contemporary issue.

ADMISSION REQUIREMENTS

The requirements for admission to the B.S. in Engineering program are the same as the requirements for admission to the University of the Incarnate Word.

CONTACT

UIW Admissions
(210) 829-6005
admission@uiwtx.edu

Engineering - Mechanical

DEGREE PLAN

B.S. in Engineering - Mechanical

FRESHMAN YEAR

Fall

CHEM 1301: Chemical Principles I (3 hours)
MATH 2312: Calculus I (3 hours)
ENGL 1311: Composition I (3 hours)
ENGR 1201: Intro to Engineering (2 hours)
ENGR 1310: Engineering Graphics CAD I (3 hours)
ECON 2301: Macroeconomics (3 hours)
Total Hours: 17

Spring

CHEM 1302: Chemical Principles II (3 hours)
CHEM 1203: General Chemistry Lab (2 hours)
MATH 2313: Calculus II (3 hours)
ENGL 1312: Composition II (3 hours)
ENGR 1312: Engineering Graphics CAD II (3 hours)
PEHP Physical Education (1 hour)
Total Hours: 15

SOPHOMORE YEAR

Fall

MATH 2322: Linear Algebra (3 hours)
ENGR 2330: Engineering Prob. & Statistics (3 hours)
ENGR 2305: Engineering Physics I (3 hours)
ENGR 2105: Engineering Physics I Lab (1 hour)
ENGL 2310: World Literature Studies (3 hours)
Modern Language I (3 hours)
Total Hours: 16

Spring

ENGR 2340: Computer Programming (3 hours)
MATH 2314: Differential Equations (3 hours)
ENGR 2306: Engineering Physics II (3 hours)
ENGR 2106: Engineering Physics II Lab (1 hour)
ENGR 3350: Statics (3 hours)
Modern Language II (3 hours)
Total Hours: 16

JUNIOR YEAR

Fall

ENGR 3340: Numerical Methods (3 hours)
ENGR 4375: Thermodynamics (3 hours)
PHIL 1381: Intro. to Philosophy (3 hours)
HIST 1311, 1312, 1321, or 1322 (3 hours)
Upper Level Engineering Elective (3 hours)
Total Hours: 15

Spring

ENGR 3430: Engineering Analysis and Lab (4 hours)
Upper Level Engineering Elective (3 hours)
Fine Arts (3 hours)
ENGR 4373: Heat Transfer (3 hours)
ENGR 3373: Dynamics (3 hours)
Total Hours: 16

SENIOR YEAR

Fall

ENGR 3460: Circuit Analysis and Lab (4 hours)
RELS 1305, 1315, 1325, or 1327 (3 hours)
ENGR 3455: Mechanics of Materials and Lab (4 hours)
DWHP 1200: Dimensions of Wellness (3 hours)
ENGR 4353: Mechanical Vibrations (3 hours)
Total Hours: 16

Spring

ENGR 3462: Electronics and Lab (4 hours)
Upper Level RELS or PHIL (3 hours)
ENGR 4470: Fluid Mechanics and Lab (4 hours)
ENGR 4490: Senior Capstone (4 hours)
ENGR 4354: Finite Element Analysis or ENGR 4357: Mechanical Design (3 hours)
Total Hours: 18

129 hours needed to complete the B.S. in Engineering with a Mechanical track.

More information | **bit.ly/uiw-engineering**