University of the Incarnate Word®
Bachelor of Science in Mechatronics Engineering

School of Mathematics, Science and Engineering

PROGRAM OVERVIEW

The Bachelor of Science (B.S.) in Mechatronics 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 Mechatronics Engineering combines a strong core of math, science and engineering courses with intensive study in one of four concentrations. The program leads to versatile careers in cutting-edge fields that are critical for a more technologically advanced future.

The degree program is an interdisciplinary engineering field that integrates mechanical engineering, electronics, computer science, and control engineering to design and create intelligent systems and products. This program aims to provide students with a solid foundation in both mechanical and electronic engineering, along with computer programming and control systems.

Mechatronics engineering students also have the opportunity to work with faculty on ongoing research projects — among them, 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 Mechatronics 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

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Mechatronics Engineering (B.S.)

B.S. in Mechatronics Engineering

FRESHMAN YEAR

Fall

CHEM 1301: Chemical Principles I (3 hours)
CHEM 1101: Chemical Principles I Lab (1 hour)
ENGR 1301: Engineering Graphics CAD I (3 hours)
ENGL 1311: Composition I (3 hours)
ENGR 1201: Intro to Engineering (2 hours)
FYES 1211: First Year Experience Seminar (2 hours)
MATH 2312: Calculus I (3 hours)
Total Hours: 17

Spring

ECON 2301: Macroeconomics (3 hours)
ENGL 1312: Composition II (3 hours)
ENGR 2305: Engineering Physics I (3 hours)
ENGR 2105: Engineering Physics I Lab (1 hour)
ENGR 2330: Engineering Prob. & Statistics
  (3 hours)
MATH 2313: Calculus II (3 hours)
PEHP Physical Education (1 hour)
Total Hours: 17

SOPHOMORE YEAR

Fall

MATH 2314: Differential Equations (3 hours)
ENGR 2306: Engineering Physics II (3 hours)
ENGR 2106: Engineering Physics II Lab (1 hour)
MATH 2322: Linear Algebra (3 hours)
ENGR 2350: Statics (3 hours)
Modern Language I (3 hours)
Total Hours: 16

Spring

ENGL 2310: World Literature Studies (3 hours)
ENGR 2340: Computer Programming (3 hours)
ENGR 2360: Circuit Analysis (3 hours)
ENGR 2160: Circuit Analysis Lab (1 hour)
MATH 3314: Calculus III (3 hours)
Modern Language II (3 hours)
Total Hours: 16

JUNIOR YEAR

Fall

ENGR 3355: Mechanics of Materials (3 hours)
ENGR 3155: Mechanics of Materials Lab (1 hour)
ENGR 3362: Electronics (3 hours)
ENGR 3162: Electronics Lab (1 hour)
ENGR 3340: Numerical Methods and Advanced
  Programming (3 hours)
ENGR 3373: Dynamics (3 hours)
ENGR 3330: Engineering Analysis (3 hours)
Total Hours: 17

Spring

ENGR 2363: Digital Logic (3 hours)
ENGR 2163: Digital Logic Lab (1 hour)
ENGR 3364: Signals and Systems (3 hours)
ENGR 4353: Mechanical Vibrations (3 hours)
RELS 1305, 1315, 1325, or 1327H (3 hours)
Fine Arts (3 hours)
Total Hours: 16

SENIOR YEAR

Fall

ENGR 4180: Senior Design 1 (1 hour)
ENGR 4310: Design of Mechanisms (3 hours)
ENGR 4368: Intro to Control Systems (3 hours)
HIST 1311, 1312, 1321, 1322 (3 hours)
PHIL 1381: Intro to Philosophy (3 hours)
Upper-Level Technical Elective (3 hours)
Total Hours: 16

Spring

ENGR 4321: Microcontrollers and Embedded
  Systems (3 hours)
ENGR 4366: Digital Signal Processing (3 hours)
ENGR 4380: Senior Design 2 (3 hours)
Upper-Level RELS or PHIL (3 hours)
Upper-Level Technical Elective (3 hours)
Total Hours: 15

130 hours needed to complete the B.S. in Mechatronics Engineering.