



Mechanical Engineering Department

General Information

Mumford Institute of Technology offers Undergraduate degree in Mechatronics Engineering: Degree: Bachelor of Engineering.

B.Eng. (Mechatronics. E)

Programs and Objectives

Mechatronics Engineering is a combination of Electrical and Electronics, Mechanical and Computer Engineering. It is a synergistic integration of mechanics, electronics, robotics and spectrum of knowledge from allied engineering fields.

Vision

The vision of department of Mechatronics is to become the best Mechatronics Department in the sub-region through the establishment of the state-of-the-art Research center and education environment that will impact and produce excellent productive graduates.

Mission

The mission of the department of Mechatronics is to conduct leading edge research and prepare graduates who can apply the state-of-the-art technologies to develop intelligent machines, and actively engage themselves in industrial research and development to uplift the image of their countries.

Chemistry 90 Introduction to Chemistry (0 cr.)

The fundamental principles of chemistry and their applications to social issues. Problem solving in chemistry. Prereq. Math 80, Coreq. Math 90

Math 70 Elementary Algebra(0 cr)

Review of arithmetic, algebraic expressions, Linear equations, monomial fractions, graphing lines, polynomials, verbal problems.

Math 80 Fundamentals of Algebra and Geometry (0 cr.)

Linear equations and graphs, functions, the point-slope equation, linear in qualities, polynomial functions, rational expressions, radicals, quadratic equations, sequences, series, and the binomial theorem. Prereq. Math70

Math 90 Intermediate Algebra and Trigonometry (0 cr.)

Rational expressions, rational exponents and radicals, conic sections and systems of equations, binomial theorem, introduction to trigonometry. Prereq. Math 80.

Math 100 Pre-calculus (3 cr.)

Intervals, inequalities, introduction to functions, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions and formulas. Prereq. Math 90

First- Year (Freshman year)

First-Term

Math 101-01	Analytic Geometry and Calculus I	(3 cr.)
Chem 103-01	General Chemistry for Engineers	(3 cr.)
Engl 101-01	Freshman Composition	(3 cr.)
Phys 107-01	General Physics 1	(4 cr.)

Engr 101-01	Engineering Graphics (Design)	(1 cr.)
Engr 102-01	Engineering Orientation	(3 cr.)
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		17 cr.

Second –Term

Math 102-01	Analytic Geometry and Calculus II	(3 cr.)
Chem 104-01	General chemistry for Engineers II	(3 cr.)
Phys 108-01	General Physics II	(3 cr.)
Engr 103-01	Introduction to Computers for Engineers	(3 cr.)
Econ 101-01	Engineering Economics	(3 cr.)
Engl 102-01	Freshman Composition II	(3 cr.)

		18 cr.

Second-Year Program (Sophomore Year)

First-Term

Math 203-02	Analytic Geometry and Calculus III	(3 cr.)
Engr 204-02	Engineering Circuit Analysis 1	(3 cr.)
EE 205-02	Circuit analysis Lab.	(1 cr.)
EE 206-02	Digital Logic Design	(3 cr.)
EE 207-02	Digital Logic Design Lab	(1 cr.)
Engr 210-02	Thermodynamics I	(3 cr.)

ME 246-02	Engineering Mechanics I	(3 cr.)

		17 cr.

Second-Term

Math 291-02	Methods in Differential Equations	(3 cr.)
M E 247-02	Engineering Mechanics II	(3 cr.)
M E 231-02	Thermodynamics II	(3 cr.)
ME 230-02	Mechanics of Materials	(3cr.)
EE241-02	Electronics I	(3 cr.)
ENGR276-02	Engineering Economics	(3 cr.)

		18 cr.

Third-Year (Junior year)

First-Term

Math 392-03	Linear Algebra and Vector Analysis	(3 cr.)
ME 361-03	Engineering Materials	(3 cr.)
ME311-03	Mechatronics	(3 cr.)
EE 342-03	Electronics II	(3 cr.)
ME 356-03	Fluid Mechanics	(3 cr.)
Phyl 101-03	Philosophy 1	(3 cr.)

		18 cr.

Second-Term

ME 371-03	Computer-Aided Design	(3 cr.)
ME 322-03	Numerical Methods and Fundamental Computer Applications in Mechanical Engineering	(3 cr.)
EE 366-03	Electronics Circuits and Devices	(3 cr.)
ME 472-03	Mechanical Systems Design	(3 cr.)
ME 421-03	Systems Modeling, Analysis and Control	(3 cr.)
ME 433-03	Heat Transfer	(3 cr.)
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		(18 cr.)

Fourth- Year (Senior year)

First-Term

EE 417-04	Stochastic Processes and Systems	(3 cr.)
ME 462-04	Manufacturing Processes and Materials	(3 cr.)
ME 471-04	Energy Systems Design	(3 cr.)
ME 473-04	Senior Design Project I	(3 cr.)
ME 436-04	Aero-Thermal Fluids	(3 cr.)
Philo 309-04	Social and Political Philosophy	(3 cr.)

		18 cr.

Second-Term

ME 474-04	Senior Design Project II	(3 cr.)
ME 472-04	Mechanical Systems Design	(3 cr.)
ME 431-04	Mechanical Properties of Materials	(3 cr.)
ME 441-04	Advanced Stress Analysis	(3 cr.)
•	Elective From Social Sciences	(3 cr.)
•	Elective From Philosophy	(3 cr.)

18 cr.

Total Credits

140Cr.