

Mechatronics, BS

The Bachelor of Science in Mechatronics is designed to provide students with an interdisciplinary set of skills that will enable them to successfully compete in today's fast-changing manufacturing environment. The program is designed to equip students with the knowledge and relevant experience in the four major areas that compose mechatronics and to help students play key roles in the Fourth Industrial Revolution—mechanical systems, electrical systems, control systems, and computer engineering. Successful graduates will understand in-depth the engineering fundamentals, the related technologies, and their integration in robotic and mechatronic devices and automation systems.

Program Requirements

Complete all courses listed below unless otherwise indicated.

Universitywide Requirement

Minimum 120 total semester hours required.

Minimum 2.000 GPA required.

Students must earn a minimum of 60 Northeastern University semester hours in order to receive a bachelor's degree.

Note: Individual program requirements may exceed the above minima.

NUpath Requirements

All undergraduate students are required to complete the NUpath requirements (<http://catalog.northeastern.edu/professional-studies/university-academics/nupath/>).

General Education Courses

Code	Title	Hours
ENG 1105 and ENG 1106	College Writing 1 and Lab for ENG 1105	4
CMN 1100	Organizational Communication	3
ECN 1200	Principles of Macroeconomics	3
ENG 3105 and ENG 3106	Writing for the Professions: Science and Engineering and Lab for ENG 3105	4
ITC 3620	Legal and Ethical Issues in Cybersecurity	3

Engineering Education Courses

Code	Title	Hours
MTH 2100	Calculus 1	3
MTH 2105	Calculus 2	3
MTH 3300	Applied Probability and Statistics	3
GET 1150	Foundations of Engineering Graphics and Design	3
GET 2100	Computer Engineering Programming and Analysis	3
MET 3300	Engineering Materials Science	3
PHY 1200 and PHY 1201	Physics 1 and Lab for PHY 1200	4

Fundamental Mechatronics Courses

Code	Title	Hours
CET 2100	Essentials of Computer Organization	3
CET 2200	Data Structures and Algorithms	3
CET 3100	Computer Networking and Communications Technology	3
EET 2005 and EET 2006	Circuits AC/DC and Lab for EET 2005	5
EET 3100 and EET 3101	Electronics 1 and Lab for EET 3100	5
EET 3750	Linear Systems (Linear Systems)	3
EET 3800	Control Systems (Control Systems)	3
MET 2100	Mechanics 1: Statics	3
MET 2200	Mechanics 2: Dynamics (Linear Systems)	3

MET 4100	Mechanical Engineering Systems Design	3
EET 3200 and EET 3201	Electronics 2 and Lab for EET 3200	5

Advanced Mechatronics Courses

Code	Title	Hours
AVM 4100	Mechatronics	3
CET 4210	Robotics	3
EET 3300	Digital Logic	3
MET 2000	Engineering Computer-Aided Design and Tolerance Analysis	3
AVM 4150	Automation	3
AVM 4250	Hydraulics and Pneumatics	3

Capstone Project

Code	Title	Hours
GET 4840	Engineering Technology Capstone Project Preparation and Proposal	2
GET 4850	Engineering Technology Capstone Project Execution	4

Electives

Complete a minimum of 18 semester hours to reach a total of 120 semester hours.

Plan of Study

Term 1	Hours
ENG 1105 and ENG 1106	4
MTH 2100	3
GET 1150	3
PHY 1200 and PHY 1201	4
	14
Term 2	Hours
GET 2100	3
EET 2000 and EET 2001	5
MTH 2105	3
MET 3300	3
	14
Term 3	Hours
CMN 1100	3
Elective	3
EET 3100 and EET 3101	5
	11
Term 4	Hours
MET 2100	3
CET 2100	3
MET 2000	3
	9
Term 5	Hours
CET 2200	3
EET 3750 (Linear Systems)	3
EET 3200 and EET 3201	5
MET 2200	3
	14

Term	Hours	
Term 6		
MTH 3300		3
Elective		3
		6
Term 7		
AVM 4150		3
MET 4100		3
CET 3100		3
EET 3300		3
EET 3800		3
		15
Term 8		
CET 4210		3
AVM 4250		3
Elective		3
		9
Term 9		
ENG 3105 and ENG 3106		4
ECN 1200		3
		7
Term 10		
AVM 4100		3
GET 4840		2
Elective		3
Elective		3
		11
Term 11		
ITC 3620		3
GET 4850		4
Elective		3
		10

Total Hours: 120