Robotics Engineering - B.S.

Effective Fall 2020, Johnson & Wales University will complete its transition from a term calendar to a semester calendar. Starting with the 2020–21 catalog, all programs will represent course requirements in semester credit hours rather than quarter credit hours. Students who started on terms and will finish their degree requirements on semesters should consult with their assigned academic counselor in Student Academic Services or faculty advisor on semester transition academic planning.

The Robotics Engineering bachelor's degree program provides a broad based foundation in current and evolving areas of robotics, automation and mechatronics engineering. The program focuses on the dynamics of the industry in robotic and mechatronic systems and applications.

Our immersive, lab-based approach integrates technology and engineering applications with contemporary developments in the field.

Upon completion of the program, graduates are expected to:

- Apply knowledge of mathematics, science, engineering and technology as required by the field of robotics engineering.
- Use engineering processes to analyze problems, formulate solutions, conduct simulations and experiments and interpret data.
- Apply written, oral, and graphical communication for the engineering field with consideration for ethical and global concerns.
- Use techniques, skills, industry related tools and technical literature to complete projects, analyze, and interpret data to formulate solutions to engineering problems.
- Integrate knowledge, tools, and problem solving skills to implement the testing of solutions to engineering problems.

Through our experiential education options, you'll have the opportunity to gain work experience at a variety of industry partnership sites.

Robotics Engineering

A four-year program leading to the bachelor of science degree

Major Courses		
ENGN1001	Digital Logic Design I	4.5
ENGN2000	Robotics	4.5
ENGN2002	Digital Logic Design II	4.5
ENGN2003	Circuit Theory I	4.5
ENGN2004	Circuit Theory I Lab	1
ENGN2005	Circuit Theory II	4.5
ENGN2006	Circuit Theory II Lab	1
ENGN2025	Applied Mechanics I: Statics	4.5
ENGN2032	Industrial Robotics	4.5
ENGN2035	Programmable Logic Controllers	4.5
ENGN2045	Computer Vision	4.5
ENGN2062	Artificial Intelligence	4.5
ENGN2075	Microcontrollers I	4.5
ENGN2080	Microcontrollers II	4.5
ENGN3010	Mechatronics I	4.5
ENGN3015	Mechatronics II	4.5
ENGN3025	Applied Mechanics II: Dynamics	4.5
ENGN3053	Strength of Materials	4.5
ENGN3075	Applied Fluid Mechanics	4.5
ENGN4075	Robotics & Automation I	4.5
ENGN4080	Robotics & Automation II	4.5
MATH2040	Calculus II	4.5
Related Professional Studies		
CAD1025	Parametric Modeling	4.5
CAR0010	Career Management	1
CSIS1020	Fundamentals of C Programming	4.5
CSIS2050	Advanced Programming Concepts	4.5
ENGN1015	Introduction to Engineering	4.5
PRMG2010	Introduction to Project Management	4.5
Applied/Experiential Learning		
Choose 9 credits of the following: *		9
DEE3999	Directed Experiential Education **	
TECX4045	Technical Solutions Team I	
TECX4046	Technical Solutions Team II	
TECX4099	College of Engineering & Design Internship	
A&S Core Experience		
Communications Foundation Courses		13.5
ENG1020	English Composition	
ENG1021	Advanced Composition and Communication	
ENG1030	Communication Skills	
Integrative Learning		9
Two ILS courses, one at the 2000 level, and one at the 4000 level.		
Arts and Humanities		9
PHIL3240	Ethics: A Global Perspective	
One course from ART, HIST, HUM‡, LIT, or REL		
Mathematics		9
MATH1030	Precalculus (or higher, based on student's placement) ***	
MATH1040	Calculus I	
Science		6
PHY1011 & PHY1015	General Physics I and General Physics I Laboratory	
Social Sciences		9
Two courses from different disciplines: ANTH°°, ECON, LEAD, PSCI, PSYC, SOC		
A&S Electives		9
Two courses with an EASC attribute, at least one at 3000 level or higher.		
Total Credits		189.0

* Students not meeting the requirements for experiential education may take other course options with Dept. Chair and Dean approval.

** Directed Experiential Education (DEE) opportunities are based on project availability with community partners and student eligibility. For more information, visit Experiential Education & Career Services (EE&CS).

*** Students that do not place in MATH1030 Precalculus will need to take an extra course, MATH1020 Fundamentals of Algebra, as prerequisite. If needed this will count as an A&S elective.

Visit Courses by Subject Code for a listing of all campus courses.

‡HUM courses are not offered in North Miami or Online.
^BIO courses are not offered in North Miami, Charlotte or Online.
¶CAD courses are only offered in Providence.
±CHM courses are not offered in North Miami or Online.
°PHY courses are not offered in Charlotte.
°°ANTH courses are not offered in North Miami or Charlotte.

NOTE: Students must pass MATH0010 Basic Mathematics or have equivalent placement scores to enroll in required math course(s).

Students who graduate with a bachelor's degree must leave Johnson & Wales University with effective writing skills to fulfill the graduation writing requirement. These writing skills will be assessed at the completion of ENG1021 Advanced Composition and Communication. Students who have met the requirement of ENG1021 Advanced Composition and Communication or ENG1027 Honors Advanced Composition and Communications: Civic Discourse outside of Johnson & Wales University must fulfill the graduation writing requirement through successful completion of ENG0001 Writing Workshop.

In collaboration with academic colleges across all JWU campuses, JWU Study Abroad programs offer a variety of international options for major, minor, Arts & Sciences, and elective credit at many price points for students during the academic year and summer. Faculty-led, exchange, affiliate, and direct-enroll programs range in duration from one week to a full semester. Financial aid is applicable and scholarships are available. Visit the study abroad website for information, program descriptions and online applications.