

College of Science, Technology, Engineering, and Mathematics

Mechanical Engineering BS

(149-150 credits)

Why Study Mechanical Engineering?

Mechanical engineering is among the country's highest paid occupations and lowest employment rates. The current economy thrives on innovation, and mechanical engineers are at the forefront of it, constantly developing not only new and exciting products, but also technologies that improve society and the world. A graduate with a BSME can expect a wide range of options. Mechanical engineers are in high demand in the bio-mechanical field, aeronautics, structural applications, energy transfer, robotics, automation, composite materials, and alternative energy. Many graduates have begun their careers working for Boeing and Microsoft in the Northwest, and many are employed in diverse companies in positions ranging from design engineers to upper management.

Other Degree Options

Minors in Applied Technology, Construction Management, Manufacturing, and Mechanical Engineering

Career Opportunities

Design Engineer, HVAC Engineer, Manufacturing Engineer, Materials Engineer, Robotics and Automation, and Mechanical Engineer



Department Chair

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Student Success Coordinator

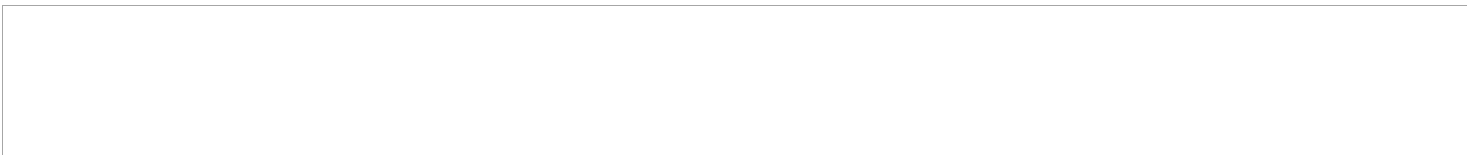
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<http://www.ewu.edu/cstem>

This is an example of a four year class schedule. Academic Advisors are there to help create individualized plans.

	Q1	Q2	Q3
First Year	BACR (5 cr.)	ENGL 101 (5 cr.)	MATH 163 (5 cr.)
	MATH 161 (5 cr.)	MATH 162 (5 cr.)	MENG 217 (5 cr.)
	PHYS 151 (4 cr.)	PHYS 152 (4 cr.)	PHYS 153 (4 cr.)
	PHYS 161 (1 cr.)		PHYS 163 (1 cr.)
Second Year	Q5	Q6	Q7
	Diversity (upper-division) (5	MENG 201 or CSCD 255 (5 cr	CHEM 151 (5 cr.)
	MENG 207 (4 cr.)	ENGL 201 (5 cr.)	MATH 241 (5 cr.)
MENG 240 (4 cr.)	MATH 347 (4 cr.)	MENG 241 (4 cr.)	
	PHYS 162 (1 cr.)	MENG 242 (4 cr.)	
Third Year	Q9	Q10	Q11
	BACR (5 cr.)	BACR (5 cr.)	MENG 353 (5 cr.)
	MENG 300 (5 cr.)	MENG 385 (5 cr.)	MENG 382 (5 cr.)
MENG 380 (5 cr.)	MENG 386 (5 cr.)	MNTC 301 (5 cr.)	
Fourth Year	Q13	Q14	Q15
	METC 456 (2 cr.)	Required elective (see catalo	BACR (5 cr.)
	Required track elective (see	Required track elective (see	Required elective (see catalo
	MENG 405 (5 cr.)	MENG 412 (2 cr.)	Required track elective (see
	MENG 452 (2 cr.)	MENG 490A (2 cr.)	MENG 490B (3 cr.)
TECH 393 (4 cr.)	MENG 493 (1 cr.)		



Listed is a Sample Four Year Plan. Individual plans will vary based on placement test scores and class availability.

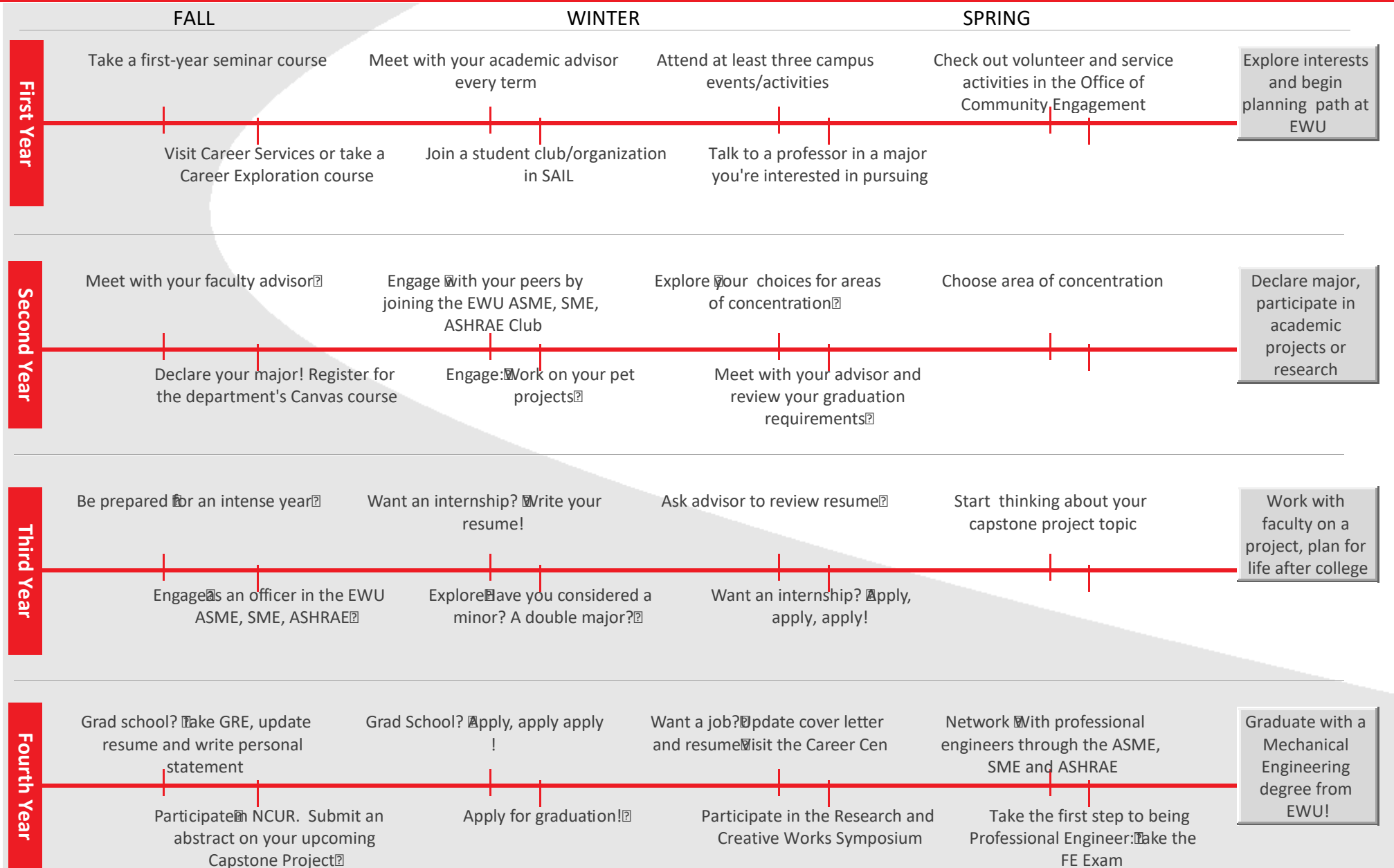


Flight Plan to Success

The following milestones will help you succeed and improve your experience at EWU.

Mechanical Engineering, BS

College of Science, Technology, Engineering, and Mathematics
Engineering & Design



All recommended activities can occur at any time during a student's time at EWU



Student's name: _____ EWU ID: _____

College of Science, Technology, Engineering, and Mathematics
 SOAR Department: Engr & Des | SOAR Major: MECH ENGR
 Major Declaration Form: Mechanical Engineering, BS-MEGR
 Math proficiency needed: MATH 161

Bachelor of Science in Mechanical Engineering
 2018-2019 Catalog Year

First year courses and prerequisites	Notes	Previously offered **
Q1 BACR (5 cr.)		
Q1 MATH 161 CALCULUS I (5 cr.) Prerequisites: MATH 142.	Satisfies: completion of this course with a grade \geq C satisfies the university proficiencies in mathematics. Note: for the university proficiencies, this course may be substituted for MATH 107.	F17, W18, Sp18, Su18
Q1 PHYS 151 GENERAL PHYSICS I (4 cr.) Prerequisites: Concurrent enrollment in MATH 161. Concurrent enrollment in PHYS 161 is recommended.	Note: the completion of PHYS 151, PHYS 161 satisfies the BACR for natural sciences, physics; counts as one course.	F17, W18
Q1 PHYS 161 MECHANICS LABORATORY (1 cr.) Prerequisite: MATH 142.		F17, W18
Q2 ENGL 101 COLL COMP: EXPOSITN & ARGUMNT (5 cr.) Prerequisite: Writing Placement Test or General Advising.	Satisfies: university competencies, writing.	F17, W18, Sp18, Su18
Q2 MATH 162 CALCULUS II (5 cr.) Prerequisite: MATH 161.		F17, W18, Sp18, Su18
Q2 PHYS 152 GENERAL PHYSICS II (4 cr.) Prerequisites: PHYS 151 and concurrent enrollment in MATH 162.	Note: the completion of PHYS 151, PHYS 152, PHYS 161, plus any one of the following: PHYS 162, PHYS 163, PHYS 263 satisfies the BACR for natural sciences, counts as two courses.	W18, Sp18
Q3 MATH 163 CALCULUS III (5 cr.) Prerequisite: MATH 162.		F17, W18, Sp18, Su18
Q3 MENG 217 3D PARAMETRIC COMPUTER DESIGN (5 cr.) Prerequisite: METC 110 or High School AUTOCAD or permission of instructor		F17, W18, Sp18, Su18
Q3 PHYS 153 GENERAL PHYSICS III (4 cr.) Prerequisites: PHYS 152, MATH 162, concurrent enrollment in MATH 163 recommended.		F17, Sp18

I have discussed this academic plan with the student listed above. Advisor name: _____ Advisor signature: _____

* See the catalog for prerequisites and other details.

** Future course offerings may differ from the past. Check the course schedule for future courses.

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Q3

PHYS 163 ELECTRONICS LAB I (1 cr.)

Prerequisite: MATH 142.

Sp18

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Second year courses and prerequisites	Notes	Previously offered **
Q5 Diversity (upper-division) (5 cr.)		
Q5 MENG 207 ELECTRICITY (4 cr.) Prerequisites: MATH 162, PHYS 153 or PHYS 133 .		F17, W18, Sp18
Q5 MENG 240 STATICS (4 cr.) Prerequisites: PHYS 151, MATH 161 or Technical Calculus I or equivalent.		F17, W18, Sp18
Q6 MENG 201 or CSCD 255 (5 cr)* (4 cr.)		
Q6 ENGL 201 COLL COMP: ANALYSIS/RES/DOCMNT (5 cr.) Prerequisite: ENGL 101, Writing Placement Test or general advising.	Satisfies: university proficiencies, writing.	F17, W18, Sp18, Su18
Q6 MATH 347 INTRO DIFFERENTIAL EQUATIONS (4 cr.) Prerequisite: MATH 163.	Note: concurrent enrollment in MATH 307 for students including MATH 347 in a major in mathematics or secondary education in mathematics.	F17, W18, Sp18, Su18
Q6 PHYS 162 HEAT & OPTICS LABORATORY (1 cr.) Prerequisite: MATH 142.		W18, Sp18
Q7 CHEM 151 GENERAL CHEMISTRY (5 cr.) Prerequisites: ≥C in MATH 141 or concurrent enrollment; ≥C in CHEM 100 or ≥C in CHEM 161 or one year of high school chemistry.	Satisfies: a BACR for natural sciences. Note: quantitative and qualitative laboratory work is included.	F17, W18, Sp18
Q7 MATH 241 CALCULUS IV (5 cr.) Prerequisite: MATH 163.	Note: this course should be taken immediately after MATH 163, when possible.	F17, W18, Sp18, Su18
Q7 MENG 241 STRENGTH OF MATERIALS (4 cr.) Prerequisites: MENG 240, MATH 162, PHYS 152 or Technical Calculus II or equivalent.		F17, W18, Sp18
Q7 MENG 242 DYNAMICS (4 cr.) Prerequisite: MENG 240.		F17, W18, Sp18

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Third year courses and prerequisites	Notes	Previously offered **
Q9 BACR (5 cr.)		
Q9 MENG 300 LABORATORY ANALYSIS & REPORTS (5 cr.) Prerequisite: PHYS 133 or PHYS 153, MATH 162; and declared into one of the following: Mechanical Engineering, Mechanical Engineering Technology, Electrical Engineering; or permission of instructor.		F17, W18, Sp18
Q9 MENG 380 THERMODYNAMICS (5 cr.) Prerequisites: PHYS 152; MATH 162; MENG 300, may be taken concurrently; and a declared Mechanical Engineering major.		F17, W18
Q10 BACR (5 cr.)		
Q10 MENG 385 ROBOTICS & AUTOMATION (5 cr.) Prerequisite: grades $\geq C$ in all of the following, MENG 207 or MNTC 208; MENG 201 or CSCD 255; and a declared in Mechanical Engineering or Mechanical Engineering Technology major or permission of instructor.	Note: three hours lecture, four hours laboratory per week.	F17, W18, Sp18
Q10 MENG 386 ENGINEERING NUMERICAL ANALYSIS (5 cr.) Prerequisite: PHYS 153; MATH 163; and either MENG 201 or CSCD 255; and a declared Mechanical Engineering major.		F17, W18, Su18
Q11 MENG 353 INDUSTRIAL MATERIALS (5 cr.) Prerequisite: CHEM 121 or CHEM 151; ENGL 201 (grade $\geq C$); MATH 107 or MATH 142 (grade $\geq C$).		F17, W18, Sp18, Su18
Q11 MENG 382 FLUID MECHANICS (5 cr.) Prerequisite: MENG 242; grades $\geq C$ in all of the following, PHYS 152; MATH 162; MENG 300, may be taken concurrently; and a declared Mechanical Engineering major.	Note: laboratory work is included.	F17, W18, Sp18
Q11 MNTC 301 METALLIC PROCESSES (5 cr.) Prerequisite: junior standing or permission of instructor.		F17, W18, Sp18, Su18
Q13 METC 456 ENGINEERING ETHICS (2 cr.) Prerequisite: junior standing and a declared Mechanical Engineering or Mechanical Engineering Technology major or permission of instructor.		F17, W18, Sp18

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Fourth year courses and prerequisites	Notes	Previously offered **
Q13	Required track elective (see catalog) (5 cr.)	
Q13	MENG 405 DESIGN OF MACHINE ELEMENTS (5 cr.) Prerequisite: MATH 162, MENG 241, MENG 353, and a declared Mechanical Engineering major.	F17, W18, Sp18, Su18
Q13	MENG 452 ENGINEERING ECONOMICS (2 cr.) Prerequisite: junior standing; and a declared Mechanical Engineering or Mechanical Engineering Technology major or permission of instructor.	F17, W18, Sp18
Q13	TECH 393 TECHNOLOGY WORLD CIVILIZATION (4 cr.) Prerequisite: ENGL 101.	Satisfies: a university graduation requirement global studies. F17, W18, Sp18, Su18
Q14	Required elective (see catalog) (5 cr.)	
Q14	Required track elective (see catalog) (5 cr.)	
Q14	MENG 412 FUNDAMENTALS OF ENGINEERING (2 cr.) Prerequisite: senior standing; MENG 241 or METC 341; MENG 242 or METC 342; MENG 380 or METC 388; and declared into one of the following: Mechanical Engineering, Mechanical Engineering Technology; or permission of instructor.	F17, W18, Sp18
Q14	MENG 490A SENIOR CAPSTONE (2 cr.) Prerequisites: MENG 217, MENG 241 with a grade \geq C, MNTEC 301; and a declared Mechanical Engineering major; and senior standing.	Satisfies: a university graduation requirement'senior capstone. W18, Sp18
Q14	MENG 493 SENIOR SEMINAR (1 cr.) Prerequisite: senior standing or permission of instructor; and a declared Mechanical Engineering or Mechanical Engineering Technology major.	Note: graded Pass/Fail. F17, W18
Q15	BACR (5 cr.)	
Q15	Required elective (see catalog) (5 cr.)	
Q15	Required track elective (see catalog) (5 cr.)	

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Q15

MENG 490B SENIOR CAPSTONE DESIGN LAB II (3 cr.)

Prerequisites: MENG 490A.

Satisfies: a university graduation requirement'senior capstone.

F17, Sp18

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