

ADVANCED MANUFACTURING TRACK ENGINEERING BACHELOR OF SCIENCE

Leading to a Bachelor of Science Degree in Advanced Manufacturing Engineering

The Bachelor of Science in Engineering is accredited by the Engineering Accreditation Commission of ABET.

The Bachelor of Science in Engineering (BSEN) degree program is a four-year innovative curriculum providing students the flexibility to customize their engineering degree. This Engineering – Advanced Manufacturing program is a Bachelor of Science in Engineering focusing on the processes and techniques related to manufacturing.

Program Educational Objectives

- To engage in lifelong learning to adapt to the evolving applications of engineering.
- To lead a successful career in engineering or related fields.
- To contribute to the advancement of engineering through voluntarism and professionalism to address industry and societal needs

Student Outcomes

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- An ability to communicate effectively with a range of audiences.
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

First Year

Fall Semester		Credits
ENGR1000	INTRODUCTION TO ENGINEERING	3
FYS1000	FIRST YEAR SEMINAR	1
MATH1776	CALCULUS 1A	2
MATH1777	CALCULUS 1B	2
English Sequence		4
PHYS1250	ENGINEERING PHYSICS I	4
Credits		16

Spring Semester

ENGR1300	FIRST-YEAR ENGINEERING DESIGN	2
ENGR1406	APPLIED ENGINEERING ANALYSIS-BSEN	2
MATH1876	CALCULUS 2A	2
MATH1877	CALCULUS 2B	2
English Sequence*		4
PHYS1750	ENGINEERING PHYSICS II	4
Credits		16

Second Year

Fall Semester

MATH2600	DIFFERENTIAL EQUATIONS & LINEAR SYSTEMS	4
MECH2400	APPLIED MECHANICS	4
CHEM1100	GENERAL CHEMISTRY I	4
ENGR2100	PROGRAMMING FOR ENGINEERS	4
Credits		16

Spring Semester

MECH3600	MATERIALS SCIENCE	4
HSS Elective*		4
MATH2100	PROBABILITY & STATISTICS FOR ENGINEERS	4
MECH2300	ENGINEERING GRAPHICS	3
Credits		15

Summer Semester

COOP3000	OPTIONAL COOP EDUCATION	
Credits		0

Third Year

Fall Semester

MATH/Science Elective		4
MANF2500	FUNDAMENTALS OF MANUFACTURING PROCESSES	4
MANF3200	ADDITIVE MANUFACTURING	4
Free Elective		4
Credits		16

Spring Semester

COOP3500	COOP EDUCATION 1	0
Credits		0

Summer Semester

ENGR3500	ENGINEERING JUNIOR DESIGN	4
MANF3900	AUTOMATION FOR MANUFACTURING	4
MANF3600	METROLOGY & QUALITY CONTROL	4
Free Elective		4
Credits		16

Fourth Year

Fall Semester

COOP4500	COOP EDUCATION 2	0
Credits		0

Spring Semester

ENGR5000	ENGINEERING SENIOR DESIGN I	4
MANF3500	COMPUTER AIDED DESIGN & MANUFACTURING	4
Free Elective		4

HSS Elective	4
Credits	16
Summer Semester	
ENGR5500	ENGINEERING SENIOR DESIGN II 4
MANF4000	OPERATIONS & SUPPLY MANAGEMENT 4
HSS Elective	4
Free Elective	4
Credits	16
Total Credits	127

ENGL/HSS Note

Students are required to complete:

- At least one course in Humanities: CSAS, HSSI, HIST, HUMN, LITR and PHIL
- At least one course in the Social Sciences: CSAS, HSSI, COMM, ECON, ENVM, POLS, PSYC and SOCL
- The remaining course from either the Humanities or Social Sciences category.

Students with a three English course sequence may use the third English course to satisfy a Humanities requirement.

A minimum of 20 credits total, including English, humanities, and social science credit, is required to complete the humanities and social sciences graduation requirement.

Math Placement (<https://catalog.wit.edu/academic-policies-procedures/ug/math-placement/>) may alter the course schedule above.