General Engineering B.S. with Mechanical Engineering Minor

For students entering Fall 2023

First Year - Fall Semester

Course	*Title*	*Credits*
CHEM121	General Chemistry I	4
MATH121	Calculus I	3
ENGR101	Introduction to Engineering I	1
ECON 101	Economics (EPPS)	3
WRIT102	Research Writing	3
CORE 113	Freshman Academic Seminar	3
CORE103	Community Enrichment Series	0
ENGR192	Freshman Engineering Seminar	0
	Total	**17**

First Year - Spring Semester

Course	*Title*	*Credits*
CHEM122	General Chemistry II	4
MATH122	Calculus II	3
PHYS122	General Physics I	4
ENGR102	Introduction to Engineering II	1
LIT104	LIT103, 201, 202, 207, 270	3
RLST105	Religious Studies	3
CORE104	Community Enrichment Series	0
ENGR193	Freshman Engineering Seminar	0
	Total	**18**

Second Year - Fall Semester

Course	*Title*	*Credits*
MATH221	Calculus III	3
PHYS122/L	General Physics I	4
ENGR210/L	Programming for Engineers	2
ENGR201	Engineering Statics	3
ENGR250	Solid Modeling and CAD	3
HIST1/200	History Elective	3
ENGR292	Sophomore Engineering Seminar	0
	Total	**18**

Second Year - Spring Semester

Course	*Title*	*Credits*
MATH306	Differential Equations I	3
ENGR202	Engineering Dynamics	3
ENGR315/L	Mechanics of Materials	3
ENGR325/L	Fundamentals of Electrical Engineering	4
ENGR279	Sophmore Engr. Design for Service	2
PHIL 205	Philosophy and Reasoning	3
ENGR293	Sophomore Engineering Seminar	0
	Total	**18**

Third Year - Fall Semester

Course	*Title*	*Credits*
MATH322	Linear Algebra	3
ENGR301/L	Fluid Mechanics	4
ENGR321	Applied Engr. Thermodynamics	3
ENGR350	Materials Science	3
EPPS	Social science elective (1/2)	3
EXAM301	Writing Compentency Exam	0
ENGR392	Junior Engineering Seminar	0
	Total	**16**

Third Year - Spring Semester

Course	*Title*	*Credits*
ENGR335	Engineering Instrumentation	1
ENGR375	Heat Transfer	3
ENGR379	Junior Engr. Design for Service	3
ENGR435/L	Control Theory	4
ENVE421	or 422 - Energy conversion I or II	3
FNAR	Fine Arts	3
ENGR393	Junior Engineering Seminar	1
	Total	**18**

Senior Year - Fall Semester

Course	*Title*	*Credits*
ENGR427	Power/Thermal Systems Lab	1
ENGR415	Senior Lab	3
ENGR497	Capstone Design Proposal	1
ENGR445	Mechanisms, Linkages, and Design of Machine Ele	3
PHIL/RLST	Philosophy/Religious Studies Elect.	3
LANG	Language requirement	3
DIVER	Diversity requirement	3
ENGR492	Senior Engineering Seminar	0
	Total	**17**

Senior Year - Spring Semester

Course	*Title*	*Credits*
ENGR498	Capstone Design	3
CORE407	Keystone Seminar	3
ENGR410	Applied Finite Element and Volume Modeling	4
ENGR425	Advanced Thermal and Fluid Systems	3
EPPS	Social science elective (2/2)	3
ENGR493	Senior Engineering Seminar	0
	Total	**16**

	Courses for CORE curriculum
17	Courses for the minor

Total credits 138

Mechanical Engineering Minor (17)

The Mechanical Engineering Minor prepares the General Engineer for a career or graduate school in areas more closely related to a traditional Mechanical Engineering major. Here the student will receive preparation and exposure to advanced topics in heat transfer and fluid mechanics, machine component design, and control theory. Students will gain experience in industry-standard finite-element and finite-volume computational methods used to simulate the behavior of structures and materials.

- ENGR 410 - Applied Finite Element and Volume Modeling, 4
- ENGR 425 - Advanced Heat Transfer and Fluid Mechanics, 3
- ENGR 435 - Control Theory, 4
- ENGR 445 - Mechanisms, Linkages and Design of Machine Elements, 3
- ENVE 421 - Energy Conversion Engineering I: Mechanical and Nuclear Methods, 3
  Or ENVE 422 - Energy Conversion Engineering II: Electro-Chemical Methods

Credits in the General engineering central requirements =	82
Credits in the CORE curriculum	41
Credits in the Minor = 15	
Total credits =	138