

B.S. MECHANICAL ENGINEERING BIOMEDICAL ENGINEERING MINOR

Plan of Study – Four-year Plan

* Just one example of how all courses could be taken. (Requires careful planning.) Includes (3) Summer Session ENGR courses.

	Fall	Spring
Year 1	FYEX Foundation for College Success	
	ENGR 100 (FYE) Introduction to Engineering Design 2 cr.	CISC 130 Introduction to Programming & Problem Solving in the Sciences
	ENGR 170 Mechanical Engineering Graphics 2 cr.	PHYS 211 Classical Physics I
	MATH 113 Calculus I	MATH 114 Calculus II
	CORE requirement	CORE requirement
	CORE requirement	
	January-term	Summer
		ENGR 220 Statics
Year 2	Fall	Spring
	CORE requirement	ENGR 221 Mechanics of Materials (Lab)
	MATH 200 Multi-Variable Calculus	MATH 210 Introduction to Differential Equations & Systems
	PHYS 212 Classical Physics II	CHEM 109 General Chemistry for Engineers
	CORE requirement	CORE requirement
		January-term
	CORE requirement	ENGR 322 Dynamics (Lab)
Year 3	Fall	Spring
	BIOL 105 Human Biology or EXSC 214 Physiology	ENGR 320 Machine Design & Synthesis (Lab)
	ENGR 255 Fabrication Skills (Lab) 0 cr.	ENGR 361 Materials (with Lab)
	ENGR 371 Manufacturing Processes & Statistical Control	ENGR 310 Biomedical Engineering 2 cr. odd years, Spring
	ENGR 381 Thermodynamics (Lab)	ENGR 311 Medical Device Mfg. 2 cr. odd years, Spring
	PHIL 254 Biomedical Ethics (counts as a UST core class)	CORE requirement
		January-term
	CORE requirement	ENGR 350 Introduction to Electronics (Lab)
Year 4	Fall	Spring
	ENGR 314 Biomaterials in Engr. (Lab) 4 cr., odd yrs, Fall	ENGR 384 Heat Transfer (Lab)
	ENGR 383 Fluid Mechanics (Lab)	ENGR 410 Control Systems & Automation (Lab)
	ENGR 480 Engineering Design Clinic I	ENGR 481 Engineering Design Clinic II
	CORE requirement	Minor XXX Biomedical Engineering Elective
		January-term
Year 5	Fall	Spring

Note: the Biomedical Engineering Minor elective also counts as the ENGR xxx engineering elective.

Complete Course Listing:**Engineering Courses:**

ENGR 100 – Introduction to Engineering (2 credit)
ENGR 170 – Mechanical Engineering Graphics (2 credits)
ENGR 220 – Statics (4 credits)
ENGR 221 – Mechanics of Materials (4 credits)
ENGR 255 – Fabrication Skills (0 credits)
ENGR 320 – Machine Design and Synthesis (4 credits)
ENGR 322 – Dynamics (4 credits)
ENGR 350 – Introduction to Electronics (4 credits)
ENGR 361 – Engineering Materials (4 credits)
ENGR 371 – Manufacturing Processes and Statistical Control (4 credits)
ENGR 381 – Thermodynamics (4 credits)
ENGR 383 – Fluid Mechanics (4 credits)
ENGR 384 – Heat Transfer (4 credits)
ENGR 410 – Control Systems and Automation (4 credits)
ENGR 480 – Engineering Design Clinic I (4 credits)
ENGR 481 – Engineering Design Clinic II (4 credits)
4 Credits of Engineering Electives (ENGR 314 will satisfy)
60 Engineering Credits

Allied Requirements:

MATH 113 – Calculus I (4 credits)
MATH 114 – Calculus II (4 credits)
MATH 200 – Multi-Variable Calculus (4 credits)
MATH 210 – Introduction to Differential Equations and Systems (4 credits)
PHYS 211 – Classical Physics I (4 credits)
PHYS 212 – Classical Physics II (4 credits)
CHEM 109 – General Chemistry for Engineers (4 credits)
CISC 130 – Introduction to Programming and Problem Solving in the Sciences (4 credits)
32 Allied Requirement Credits

Biomedical Engineering Minor Requirements:

(Note: these 3 ENGR biomed courses are offered once every 2 years, odd numbered 2023, 2025, 2027, etc.)

BIOL 105 – Human Biology (4 credits) OR EXSC 214 – Physiology (4 credits)
ENGR 310 – Biomedical Engineering (2 credits, Spring, odd years)
ENGR 311 – Medical Device Manufacturing (2 credits, Spring, odd years)
ENGR 314 – Biomaterials in Engineering with Lab (4 credits, Fall, odd years. Also satisfies engineering elective)
4 credits of Biomedical Engineering Minor electives

Core Curriculum:

FYEX Foundation for College Success (1 credit)
Literature and Writing (4 credits)
Philosophy and Theology (12 credits)
Social Analysis (4 credits)
Fine Arts (4 credits)
Historical Studies (4 credits)
Integrations in the Humanities (8 credits)
Some of these courses must satisfy the flagged requirements; check your degree evaluation
37 Core Curriculum Credits