WHEATON COLLEGE
For Christ & His Kingdom

Total Major hours at Wheaton: 44
Suggested hours per semester: 16-18

Biomedical Engineering – Cell & Tissue with Illinois Tech

Major Academic Plan (MAP) for Catalog Year 2024-2025

Major hours at Wheaton = 44

The catalog is the final authority on CATC and major requirements; this is intended as a tool for planning purposes. Student course sequencing may vary depending on course offerings and other variables.

Fall Semester 1	**Spring Semester 1**	**Summer 1**
MATH 235: Calculus I[1]* PHYS 231: Introductory Physics I[F, 1]* CHEM 231: General Chemistry I[F] ENGR 101: Intro. to Engineering (1)[F] *CORE 101: First Year Seminar* *CORE 131: Holistic Human Flourishing (1)*	MATH 236: Calculus II* PHYS 232: Introductory Physics II[S]* CHEM 232: General Chemistry II[S] *ENGW 103: Writing*	*Consider study, internship or research options –Wheaton In summer program, WIN (HoneyRock), Wheaton in the Black Hills, non-major internship, summer research or other options that provide work experience, build your resume, or grow you personally.*
Fall Semester 2	**Spring Semester 2**	**Summer 2**
PHYS/ENGR 334: Computer Modeling of Physical Systems (2)[F]* CHEM 341: Organic Chemistry I[F]* *BITH or ARCH 211: Old Testament* *Language Core Competency* *Thematic Core Course[2]*	MATH 333: Differential Equations* ENGR 204: Innovative Design in Engr.[F]*(3) *BITH or ARCH 213: New Testament* *COMM 101: Oral Communication (2)* *Advanced Integrative Seminar[2]**	*Consider study, internship or research options.*
Fall Semester 3	**Spring Semester 3**	**Summer 3**
MATH 237: Calculus III* *BITH 315: Christian Thought** *Thematic Core Course[2]* *Visual & Performing Arts (2)* *Visual & Performing Arts (2)[2]*	IIT BME 315: Instrumentation & Measurement Laboratory (2)[3] IIT BIOL 115: Human Biology (3)[3] IIT BIOL 117: Human Biology Lab (1)[3] IIT ECE 211 Circuit Analysis 1 (3) ENGR 394/494: Ethics Capstone (2)[S]* *Thematic Core Course (4)[2]*	*Consider study, internship or research options.*
All courses below this line are based on completion at Illinois Tech.		
Fall Semester 4	**Spring Semester 4**	**Summer 4**
BME 100: Introduction to the Profession (2) ECE 308: Signals and Systems (3) BME 422: Mathematical Methods for Biomedical Engineers (3) BME 433: Biomedical Engineering Applications of Statistics (3) CHE 202: Material Energy Balances (3)	BIOL 403: Biochemistry BME 301: Bio-fluid Mechanics (3) BME 310: Bio Materials (3) BME 320: Fluids Laboratory (1) BME 335: Thermodynamics of Living Systems (3) IPRO: IPRO Elective 1 (3)	*Consider study, internship or research options.*
Fall Semester 5	**Spring Semester 5**	**Summer 5**
BME 405: Physiology Laboratory (2) BME 418: Reaction Kinetics for BME (3) BME 419: Introduction to Design Concepts in BME (2) BME 453: Quantitative Physiology (3) BME 482: Mass Transport for Biomedical Engineers (3) BME: Technical Elective 1 (3)	BME 420: Design Concepts in BME (3) BIOL 424: Quantitative Aspects of Cell & Tissue Engineering (3) BME: Technical Elective 2 (3) IPRO: IPRO Elective 2 (3) Fundamentals of Engineering Exam (0)	

Last updated: 4/23/2024

Notes or Special Guidance for Majors:

*Course has prerequisite

[F] Fall only course
[S] Spring only course
[#] Offered every other year

[1] Classes that meet CATC Thematic Core tags: MATH 235 (AAQR), PHYS 231 (SP). Engineering majors should use the Engineering checklist for CATC.

[2] Engineering majors should carefully select CATC Thematic Core courses. In addition to the Themes already covered with required courses (AAQR and SP, see footnote 1), Social Inquiry (SI) and the Visual and Performing Arts (VPA or 2 of VPAV/VPAM/VPAT) must be taken. 4 of the 5 remaining themes must also be taken by Engineering majors. See the Engineering checklist for the full CATC requirements. Double tagged courses are strongly encouraged.

[3] These courses are taken in partnership with Illinois Tech while finishing Wheaton requirements.

-All Engineering MAPs are also located on the Engineering Department webpage (link does not work). Please contact the Engineering Program Director, Jeff Yoder with questions. He can be reached at jeff.yoder@wheaton.edu.