Biomedical Engineering
– Neural Imaging with Illinois Tech
Major Academic Plan (MAP) for Catalog Year 2022-2023

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.

Total Major hours at Wheaton: 56
Suggested hours per semester: 16-18

Fall Semester 1	Spring Semester 2	Summer 1
MATH 231: 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*	MATH 232: Calculus II* PHYS 232: Introductory Physics II[S]* CHEM 232: General Chemistry II[S]* *ENGW 103: Writing* *AHS 101: Wellness (2)*	*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 334: Computer Modeling of Physical Systems (2)[F]* CHEM 341: Organic Chemistry I[F4]* *BITH or ARCH 211: Old Testament* *COMM 101: Oral Communication (2)* *Language Core Competency* *Visual & Performing Arts (2)[2]*	CHEM 342: Organic Chemistry II[S4]* MATH 331: Vector Calculus (2)* *BITH or ARCH 213: New Testament* *Thematic Core Course[2]* *Advanced Integrative Seminar[2]**	*Consider study, internship or research options.*
Fall Semester 3	**Spring Semester 3**	**Summer 3**
MATH 333: Differential Equations* *BITH 315: Christian Thought** *Thematic Core Courses (8)[2]* *Visual & Performing Arts (2)[2]*	IIT BIOL 115: Human Biology (3)[3] IIT BIOL 117: Human Biology Lab (1)[3] IIT BME 315: Instrumentation & Measurement Laboratory (2)[3] IIT ECE 211: Circuit Analysis 1 (3)[3] IIT ECE 218: Digital Systems[3] ENGR 394: Ethics Capstone (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: Intro. to the Profession (2)
 BME 309: Biomed Imaging & Sensing (3)
 ECE 308: Signals and Systems (3)
 BME 422: Mathematical Methods for
   Biomedical Engineers (3)
 BME 433: Biomedical Applications of
   Statistics (3)
 ECE 213: Circuit Analysis 2
	BME 310: Biomaterials (3)
	 BME 325: Bioelectronics Laboratory (1)
	 BME 443: Biomedical Instrumentation &
	   Electronics (3)
	 BME: Technical Elective 1 (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 419: Introduction to Design
   Concepts in Biomedical Engineering (2)
 BME 453: Quantitative Physiology (3)
 BME: Technical Elective 2 (3)
 IPRO: IPRO Elective (3)
	BME 420: Design Concepts in Biomedical
	   Engineering (3)
	 BME 438: Neuroimaging (3)
	 BME 445: Quant. Neural Function (3)
	 BME: Technical Elective 3 (3)
	 Fundamentals of Engineering Exam (0)	

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 231 (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.

[4] Options for Organic Chemistry Series: (WC CHEM 341 or IIT MATH 333) and (WC CHEM 342 or IIT Technical Elective - see IIT catalog); If not both WC CHEM 341 and CHEM 342, then Wheaton requires ENGR 204.

-All Engineering MAPs are also located on the Engineering Department webpage. Please contact the Engineering Coordinator, Jeff Yoder with questions. He can be reached at jeff.yoder@wheaton.edu.