Industrial & Systems Engineering with Northern Illinois University (NIU)

Total Major hours at Wheaton: 51
Suggested hours per semester: 16-18

Major Academic Plan (MAP) for Catalog Year 2020-2021

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 231: Calculus I[1]* PHYS 231: Introductory Physics I[F, 1]* *CORE 101: First Year Seminar* *Language Core Competency* *AHS 101: Wellness (2)*	MATH 232: Calculus II* PHYS 232: Introductory Physics II[S]* ENGR 101: Intro. to Engineering (1)[S] *ENGW 103: Writing* *BITH or ARCH 211 Old Testament*	*Consider study, internship or research options –Wheaton In summer program, WIN (HoneyRock), 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**
MATH 331: Vector Calculus (2)* PHYS 334: Computer Modeling of Physical Systems (2)[F]* *COMM 101: Oral Communication (2)* *Thematic Core Courses (8)[2]*	MATH 333: Differential Equations* MATH 363: Probability and Statistics* ENGR 105: Fundamentals of Engineering Graphics (2) *Thematic Core Course[2]* *Visual & Performing Arts(2)*	*Consider study, internship or research options –Wheaton In summer program, WIN (HoneyRock), non-major internship, summer research or other options that provide work experience, build your resume, or grow you personally.*
Fall Semester 3	**Spring Semester 3**	**Summer 3**
PHYS 351: Analog Electronics w/lab (2)* ENGR 204: Innovative Design in Engr.[F]* CHEM 231: General Chemistry I[F] PSYC 101: Introduction to Psychology[1] *BITH or ARCH 213 New Testament*	ECON 211 Microeconomics ENGR 394: Ethics Capstone (2)* *BITH 315: Christian Thought** *Advanced Integrative Seminar[2]** *Visual & Performing Arts (2)[2]*	*Consider study, internship or research options –Wheaton In summer program, WIN (HoneyRock), non-major internship, summer research or other options that provide work experience, build your resume, or grow you personally.*
All courses below this line are based on completion at NIU		
Fall Semester 4	**Spring Semester 4**	**Summer 4**
ISYE 250: Introduction to lean systems engineering (2) *ISYE 350: Principals of manufacturing processes (3)* *ISYE 370: Operations research – deterministic models (3)* *ISYE 410: Human factors engineering (3)* *MEE 209: Engineering Mechanics - Statics and Dynamics (3)*	*ISYE 220: Engineering economy (3)* *ISYE 310: Work measurement and work design (3)* *ISYE 371: Operations research – Probabilistic models (3)* *ISYE 430: Quality control (3)* *ISYE 435: Experimental design for engineers (3)*	Consider study, internship or research options.
Fall Semester 5	**Spring Semester 5**	**Summer 5**
ISYE 440: Production planning and control (3) *ISYE 460: Facility planning and design (3)* *ISYE 480: Simulation modeling and analysis (3)* *ISYE 492: Industrial and systems engineering senior design project (1)* *Technical elective 2 (3)* *Technical elective 3 (3)*	*ISIYE 450: Lean manufacturing systems (3)* *ISIYE 495: Senior design project (3)* *Technical Elective 4 (3)* *Technical Elective 5 (3)* Fundamentals of Engineering Exam (0)	

Notes or Special Guidance for Majors:

Last updated: 5/20/2020

*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), PSYC 101 (SI), ECON 211 (SI). Engineering majors should use the Engineering checklist for CATC. A maximum of 3 tags can count for both CATC and the major.

[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.

-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.