

**BS IN INDUSTRIAL ENG'G./MS IN OPERATIONS RESEARCH  
CURRICULUM OUTLINE - CLASS OF 2020**

*Sample Only – Actual Curriculum Sequence May Deviate from Sample*

	FALL	SPRING	SUMMER 1	SUMMER 2
<b>Freshman Year 1</b>	MATH1341 Calculus 1 for Engrs. 4 CHEM1151 General Chem. for Engrs. 4 CHEM1153 Recitation for CHEM1151 0 GE1000 Intro to Eng'g. 1 GE1110 Eng'g. Design 4 NU Core Arts or Humanities Lvl. 1 4	MATH1342 Calculus 2 for Engrs. 4 PHYS1151 Physics 1 Engrs. 3 PHYS1152 Physics 1 Lab 1 PHYS1153 ILS for PHYS1151 1 GE1111 Eng'g. Prob. Solv.& Comp. 4 ENGW1111 College Writing 4	Vacation	Vacation
<b>Year 2 AA</b>	MATH2321 Calculus 3 for Engrs. 4 IE2310 Intro Ind. Eng'g 4 IE2311 Recitation for IE2310 0 IE3425 Eng'g Database 4 IE3426 Recitation for IE3425 0 ***Elective Science Elective 5	MATH2341 Diff. Eq./ Lin. Alg. 4 *IE3412 Eng'g Prob. Stat. 4 IE4512 Eng'g Economy 4 NU Core Social Science Lvl. 1 4 MEIE2000 Intro to Eng'g, Co-op 1	Vacation	Co-op
<b>Year 2 BA</b>	MATH2321 Calculus 3 for Engrs. 4 IE2310 Intro Ind. Eng'g 4 IE2311 Recitation for IE2310 0 IE3425 Eng'g Database 4 IE3426 Recitation for IE3425 0 ***Elective Science Elective 5 MEIE2000 Intro to Eng'g, Co-op 1	Co-op	Co-op	Vacation
<b>Year 3 AA</b>	Co-op	IE4516 Quality Assurance 4 IE4515 Operations Research 4 IE4510 Simulation Mod. & An. 4 Elective Technical Elective 1 4	Vacation	Co-op
<b>Year 3 BA</b>	MATH2341 Diff. Eq./ Lin. Alg. 4 *IE3412 Eng'g Prob. Stat. 4 IE4512 Eng'g Economy 4 Elective Technical Elective 1 4	Co-op	Co-op	**ENGW3302 Adv. Writing for Prof. 4 Elective 1-General Elective 4
<b>Year 4 AA</b>	Co-op	IE4525 Logistics & Supply Chain 4 IE4520 Stochastic Modeling 4 IE6200 2-Eng'g Prob. & Statistics 4 Graduate Elective 4 Prof. Issues In Eng'g. 1	MEIE4701 Capstone Design 1 4 Elective 1-General Elective 4	**ENGW3302 Adv. Writing for Prof. 4 Graduate Elective 4
<b>Year 4 BA</b>	IE4516 Quality Assurance 4 IE4515 Operations Research 4 IE4510 Simulation Mod. & An. 4 Elective Technical Elective 2 4 MEIE3000 Prof. Issues in Eng'g. 1	IE6200 2-Eng'g Prob. & Statistics 4 Elective Social Science Lvl. 1 4 IE4530 Mfg. Sys. & Techniques 4 IE4531 Lab for IE4530 1	Graduate Elective 4 Graduate Elective 4	Vacation
<b>Year 5 AA</b>	3-Graduate Elective 4 OR 6205 2-Deterministic Oper. Res. 4 Elective Technical Elective 2 4 IE4530 Mfg. Sys. & Techniques 4 IE4531 Lab for IE4530 1 MEIE6850 5-Research Seminar in MIE 0	MEIE4702 Capstone Design 2 5 IE4522 Human Machine Systems 4 IE4523 Lab for IE4522 1 OR7230 4-Probabilistic Oper. Res. 4 OR7245 4-Networks & Adv. Optimiz. 4		
<b>Year 5 BA</b>	IE4525 Logistics & Supply Chain 4 IE4520 Stochastic Modeling 4 OR 6205 2-Deterministic Oper. Res. 4 3-Graduate Elective 4 MEIE6850 5-Research Seminar in MIE 0 MEIE4701 Capstone Design 1 1	MEIE4702 Capstone Design 2 5 IE4522 Human Machine Systems 4 IE4523 Lab for IE4522 1 OR7230 4-Probabilistic Oper. Res. 4 OR7245 4-Networks & Adv. Optimiz. 4		

7/3/2014 10/27/2015  
7/14/2014 6/1/2016  
2/8/2017  
4/10/2017

\*\* ENGW3315 is an acceptable substitution for engineering majors.

- 1.General Elective: 1 required-any 4 SH course that is not repetitive or remedial.
- 2.Students who received a grade of B+ or higher in IE3412 and IE4515 may waive IE6200 and OR6205, respectively, by taking other graduate courses.
- 3.Students may replace 8 SH of graduate coursework in the senior year with OR7990 Thesis, or 4 SH with OR7945 Project.
- 4.Students may take MATH7341 Probability 2 instead of OR7230 and MATH7234 Optimization and Complexity instead of OR7245.
- 5.Required for Students who elect to do Thesis or Project

NU Core Elective Requirements: 2 required -(one Arts or Humanities Lvl. 1 Elective AND one Social Science Lvl. 1 Elective)

Engineering Technical Electives: 2 required - any course from the following disciplines that is not a required course in the IE curriculum: IE, ME, MEIE, EMGT, OR, EECE, CIVE, CHME or CSYE

Electives may be interchanged. Please consult with your advisor : Joy Erb - 220 Snell, 617-373-2154, j.erb@neu.edu

**Notes:**

- Students will be required to meet with an undergraduate advisor to petition to enter the program.
- Students are encouraged to meet with their financial aid counselor to review any financial questions.
- 4 semesters of coursework at Northeastern University must be completed with a minimum GPA of 3.2 to join the BS/MS program.
- The registrar's website provides a listing of degree requirements and the DARS system provides a degree audit utility for students.

**\*\*\*Science Elective**

Complete one of the following:

PHYS 1155 Physics for Engineering 1 and PHYS 1156 Lab for PHYS 1155 and PHYS 1157 Interactive Learning Seminar for PHYS 1155
CHEM 1214 General Chemistry 2 and CHEM 1215 Lab for CHEM 1214 and CHEM 1216 Recitation for CHEM 1214
CHEM 2311 Organic Chemistry 1 and CHEM 2312 Lab for CHEM 2311 and CHEM 2319 Recitation for CHEM 2311
BIOL 1115 General Biology 1 for Engineers and BIOL 1116 Lab for BIOL 1115
BIOL 1117 Integrated Anatomy and Physiology 1 and BIOL 1118 Lab for BIOL 1117