

# B.S. Industrial & Systems Engineering-Management Sys & OR 2020-2021 Academic Year

## Student Information

Name: \_\_\_\_\_ OSU ID: \_\_\_\_\_ OSU Admit Term: \_\_\_\_\_

Phone: \_\_\_\_\_ Email (name.number@osu.edu): \_\_\_\_\_

## Suggested Curriculum

This should be used as a **guide** only. Semester offerings are subject to change.

Year	Autumn	Spring
1	___ PHYSICS 1250 ( <i>Intro Physics 1</i> ) ..... 5 hr ___ MATH 1151 ( <i>Calculus 1</i> ) ..... 5 hr ___ ENGR 1181 ( <i>Fundamentals of ENGR 1</i> ) ..... 2 hr ___ ENGR 1100 ( <i>Engineering Survey</i> ) ..... 1 hr ___ General Education ( <i>1<sup>st</sup> Social Science</i> ) ..... 3 hr	___ PHYSICS 1251 ( <i>Intro Physics 2</i> ) ..... 5 hr ___ MATH 1172 ( <i>Engineering Math A</i> ) ..... 5 hr ___ ENGR 1182 ( <i>Fundamentals of ENGR 2</i> ) ..... 2 hr ___ CSE 1223 ( <i>Programming Java</i> ) ..... 3 hr ___ General Education ( <i>Writing I, English 1110.xx</i> )... 3 hr
2	___ MATH 2568 ( <i>Linear Algebra</i> ) ..... 3 hr ___ STAT 3470 ( <i>Probability &amp; Statistics</i> ) ..... 3 hr ___ MECHENG 2040 ( <i>Statics &amp; Mechanics</i> ) ..... 4 hr ___ Additional Science <sup>1</sup> ..... 4-5 hr ___ General Education ( <i>Writing II</i> ) ..... 3 hr	___ MATH 2415 ( <i>Ordinary &amp; Partial Diff Eq</i> ) ..... 3 hr ___ ISE 2400 ( <i>Design of Work</i> ) ..... 2 hr ___ MECHENG 2850 ( <i>Numerical Methods</i> ) ..... 3 hr ___ ISE 2040 ( <i>Engineering Economics</i> ) ..... 2 hr ___ CSE 2112 ( <i>Modeling w/ Sprdst &amp; DB for Engr.</i> ) ..... 3 hr
3	___ ISE 2500 ( <i>Intro to Manf. Engineering</i> ) ..... 3 hr ___ ISE 3200 ( <i>Linear &amp; Integer Programming</i> ) ..... 3 hr ___ ISE 3600 ( <i>Workplace Ergonomics</i> ) ..... 3 hr ___ ISE 3700 ( <i>Cognitive Systems Eng</i> ) ..... 3 hr ___ General Education ( <i>History</i> ) ..... 3 hr	___ ISE 3210 ( <i>Non-linear &amp; Dynamic Optimization</i> )... 3 hr ___ ISE 3800 ( <i>Project Management</i> ) ..... 3 hr ___ ISE 4120 ( <i>Quality &amp; Reliability Engineering</i> ) ..... 3 hr ___ ISE 3400 ( <i>Prod Plan &amp; Fac Design</i> ) ..... 4 hr ___ General Education ( <i>Literature</i> ) ..... 3 hr
4	___ ISE 4100 ( <i>Stoch Modeling &amp; Simulation</i> ) ..... 4 hr ___ Technical Elective <sup>2</sup> ..... 3 hr ___ Technical Elective <sup>2</sup> ..... 3 hr ___ Technical Elective <sup>3</sup> ..... 3 hr ___ General Education ( <i>Visual &amp; Performing Arts</i> )... 3 hr	___ ISE 4900 ( <i>Capstone Design</i> ) ..... 4 hr ___ Technical Elective <sup>2</sup> ..... 3 hr ___ Technical Elective <sup>3</sup> ..... 3 hr ___ General Education ( <i>2<sup>nd</sup> Social Science</i> ) ..... 3 hr ___ General Education ( <i>Ethics + Cultures &amp; Ideas</i> )... 3 hr

**Total Hours to complete the degree program = 127**

## Program Options

<sup>1</sup> Choose one of the following: ANATOMY 2220, 2300, 3300, ANTHROP 2200, BIOLOGY 1113, 1114, 2100, CHEM 1210, 1250, EARTHSC 1911, 2155, 2203, 2204, 3203, ENR 2155, 3280, EEOB 2510, 2520, GEOG 2200, 3300, PHYSICS 3700

All students must satisfy a 32 credit hour minimum for math and basic sciences. Students with high math or science placements and transfer students without credit for lower courses should consult with an ISE academic advisor to ensure this minimum is met. Such students may be required to take additional approved coursework to meet graduation requirements.

## Acceptance Criteria

Acceptance into this program is based on a holistic review of the student's record including an essay. Admission to major is considered only after a student has taken at least 12 credit hours of letter grade in their undergraduate career at OSU and have completed the following courses: MATH 1151, 1172; ENGR 1181, 1182; PHYSICS 1250, (or their equivalents).

Applications are accepted Autumn and Spring semester ONLY. Students must complete the online ISE Major Application the semester in which the student is completing their pre-major requirements (i.e. the semester before the students wants to enter the major). For more information please visit our website (<https://ise.osu.edu/degrees/admission-ise-major>) or see an Academic Advisor in the Department of Industrial and Systems Engineering.

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## Technical and Other Electives

<sup>2</sup> The ISE program includes 15 semester hours of technical electives from a specific track.

<sup>2</sup> Choose three of the following (9 credit hours): ISE 5043, ISE 5110, ISE 5220, ISE 5350, ISE 5410, ISE 5800, ISE 5810, ISE 5820, ISE 5830, ISE 5870

<sup>3</sup> Choose two of the following (6 credit hours): Any ISE Technical Elective from this track (listed above), Any ISE elective from another track, Any outside approved elective (see <https://ise.osu.edu/degrees/curriculum-ise-elective-tracks>) for list.

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## General Education Requirement

### Writing and Communication

English 1110.xx 3 hr

Second Writing Course: recommend ENR 2367, COMM 2367, NURSING 2367 or COMPSTD 2367.04 3 hr

### Social Science

*Only one course per Social Science group may count.*

\_\_\_\_\_ 3 hr

\_\_\_\_\_ 3 hr

### Literature

\_\_\_\_\_ 3 hr

### Visual and Performing Arts

\_\_\_\_\_ 3 hr

### Historical Study

\_\_\_\_\_ 3 hr

### Second Historical Study or Cultures and Ideas

\_\_\_\_\_ 3 hr

### Social Diversity in the U.S. or Global Diversity

*Some courses may overlap with another GE category, See course list.*

\_\_\_\_\_ 0 / 3 hr

### Ethics

*Some courses may overlap with another GE category, See course list.*

\_\_\_\_\_ 0 / 3 hr

### Foreign Language

#### *Pre-approved substitutions*

- A. Credit (including EM) for a foreign language sequence through 1103, or credit for a foreign language course with a prerequisite of 1103, can be substituted for one Gen Ed course requirement as a Cultures & Ideas.
- B. Completion of a foreign language minor can be substituted for two Gen Ed courses: one course as a Social Science, (Individuals & Groups or Organizations & Politics subgroups only) and one course as either a Literature or a Cultures & Ideas.

Parameters: Students must choose either Substitution A OR Substitution B. Both substitutions cannot be applied simultaneously.

### University Capstone (Cross-Disciplinary Seminar)

#### *Pre-approved substitutions*

Completion of a Social Science 3597 or 4597 can be substituted for a Social Science general education course in any group. Completion of an Arts & Humanities 3597 or 4597 can be substituted for a Visual/Performing Arts general education course.

See the list of approved general education courses for additional details: [www.advising.engineering.osu.edu](http://www.advising.engineering.osu.edu).