



IE FOCUS AREA: Management

Department of Industrial and Systems Engineering

General Education (19 sh) sh

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| ALL | RHET:1030 Rhetoric | 4 |
| F/S | Diversity & Inclusion | 3 |
| ALL | Be Creative | 3 |
| ALL | Required Gen Ed Course: PSY:1001 Elementary Psychology | 3 |
| ALL | Approved Gen Ed Course | 3 |
| ALL | Approved Gen Ed Course | 3 |

Math & Basic Science Core (24 sh) sh

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| F/S | MATH:1550 Math I: Single Variable Calculus (P: ALEKS score ≥ 75 or MPT Level 3 score ≥ 9) | 4 |
| ALL | MATH:1560 Math II: Multivariable Calculus (P: MATH:1550) | 4 |
| ALL | MATH:2550 Math III: Matrix Algebra (P: MATH:1550) | 2 |
| ALL | MATH:2560 Math IV: Differential Equations (P: MATH:1560, MATH:2550) | 3 |
| ALL* | STAT:2020 Probability & Statistics For Engr & Phys Sci (P: MATH:1560) | 3 |
| ALL | CHEM:1110 Principles of Chemistry I (P: ALEKS score ≥ 55 or MPT Level 3 score ≥ 9) | 4 |
| ALL | PHYS:1611 Introductory Physics I / Lab (C: MATH:1550) | 4 |

Engineering Core (7 sh) sh

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| F | ENGR:1000 Engineering Success for First-Year Students (First semester standing) | 1 |
| F | ENGR:1100 Intro to Engineering Problem Solving | 3 |
| F/S | ENGR:1300 Intro to Engineering Computing (C: MATH:1550) | 3 |

IE Requirements (40 sh) sh

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| F/S | PHYS:1612 Introductory Physics II / Lab (P: PHYS:1611; C: MATH:1560) | 4 |
| S | ISE:2500 Engineering Economy (C: STAT:2020) | 3 |
| F | ISE:2360 Design for Manufacturing | 3 |
| S | ISE:3300 Manufacturing Systems (P: ENGR:2760, ISE:3700) | 3 |
| F | ISE:3350 Process Engineering (P: ISE:3700) | 3 |
| F | ISE:3400 Human Factors (P: PSY:1001) | 3 |
| S | ISE:3450 Ergonomics | 3 |
| S | ISE:3500 Information Systems Design (P: ENGR:1300) | 3 |
| F | ISE:3600 Quality Control (P: STAT:2020, or BAIS:9100 or (STAT:3100 & STAT:3101 & STAT:3200)) | 3 |
| F | ISE:3610 Stochastic Modeling (P: STAT:2020; C: ISE:3700) | 3 |
| S | ISE:3660 Data Analytics with R (P: STAT:2020) | 3 |
| F/S | ISE:3700 Operations Research (P: MATH:2550; C: STAT:2020) | 3 |
| S | ISE:3750 Digital Systems Simulation (P: ISE:3700 & ISE:3610) | 3 |

IE Capstone Design Courses (4 sh) sh

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| F/S | ISE:4600 Industrial Engineering Design Project (IEDP) (C: ALL IE Required Courses - ISE:2500, ISE:3300, ISE:3350, ISE:3400, ISE:3450, ISE:3500, ISE:3600, ISE:3660, & ISE:3750) | 4 |
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IE Departmental Seminars (0 sh) sh

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| F | ISE:2000 Sophomore Seminar: Industrial Engineering (Status: Sophomore) | 0 |
| S | ISE:3000 Professional Seminar: Industrial Engineering (Status: Junior; x2) | 0 |

Engineering Fundamentals Electives (11 sh) sh

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| Select at least 11 sh from the list of courses below | | |
| ALL | ENGR:2110 Statics (P: MATH:1550; C: MATH:1560, PHYS:1611) | 2 |
| ALL | ENGR:2120 Electrical Circuits (P: MATH:2560) | 3 |
| ALL | ENGR:2130 Thermodynamics (P: CHEM:1110, PHYS:1611; C: MATH:1560) | 3 |
| ALL* | ENGR:2710 Dynamics (P: ENGR:2110 & MATH:1550) | 3 |
| ALL* | ENGR:2720 Materials Science (P: CHEM:1110; C: MATH:1550) | 3 |
| F/S | ENGR:2730 Computers in Engineering (P: ENGR:1300) | 3 |
| ALL* | ENGR:2750 Mechanics of Deformable Bodies (P: ENGR:2110; C: MATH:2560) | 3 |
| TBD | BME:2995 Intro to AI & Machine Learning in Engr (P: ENGR:1300; C: MATH:2550) | 3 |

Required: Management (15 sh) sh

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| ALL | ACCT:2100 Intro to Financial Accounting (P: sophomore standing) | 3 |
| ALL | ACCT:2200 Managerial Accounting (P: ECON:1100 & ACCT:2100 & (MATH:1850 or MATH:1550 or MATH:1460 or MATH:1860 or MATH:1350 or MATH:1380)) | 3 |
| ALL | MGMT:2000 Introduction to Law (P: sophomore standing) | 3 |
| ALL | MGMT:2100 Introduction to Management (P: sophomore standing) | 3 |
| ALL | MKTG:3000 Intro to Marketing Strategy (P: ECON:1100 & junior standing) | 3 |

Electives: Management (9 sh) sh

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| Elective: Focus Area - Math / Science | | |
| select one course from this list | | |
| S | PHYS:2704 Physics IV (P: (PHYS:1612 or PHYS:2703) & (MATH:1860 or MATH:1550)) | 4 |
| ALL | CHEM:1120 Principles of Chemistry II (P: CHEM:1110 w/min C-) | 4 |
| S | STAT:3210 Experimental Design & Analysis (P: STAT:3200) | 3 |
| F/S | MATH:3800 Elementary Numerical Analysis (P: (MATH:2250 or MATH:2700) & (MATH:1560 or MATH:1860)) | 3 |
| F/S | MATH:3550 Engineering Math V (P: MATH:1560 & (MATH:2550 or MATH:2700)) | 3 |
| ALL | BIOL:1411 Foundations of Biology (P: CHEM:1110) | 4 |

Elective: Focus Area - Above 3000-level engineering course

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| select one course | | |
| ALL | Any 3000 or above course offered by an engineering department | 3 |

Elective: Focus Area - Systems

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| select one course from this list | | |
| F/S | ENGR:2730 Computers in Engineering (P: ENGR:1300) | 3 |
| TBD | ISE:4172 Big Data Analytics (P: STAT:2020 or BAIS:9100) | 3 |
| F | ISE:4175 Safety Engineering | 3 |
| S | ISE:4900 Introduction to Six Sigma (P: ISE:3600) | 3 |
| ALL | Any 5000 or above Industrial Engineering (ISE) course | 3 |