

INDUSTRIAL ENGINEERING: HUMAN FACTORS AND HEALTH SYSTEMS ENGINEERING, M.S.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	Yes

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirements Detail

Minimum Credit Requirement 30 credits

Minimum Residence Credit Requirement 16 credits

Minimum Graduate Coursework Requirement Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<https://registrar.wisc.edu/course-guide>)).

Overall 3.00 GPA required.

Graduate GPA Requirement

Other Grade Requirements Grades of C and D received by a candidate in any graduate course will not be counted as credit toward the degree. These grades will be counted in the graduate GPA.

Assessments and Examinations None.

Language Requirements No language requirements.

REQUIRED COURSES

As stated above, of the required credits, all must be at the 300 level or higher, at most 6 credits may be at the 300 level, at least 15 must be at the graduate level, at least 18 credits must be in the Industrial and Systems Engineering Department, and at least 16 credits must be taken as a graduate student in residence at UW-Madison.

Below is a typical curriculum for those pursuing an M.S. in Industrial Engineering with the course options in Human Factors and Health Systems Engineering. Please note the Human Factors and Health Systems Engineering program is a customizable program and students should work out other course options with their faculty advisor.

FALL COURSE PLANNING GRID ([HTTPS://WWW.ENGR.WISC.EDU/APP/UPLOADS/2016/02/MSIE-HFSE-PLANNING-GRID-FALL.PDF](https://www.engr.wisc.edu/app/uploads/2016/02/MSIE-HFSE-PLANNING-GRID-FALL.PDF))

SPRING COURSE PLANNING GRID

Fall Potential Courses:

Code	Title	Credits
ISY E 313	Engineering Economic Analysis	3
ISY E/PSYCH 349	Introduction to Human Factors	3
ISY E 417	Health Systems Engineering	3
ISY E/M E 512	Inspection, Quality Control and Reliability	3
ISY E 515	Engineering Management of Continuous Process Improvement	3
ISY E/PSYCH 549	Human Factors Engineering	3
ISY E 601	Special Topics in Industrial Engineering	1-3
ISY E 602	Special Topics in Human Factors	3
ISY E 606	Special Topics in Healthcare Systems Engineering	1-3
ISY E/PHARMACY 608	Safety and Quality in the Medication Use System	3
ISY E/PSYCH 653	Organization and Job Design	3
ISY E 699	Advanced Independent Study	1-5

Spring Potential Courses:

Code	Title	Credits
ISY E 313	Engineering Economic Analysis	3
ISY E/PSYCH 349	Introduction to Human Factors	3
ISY E 417	Health Systems Engineering	3
ISY E/M E 512	Inspection, Quality Control and Reliability	3

ISY E 555	Human Performance and Accident Causation	3	E M A 601	Special Topics in Engineering Mechanics	1-3
ISY E/ MED PHYS 559	Patient Safety and Error Reduction in Healthcare	2	M H R 412	Management Consulting	3
ISY E/B M E 564	Occupational Ergonomics and Biomechanics	3			
ISY E 575	Introduction to Quality Engineering	3			
ISY E 601	Special Topics in Industrial Engineering	1-3			
ISY E 602	Special Topics in Human Factors	3			
ISY E 606	Special Topics in Healthcare Systems Engineering	1-3			
ISY E/ PHARMACY 608	Safety and Quality in the Medication Use System	3			
ISY E/B M I 617	Health Information Systems	3			
ISY E/B M E 662	Design and Human Disability and Aging	3			

Summer Potential Courses:

Code	Title	Credits
ISY E 313	Engineering Economic Analysis	3
ISY E/PSYCH 349	Introduction to Human Factors	3
ISY E 516	Introduction to Decision Analysis	3
ISY E 575	Introduction to Quality Engineering	3
ISY E 601	Special Topics in Industrial Engineering	1-3
ISY E 602	Special Topics in Human Factors	3
ISY E 606	Special Topics in Healthcare Systems Engineering	1-3
ISY E 699	Advanced Independent Study	1-5
ISY E 702	Graduate Cooperative Education Program	1-2

Other Department Course Suggestions:

Code	Title	Credits
NURSING 761	Health Program Planning, Evaluation, and Quality Improvement	3
POP HLTH 785		3
POP HLTH/SOC 797	Introduction to Epidemiology	3
POP HLTH/ ISY E 875	Cost Effectiveness Analysis in Health and Healthcare	3
POP HLTH 876	Measuring Health Outcomes	3
OTM 451	Service Operations Management	3
OTM 753	Healthcare Operations Management	3
OTM 770	Sustainable Approaches to System Improvement	4
B M I 773	Clinical Research Informatics	3
B M I/COMP SCI 576	Introduction to Bioinformatics	3
B M I/COMP SCI 776	Advanced Bioinformatics	3
COMP SCI/ ED PSYCH/ PSYCH 770	Human-Computer Interaction	3