

MSIHE Advising Worksheet (rev. 8/5/2022)

Focus Areas

Data Science: Provides the student with a background in both theory and application of data science and to engage in the design of artificial intelligence systems and visualization of data, providing a critical understanding of the role that humans play through the data processing pipeline. Areas of interest include artificial intelligence, machine learning applications, healthcare, and retail analytics.

Advising faculty: Dr. Subhashini Ganapathy, Dr. Robert A. Myers, Dr. Vic Middleton

Human Factors and Ergonomics: Provides the student with a background in product usability, computer interface design, simulations and virtual environments, systems modeling, information retrieval, and human performance. Emphasis is placed on human-computer interaction, cognitive modeling and experimental methods as they relate to the design, development and analysis of systems such as petrochemical industries, military domain, and healthcare.

Advising faculty: Dr. Subhashini Ganapathy

Logistics and Supply Chain: Provides the student with a background in both theory and application of systems-based modeling, manufacturing design, and continuous improvement. Emphasis is placed on inventory theory, forecasting, warehousing, and network design.

Advising faculty: Dr. Subhashini Ganapathy, Dr. Robert A. Myers

Focus Area Required Courses

Sem Cr Hr

Data Science			
IHE 6150	Probability & Statistics (m)	F	3
IHE 6300 OR	Fundamentals of HFE OR	F	3
IHE 6320 OR	Human-Syst Interaction & Design Thinking OR	S	
IHE 7300	Research Methods in HFE (m)	S	
IHE 6711	Optimization Methods (m)	F	3
IHE 6712	Simulation & Stochastic Models (m)	S	4
IHE 7510	Data Mining (m)	F	3
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Human Factors and Ergonomics			
IHE 6150	Probability & Statistics (m)	F	3
IHE 6300	Fundamentals of HFE	F	3
IHE 6320	Human System Interaction & Design Thinking	S	3
IHE 7010	Understanding & Aiding Human Dec Making	S	3
IHE 7300	Research Methods in HFE (m)	S	3
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Logistics & Supply Chain			
IHE 6150	Probability & Statistics (m)	F	3
IHE 6300 OR	Fundamentals of HFE OR	F	3
IHE 6320 OR	Human-Syst Interaction & Design Thinking OR	S	
IHE 7300	Research Methods in HFE (m)	S	
IHE 6711	Optimization Methods (m)	F	3
IHE 6712	Simulation & Stochastic Models (m)	S	4
IHE 6810 OR	Production & Service Systems OR	F	3
IHE 6820	Supply Chain Analysis & Design	S	
IHE 7820	Egr Supply Chain Systems (not taught F22)	F	
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Electives

Sem Cr Hr

Math or Stats Intensive Courses (6 cr required)			
IHE 6150	Probability & Statistics	F	3
IHE 6711	Optimization Methods	F	3
IHE 6712	Simulation & Stochastic Models	S	4
IHE 7050	Design & Analysis of Engineering Experiments	F	3
IHE 7300	Research Methods in HFE	S	3
IHE 7510	Data Mining	F	3
IHE 7712	Adv Model-Based Approaches for Systems Analysis	S	3
MTH / STT / CS	As approved by advisor	F/S	3

Other Electives			
IHE 6310	Ergonomics	F	3
IHE 6350	Computational Neuroergonomics	TBA	3
IHE 6400	Engineering Economy	F	3
IHE 6510	Computer Applications in IHE	S	3
IHE 6830	Engineering Project Management and Applications	R	3
IHE 6850	Six Sigma for Engineers	F	3
IHE 7010	Understanding & Aiding Human Dec Making	S	3
IHE 7020	Systems Engineering & Analysis	S	3
IHE 7340	User Experience Design for Mobile Computing	F	3
IHE 7360	Cognitive Systems Engineering	TBA	3
IHE 7370	Medical Devices (not taught in F22)	F	3
IHE 7810	Engineering Health Systems	TBA	3
IHE 7820	Egr Supply Chain Systems (not taught in F22)	F	3
IHE 7850	Lean Process Improvement for Engineers	S	3
IHE 7980	Special Topics	TBA	3
IHE 6990/7990	Independent Study in IHE	F/S/R	1-4
Or as approved by the advisor			

(m) = Math or Stats intensive Course

MSIHE program of study requirements (all focus areas):

30 credit hours total:

- **18 credits** IHE specific coursework (6000- or 7000-level) ● **12 credits** 7000-level coursework, 9 cr of which must be BIE Dept courses
- **6 credits** math/stat-intensive coursework ● **4 credits** max. independent study; **8 credits** max. thesis

The MSIHE program can be completed entirely online (for eligible students).