The Faculty and Their Research

**Alagoz**, Oguzhan, Associate Professor - operations research, stochastic optimization, medical decision making, Markov decision processes, stochastic programming, simulation, scheduling, health-care applications

**Bier**, Vicki M., Professor - security in the supply chains for food and agricultural products, critical infrastructure protection, technological hazards, risk and decision analysis, operations research

**Brennan**, Patricia Flatley, Professor - health informatics, community health, information systems, computer-mediated clinical practice, health services research

**Carayon**, Pascale, Professor - human factors and ergonomics, quality and productivity improvement, technological and organizational change

**Krishnamurthy**, Anath, Associate Professor - Production inventory systems, assembly operations, product variety and customization, material handling and warehouse systems, lead time reduction, quick response manufacturing.

**Lee**, John D., Professor - human factors and ergonomics, driver distraction, driver response to in-vehicle technology, trust in automation

**Li**, Jingshan, Associate Professor - Modeling, analysis, design, control and continuous improvement of production, service and health care systems.

**Liu**, Kaibo, Assistant Professor - Data Analytics for quality improvement, Data Fusion for Process Modeling, Monitoring, Diagnosis and Prognostics, Statistical Learning and Data Mining, Statistical Process Control

**Linderoth**, Jeffrey T., Professor - Numerical optimization, integer programming and stochastic programming, high performance and grid computing, applications in logistics and energy systems.

**Luedtke**, James R., Assistant Professor - Integer programming, linear and nonlinear, stochastic optimization with risk constraints, applications in logistics, revenue management, production scheduling and energy

**McLay**, Laura A. Associate Professor - discrete optimization, Markov decision processes, applications in health care, homeland security, disasters, and public services.

**Radwin**, Robert G., Professor - analytical methods for assessing exposure to physical stress in the workplace, ergonomics of manually operated equipment, work-related musculoskeletal disorders, rehabilitation engineering

**Shi**, Leyuan, Professor - Simulation modeling, large-scale optimization, supply chain optimization, production planning and scheduling

**Vanderheiden**, Gregg C., Professor - ergonomics, universal/accessible design of mass market products, mobile computing, next generation information and transaction systems, human augmentation, modality translation

**Veeramani**, Dharmaraj (Raj), Professor - Supply chain management and optimization, RFID/AIDC (automatic identification and data capture) systems and applications, E-business technologies and strategies, Quick response quoting and manufacturing

**Wiegmann**, Douglas A., Associate Professor - cognitive systems engineering, system safety, accident investigation, human error analysis

**Zhou**, Shiyu, Professor - modeling and analysis of the variation propagation and other in-process sending data in complex manufacturing processes, in-process quality and productivity improvement, fast calibration and active compensation for manufacturing systems

---

**Master of Science in Industrial and Systems Engineering (MSIE)**

**PROFESSIONAL INDUSTRIAL AND SYSTEMS ENGINEERING OPTION**

**Department of Industrial and Systems Engineering**

**College of Engineering**

**University of Wisconsin-Madison**

Department of Industrial and Systems Engineering
1513 University Avenue, Room 3182
Madison, WI 53706-1572
(608) 263-4025
The Professional Industrial Engineering Option enables industrial engineering undergraduate students from UW-Madison to obtain a Master of Science degree in just one academic year beyond the bachelor degree. Combined with the four-year industrial engineering undergraduate program, a student can complete both a Bachelor and a Master degree in a total of five years.

This option provides industrial engineering students with the opportunity to specialize in a given area of industrial engineering beyond the bachelor degree. Since the curriculum for the Professional ISYE Option is designed on an individual basis, it is sufficiently flexible to meet a variety of needs.

The option is offered to the UW-Madison Department of Industrial & Systems Engineering Bachelor of Science graduates only. Students currently in the UW-Madison Industrial & Systems Engineering undergraduate program who are interested in this option are encouraged to meet with their advisor and the Student Services Staff to discuss their plans to apply to graduate school and to determine if this option is suitable for them.

The Professional MSIE Option is intended primarily for students who do NOT plan to pursue a PhD degree. Those interested in obtaining a PhD should consult their academic advisor.

Eligibility Requirements:
To be eligible for admission, students must have:

- A Bachelor of Science degree in Industrial & Systems Engineering (BSIE) from UW-Madison
- An overall GPA of 3.0, or a GPA of 3.0 for last 60 credits of the BSIE program

Selecting a Program of Study and Advisor:
While students have freedom in selecting courses, these courses must form a coherent program of study leading to comprehensive expertise in the student’s chosen area. Applicants design a program under the guidance of a faculty advisor, selecting a set of courses that achieve a particular area of specialization. The student’s advisor and the Academic Affairs Committee Chair must approve each student’s program. Any changes to the program also need approval of the student’s advisor.

The application & program must include:

- Total 30 credits are required. At least 15 credits need to be from the graduate level courses determined by the offering department.
- At least 15 credits of ISYE courses, 500 level or above, in the area of specialization.* These credits must be earned in the graduate program.
- Included in the 15 credits within ISYE, at least one course containing a significant project experience related to the student’s area of specialization. Any course(s) taken as an undergraduate cannot be taken again. Examples include: ISYE 476, 515, 565, 641, 653, 671, or 3cr of 699 related to the student’s area of specialization.

- No more than six credits of independent study.
- At least nine credits of electives that relate to the student’s area of specialization (examples include: statistics, business, computer science, other engineering courses).
- An attached paragraph explaining how the student’s chosen courses relate to their area of specialization and form an in-depth understanding of that topic.

Option Guidelines:
Up to six credits of course work of 300 level or above taken prior to enrolling in the program may be included. These credits will be counted toward the total 30 credits requirement, but cannot be counted as graduate level credits except for courses of 700 level or above.

An overall GPA of 3.0 must be maintained while in graduate school. In addition to the requirements stated above, all Graduate School Academic Policies apply.

* IE courses between 300-500 level may be used to fulfill this requirement only if approved by the Advisor and the Academic Affairs Committee Chair. Any course below the 300 level will not count towards a graduate degree.

Application:
Students interested in applying must first select a faculty advisor at the time of application. Then, students need to make an appointment to discuss and complete the paper application with their advisor. (Please see the list of IE faculty and their respective areas of interest.)

Students must also officially apply online to the Graduate School and pay the application fee (hwww.gradsch.wisc.edu/eapp/eapp.pl). The GRE Test, letters of recommendation and statement of purpose are NOT required for this option.

Updated 1.23.2014