



WICHITA STATE  
UNIVERSITY  
GRADUATE SCHOOL

## **Graduate Certificates in Industrial and Manufacturing Engineering**

### **Advanced Manufacturing Analysis**

This certificate is a 12 hour program structured to provide extensive information about the behavior of metals before, during, and after various processing operations, the mechanics and physics of various operations, finite element based analysis and design of processes, application of advanced finite element techniques and issues affecting the accuracy of finite element simulations.

### **Composite Materials and Their Processing**

This certificate is a 12 hour program of four courses aimed at equipping students with the knowledge of the properties of composite materials and manufacturing processes of these materials. The courses in the program will help equip practicing engineers to the material properties and mechanics of composite materials as well as the manufacturing methods and tooling for processing these materials.

### **Design for Manufacturing**

This certificate is a 12 hour program of four courses offered as a value-added program for engineers who are currently working. The objective is to allow practicing engineers to enhance their skill by selecting sequenced and complementary courses to include knowledge of the product realization process and the impact of design considerations on manufacturing costs.

### **Enterprise Systems and Supply Chain Management**

This certificate is a 12 hour program aimed at equipping students with a knowledge of key enterprise level Information Technology systems and Supply Chain practices used by companies around the world. The courses are structured to provide extensive conceptual and applied information about enterprise level systems and supply chain management. The curriculum is jointly offered by the Decision Sciences and MIS faculty in the School of Business and the Industrial Engineering faculty in the College of Engineering. Program prerequisites: DS 850 or IME 553, or equivalent.

### **Foundations of Six-Sigma and Quality Improvement**

This certificate is a 12 hour program of four courses primarily intended for individuals with industrial affiliation who may be interested in enhancing their skills in Quality Engineering Management. The program includes most of the American Society for Quality's (ASQ) certification requirements, with detailed coverage of applied statistics and management techniques useful for process improvement, resources management, and design optimization.

### **Industrial Ergonomics and Safety**

This certificate is a 12 hour program of four courses plus a Calculus II prerequisite. The certificate provides advanced knowledge and methodology of ergonomics and safety engineering for practitioners in industry who are responsible for the design and evaluation of work systems for better usability, health, safety, and performance.

of workers in the workplace. The curriculum focuses on the essential knowledge, analytical techniques, guidelines, regulations, and contemporary issues of ergonomics and safety engineering for the design and evaluation of various work systems in industry.

### **Lean Systems**

This certificate is a 12 hour program of four courses plus an Operations Research prerequisite. The certificate provides advanced knowledge and methodology of production systems design, evaluation, and operation for practitioners in industry who are responsible for the development and management of production systems in the workplace. The curriculum focuses on the essential knowledge, analytical techniques, guidelines, regulations, and contemporary issues in the design, evaluation, and management of production systems in industry.

### **Systems Engineering and Management**

This certificate is a 12 hour program of four courses plus a Calculus II prerequisite. Students completing this program will be able to apply systems concepts and techniques to the understanding, description, design, and management of large-scale systems requiring the integration of information and human activity. The curriculum focuses on the essential knowledge, analytical techniques, and contemporary issues in complex systems definition, design, and decision-making.

### **Admission Requirements:**

Students seeking a graduate certificate must be admitted to the Graduate School in a degree program or in non-degree, Category A status.

Degree Admission – The student must have earned a bachelor's degree from a regionally accredited institution or a recognized institution in another country whose requirements for the bachelor's degree are substantially equivalent to an American four-year bachelor's degree. The student must also have a grade point average of at least 2.750 based upon the last 60 hours of course work (or nearest semester or term break to this), including any post-bachelor's graduate work, and no more than 9 hours of background deficiencies in the desired field. Some programs may require a higher minimum grade point average.

Non-Degree, Category A – Students who already possess a graduate degree and who do not wish to pursue a second degree, should apply for non-degree, category A admission. The student must have earned a bachelor's degree from a regionally accredited institution or a recognized institution in another country whose requirements for the bachelor's degree are substantially equivalent to an American four-year bachelor's degree. The student must also have a grade point average of at least 2.750 based upon the last 60 hours of course work (or nearest semester or term break to this), including any post-bachelor's graduate work. Some programs may require a higher minimum grade point average.

### **For More Information:**

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### **Apply On-Line:**

<http://webs.wichita.edu/ielc/banner/gateway.htm>