



WICHITA STATE
UNIVERSITY

The Metropolitan Advantage

WICHITA STATE UNIVERSITY GRADUATE CERTIFICATE PROGRAMS IN INDUSTRIAL AND MANUFACTURING ENGINEERING

The Industrial and Manufacturing Engineering (IMfgE) Department offers Graduate Certificate programs in the seven topical areas described below. Students seeking any of these certificates must be admitted to the Graduate School either in one of the degree programs offered by the department or in a 'Non-degree A' status. All Graduate School policies relative to admissions apply. Students pursuing a graduate certificate must file a plan of study for the certificate program to the Graduate Coordinator before half of the required hours are completed. Students may apply certificate course work toward a degree program. Each certificate program requires the completion of twelve credit hours from a selected list of courses. A cumulative graduate grade point average of at least 3.00 must be maintained for all courses comprising the certificate program and no grades below C. Students completing the certificate program will receive an appropriately worded certificate from the Graduate School, and notation will be made on the student's transcript when the certificate has been awarded.

Advanced Manufacturing Analysis. This program is aimed at equipping students with the skills necessary to carry out advanced analysis of manufacturing processes such as metal forming, machining, casting, and welding and will be of value in this age of analysis based process design. Program prerequisite: IME 258, ME 250, and AE 333. This program requires satisfactory completion of these four courses (a total of 12 credit-hours):

IME 558 Manufacturing Methods and Materials II, IME 758 Analysis of Manufacturing Processes, IEN 768 Metal Machining - Theory and Applications, IME 858 Non-Linear Finite Element Analysis of Metal Forming

Industrial Ergonomics and Safety. This program 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 (tasks, materials, tools, equipment, workstations, and environments) for better usability, health, safety, and performance of workers in the workplace. 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. Program prerequisite: Math 243 Calculus II. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):

IME 549 Industrial Ergonomics, IME 557 Safety Engineering, IME 724 Statistical Methods for Engineers, IME 760 Ergonomics Topics

Systems Engineering and Management. Upon successful completion of this program, students 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. Curriculum focuses on the essential knowledge, analytical techniques, and contemporary issues in complex systems definition, design, and decision-making. Program prerequisite: Math 243 Calculus II. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):

IME 664 Engineering Management, IME 724 Statistical Methods for Engineers, IME 740 Analysis of Decision Processes, IME 764 Systems Engineering and Analysis

Lean Systems. This program provides advanced knowledge and methodology of lean systems design, evaluation and operation for practitioners in industry who are responsible for the development and management of production systems in the workplace. Curriculum focuses on the essential knowledge, analytical techniques, guidelines, and contemporary issues in the design, evaluation and management of lean systems in industry. Program prerequisite: IEN 550 Operations Research. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):

IME 553 Production Systems, IME 724 Statistical Methods for Engineers, IME 783 Supply Chain Management, IME 767 Lean Manufacturing

Foundations of Six Sigma and Quality Improvement. This certification is primarily intended for individuals with industrial affiliation who may be interested in enhancing their skills in Quality Engineering and Six-Sigma Methodology. The program is designed to include most of the Six Sigma Black Belt certification (CSSBB) requirements outlined by the American Society for Quality (ASQ). This includes detailed coverage of applied statistical and managerial techniques most useful for process improvement, resource management, and design optimization. Program prerequisite: Math 243 Calculus II. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):

IME 724 Statistical Methods for Engineers, IME 854 Quality Engineering, IME 554 Statistical Quality Control, IME 755 Design of Experiments.

Composite Materials and their Processing. This program is aimed at equipping students with the knowledge of the properties of composite materials and manufacturing processes of these materials. The courses are structured to provide extensive information about the composite materials technologies, analysis involving composite materials, and processing of composite materials. Program prerequisites: Math 555, AE 333 and ME 250. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):

AE 653 Basic Composite Materials Technologies, AE 654 Manufacturing Composite Structures, IME 778 Machining of Composites, ME 762 Polymeric Composite Materials

Design for Manufacturing. The program is a value-adding program for engineers who are currently working to enhance their skill by selecting a few sequenced and complementary courses to include knowledge of the product realization process and the impact of design considerations on manufacturing costs. Program prerequisites: IME 558, IME 724/IE 254, Graphics and Programming experience. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):

IME 502 Manufacturing Measurement Analysis, IME 622 Computer Aided Design and Manufacturing, IME 775 Computer Integrated Manufacturing, IME 785 Tolerances in Design and Manufacturing,

For more information, contact:

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