

Courses

This online certificate program in Engineering/Manufacturing allows students to develop the skills necessary to understand and shape contemporary manufacturing operations. Each course will be offered in an eight-week block, so two courses can be completed each semester. The entire certificate program can be completed in as little as twelve months, and courses should be taken in the order listed below.

ISAT 211 – Issues in Modern Production
ISAT 330 – Manufacturing Systems: Techniques and Technologies
ISAT 331 – Automation in Manufacturing
ISAT 430 – Material Science in Manufacturing
ISAT 433 – Selected Problems in Manufacturing

Schedule:

Fall 2010

First eight weeks: ISAT 211
Second eight weeks: ISAT 330

Spring 2010

First eight weeks: ISAT 331
Second eight weeks: ISAT 430

Summer 2011

ISAT 433



Outreach & Engagement
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Certificate Program Coordinator:
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Certificate in Advanced Manufacturing

Online certificate program beginning Fall 2010



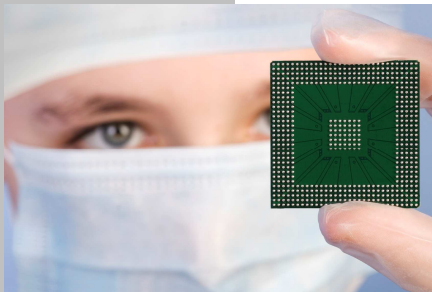
James Madison University

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www.jmu.edu/outreach/

Program Objectives

- Gain the analytical and communication skills necessary to decompose, analyze, and identify possible solutions to complex manufacturing problems and prepare written and oral reports of findings and present them in a competent and professional manner;
- Understand the structure of a modern manufacturing enterprise and the roles played by the different functional divisions such as production, marketing, finance, and R&D;
- Be familiar with methods of designing, managing, and improving manufacturing operations to realize the efficiency achieved by meeting the competitive goals of least cost, most flexibility, minimized cycle time;
- Be able to apply the statistical concepts of Total Quality Management, Statistical Process Control, and other techniques that help establish and maintain continuous process improvement while maintaining product quality;
- Understand how to select and apply computer based tools for product design automation and how to automate and integrate manufacturing processes and activities;
- Be able to practice integrated product development techniques and understand the requirements for effective product development teams;



Program Objectives (cont)



- Have a fundamental understanding of material structure, specifically the basic atomic structures and bonding that gives them their unique attributes, and properties, and where they can be useful; Acquire practical skills necessary to measure and grasp the different mechanical, chemical, and physical properties of engineering materials and apply this knowledge in the selection of materials for specific applications
- Understand the principles, operations, and limitations of common manufacturing processes and be aware of how engineering materials are processed into useful items, including the technical, economic, and social factors that affect both continuous and discrete process selection.

Admission Criteria:

A successful student will:

- Have a minimum of a high school diploma or GED
- Be comfortable with the technology required for online learning
- Have taken college level algebra or the equivalent, and have strong math skills
- Have a minimum of two years of work experience in manufacturing or related industries

Contact Information

For information about application and registration, contact Outreach & Engagement
www.jmu.edu/outreach
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