

# MANUFACTURING MANAGEMENT (MFGM)

## **MFGM 8480 Management of Technology**

[3 credit hours]

This seminar covers conceptual framework and relevant research studies on technology management. The literature from Technology Management as it relates to the management of product, manufacturing and supply chain technologies will be discussed.

**Term Offered:** Spring, Fall

## **MFGM 8490 Supply Chain and E-Business Issues in Manufacturing**

[3 credit hours]

This seminar focuses broadly on key issues relating effective management of product, information and financial flows in supply chains. It also relates to E-business practices, and their impact on supply chain design and management.

**Term Offered:** Spring, Fall

## **MFGM 8510 Supply Chain and Technology Management Analytics**

[3 credit hours]

This course focuses on advanced analytical methods and applications in supply chain and technology management. The first part of the course focuses on mathematical modeling and algorithms in supply chain management, while the second part focuses on how to use data to develop business insights and predictive capabilities.

## **MFGM 8630 Management Science**

[3 credit hours]

This course is an applied study of deterministic and stochastic methods of management science. A variety of applications with emphasis on manufacturing and technology management are introduced.

**Term Offered:** Spring, Fall

## **MFGM 8640 Advanced Management Science**

[3 credit hours]

The course introduces students to advanced theory, algorithms, and applications of management science techniques, including dynamic programming, nonlinear programming, game theory, etc. The methods have applications to supply chain management, manufacturing, transportation, marketing, and economics.

## **MFGM 8650 Stochastic Modeling**

[3 credit hours]

This course covers basic principles and methods in applied probability and stochastic modeling. The topics covered in this course include advanced probability theory, stochastic processes, Markov chains, Markov Decision Processes, queuing theory, computer simulation, etc. Applications of these techniques in supply chain management, manufacturing, transportation, and finance are introduced.

## **MFGM 8660 Qualitative Research Methodology**

[3 credit hours]

This course explores the use of qualitative methods within the fields of Information Systems and Operations Management. The seminar discusses the different qualitative methods that include Case Study, Ethnography, and Grounded Theory. In addition, we examine the differences between interpretive and positivist approaches using qualitative methods. This course covers research design and the various techniques in analyzing qualitative data. The course includes a discussion about mitigating bias in the areas of data collection and analysis.

## **MFGM 8670 Special Topics in Research Methods**

[3 credit hours]

This course focuses on contemporary research methods within the fields of manufacturing and technology management, including Operations and Supply Chain Management, Information Systems, etc. The specific topic on contemporary research methods will change each time.

## **MFGM 8810 Seminar/Colloquium**

[1 credit hour]

One credit hour requirement of these courses will be met by requiring the students to attend a reasonable number (10) of research seminars and colloquia in and outside the college, doctoral dissertation proposal and defenses at the college, etc., during one academic year.

**Term Offered:** Spring, Fall

## **MFGM 8840 Manufacturing Strategy**

[4 credit hours]

The seminar examines the theory and research related to the formulation and implementation of manufacturing strategy including the strategic planning process and techniques for industry and competitive analysis.

**Prerequisites:** MGMT 5110 with a minimum grade of D- or ORGD 7110 with a minimum grade of D-

## **MFGM 8850 Readings And Research In Manufacturing Management**

[1-12 credit hours]

This individually designed course will provide advanced readings in areas needed by a doctoral student.

**Term Offered:** Spring, Summer, Fall

## **MFGM 8860 Advanced Statistics**

[3 credit hours]

This course discusses multivariate data analysis. Topics include: principal components analysis, factor analysis, multidimensional scaling, cluster analysis, multiple regression analysis and multivariate analysis of variance. Statistical software packages are used.

**Prerequisites:** OPMT 5510 with a minimum grade of D-

**Term Offered:** Summer, Fall

## **MFGM 8870 Seminar in Statistics/ Research Method**

[3 credit hours]

This is an advanced second course in Statistical methods or management science or research methods. This course is designed for individual needs of the student to provide more depth in the research method as required.

**Term Offered:** Summer

**MFGM 8880 Research Methods-Theory Bldg**

[3 credit hours]

The course seeks to frame and discuss key issues that arise as social scientists conduct theoretically-relevant empirical research. In the course, the theory building in manufacturing management as well as research process and the literature, tools and techniques associated with each phase of the process will be introduced.

**Term Offered:** Spring, Fall

**MFGM 8890 Advanced Manufacturing Systems**

[3 credit hours]

This seminar provides an understanding of the design and management of manufacturing systems. This begins with an understanding of how manufacturing has evolved over time, continues with descriptions of current trends and ideas in manufacturing system design and concludes with discussion of future changes,

**Term Offered:** Spring, Summer, Fall

**MFGM 8900 Field Research**

[1-8 credit hours]

This course provides students with the opportunity to experience a realistic manufacturing problem and to develop approaches to solving that problem under the supervision of a faculty member.

**Term Offered:** Spring, Fall

**MFGM 8960 Dissertation**

[1-8 credit hours]

Dissertation

**Term Offered:** Spring, Summer, Fall

**MFGM 8980 Special Topics Seminar**

[3 credit hours]

This seminar focuses on current topics relating to manufacturing and technology management. The specific seminar topic will change each semester.

**Term Offered:** Spring, Fall