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**THE UNIVERSITY OF TENNESSEE SPACE INSTITUTE  
FALL SEMESTER 2010 COURSE LISTINGS**

**ENGINEERING MANAGEMENT**

**EM 501      CAPSTONE PROJECT (3-6)**  
SEC. 001      Dr. Gregory Sedrick  
SEC. 002      Dr. Denise Jackson

Application-oriented project to show competence in major academic area. Enrollment limited to Engineering Management students in non-thesis program. May be repeated. Maximum 6 hours.

**EM 502      REGISTRATION FOR USE OF FACILITIES FOR EM STUDENTS (1-15)**  
SEC. 001      Dr. Gregory Sedrick  
SEC. 002      Dr. Denise Jackson

Required for the student not otherwise registered during any semester when student uses University facilities and/or faculty time before a degree in Industrial Engineering (Engineering Management) is completed. May not be used toward degree requirements.

**EM 532      PROUCTIVITY AND QUALITY ENGINEERING (3)**  
SEC. 001      UTSI students participating at Tullahoma or Oak Ridge  
SEC. 002      UTSI students participating elsewhere  
SEC. 003      UTK students participating at Knoxville DE classrooms  
SEC. 004      UTK students participating elsewhere

TEXT: [http://www.utsi.edu/academics/ieandem/student\\_services.htm](http://www.utsi.edu/academics/ieandem/student_services.htm)

TIME:      Tuesday                      4:00 – 6:35                      E113

PROFESSOR: Dr. Denise Jackson

Productivity and quality measures defined and used to analyze current competitive position of important sectors of American industry with respect to national and international competition. Study of management theorists and systems which promote or inhibit productivity or quality improvements.

**EM 533      THEORY AND PRACTICE OF ENGINEERING MANAGEMENT (3)**  
SEC. 001      UTSI students participating at Tullahoma and Oak Ridge  
SEC. 002      UTSI students participating elsewhere  
SEC. 003      UTK students participating at Knoxville DE classrooms  
SEC. 004      UTK students participating elsewhere

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TIME:      Monday                      4:00 – 6:35                      E113

PROFESSOR: Dr. Gregory Sedrick

Principles of engineering management, including: business and organization design, culture, leadership, marketing and competition in global economy, motivation and performance management, empowerment,

organizational behavior, and diversity. Systems thinking, learning organizations, and systems dynamics modeling. Principle application to work settings and case studies.

**EM 537 ANALYTICAL METHODS FOR ENGINEERING MANAGERS (3)**

- SEC. 001 UTSI students participating at Tullahoma or Oak Ridge
- SEC. 002 UTSI students participating elsewhere
- SEC. 003 UTK students participating at Knoxville DE classrooms
- SEC. 004 UTK students participating elsewhere

TEXT: [http://www.utsi.edu/academics/ieandem/student\\_services.htm](http://www.utsi.edu/academics/ieandem/student_services.htm)

TIME: Thursday 4:00 – 6:35 E113

PROFESSOR: Dr. Denise Jackson

Survey of management analysis and control systems through IE techniques. Qualitative and quantitative systems: methods analysis, work measurement, incentive systems, wage and salary development, production and inventory control, facility layout, linear programming, and applied operations research techniques. Not for credit for students with undergraduate degrees in industrial engineering.

**EM 539 STRATEGIC MANAGEMENT IN TECHNICAL ORGANIZATIONS (3)**

- SEC. 001 UTSI students participating at Tullahoma or Oak Ridge
- SEC. 002 UTSI students participating elsewhere
- SEC. 003 UTK students participating at Knoxville DE classrooms
- SEC. 004 UTK students participating elsewhere

TEXT: [http://www.utsi.edu/academics/ieandem/student\\_services.htm](http://www.utsi.edu/academics/ieandem/student_services.htm)

TIME: Wednesday 4:00 – 6:35 E113

PROFESSOR: Dr. Gregory Sedrick

Strategic planning process and strategic management in practice, corporate vision and mission; product, market, organizational, and financial strategies; external factors; commercialization of new analysis to determine commercial feasibility of new ventures. *Prerequisite(s): EM 534 and IE 518 or consent of instructor.*

**EM 595 SPECIAL TOPICS IN ENGINEERING MANAGEMENT (3)**

- SEC. 001

PROFESSOR: Dr. Denise Jackson

**INDUSTRIAL ENGINEERING**

**IE 500 MASTER'S THESIS (1-15)**

- SEC. 005 Dr. Denise Jackson as main advisor
- SEC. 006 Dr. Gregory Sedrick as main advisor

**IE 515 ADVANCED PRODUCTION AND INVENTORY SYSTEMS (3)**

(CENTRA Web-based Course from UTK)

- SEC. 003 UTSI students participating at Tullahoma or Oak Ridge
- SEC. 004 UTSI students participating elsewhere

TEXT: [http://www.utsi.edu/academics/ieandem/student\\_services.htm](http://www.utsi.edu/academics/ieandem/student_services.htm)

TIME: Thursday 12:40 – 1:55 (EST)

PROFESSOR: Dr. Xiaoyan Zhu

Advanced topics in production planning and inventory systems. Material requirements planning; production planning and master scheduling; just-in-time concepts; distribution requirements planning; and other selected topics. *Prerequisite: 402 or consent of instructor.*

**IE 516            STATISTICAL METHODS IN INDUSTRIAL ENGINEERING (3)**

SEC. 001    (Interactive from UTSI to UTK)

TEXT:        Applied Statistics and Probability for Engineers, 4<sup>th</sup> Edition;  
Douglas C. Montgomery, George C. Runger; John Wiley and Sons; 4<sup>th</sup> Edition; ISBN #: 978-0-471-74589-1. [http://www.utsi.edu/academics/ieandem/student\\_services.htm](http://www.utsi.edu/academics/ieandem/student_services.htm)

TIME:        Tuesday & Friday                    10:15 – 11:30                    E111

PROFESSOR: Dr. Montgomery Smith

Application of classical statistical techniques to industrial engineering problems. Statistics and statistical thinking in managerial context of organizational improvement; descriptive statistics and distribution theory; relationship between statistical process control techniques and classical statistical tools; parameter estimation and hypothesis testing; goodness-of-fit testing; linear regression and correlation; analysis of variance; single and multiple factor experimental design. *Prereq: IE 251 - Probability and Statistics for Scientists and Engineers, or equivalent.*

**IE 526            ADVANCED APPLICATIONS OF SYSTEMS MODELING AND SIMULATION (3)**

(CENTRA Web-based Course from UTK)

SEC. 003    UTSI students participating at Tullahoma or Oak Ridge

SEC. 004    UTSI students participating elsewhere

TEXT:        [http://www.utsi.edu/academics/ieandem/student\\_services.htm](http://www.utsi.edu/academics/ieandem/student_services.htm)

TIME:        Thursday                            2:10 – 3:25

PROFESSOR: Dr. Xueping Li

Modeling of discrete, continuous, and combined systems using current simulation software. Development of flexible simulation models to enhance accessibility of simulation models for experimentation. Development of distributed simulation models to represent and test production and supply chain systems. (*Same as Management Science 526*). *Prerequisite(s): 306 or 525.*

**IE 600            DOCTORAL RESEARCH/DISSERATION (3-15)**

SEC. 003    Dr. Denise Jackson

SEC. 007    Dr. Gregory Sedrick