

FALL 2018 – COURSE OFFERINGS

EM 500 Thesis

Professor: Dr. James Simonton CRN 47626

Professor: Dr. Andrew Yu CRN 49342

EM 501 Capstone Project

Professor: Dr. Janice Tolk CRN 42988

EM 502 Registration for Use of Facilities for EM Students

Professor: Dr. James Simonton CRN 42989

Professor: Dr. Andrew Yu CRN 49347

EM 532 Productivity and Quality Engineering

Professor: Dr. Janice Tolk CRN 45042 Prerecorded

Textbooks:

1. *Improving Performance: How to Manage the White Space on the Organization Chart*, Geary A. Rummler and Alan P. Brache, 3rd Edition
2. *The Principles of Scientific Management*, Taylor, F. W. (1998, 1911). Mineola, NY: Dover Publications, Inc.
3. *The New Economics for Industry, Government, Education*, Deming, W. E., 2nd Edition (1994). Cambridge, MA: The MIT Press.

Course Description: 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 537 Analytical Methods for Engineering Managers

Time: Monday – 4:00-6:30pm – E113

Professor: Dr. Denise Jackson

Sections: 001 CRN 45046 UTSI students participating at Tullahoma
002 CRN 45047 UTSI students participating elsewhere
003 CRN 45048 UTK students participating elsewhere

Textbook: *Operations Management*, William Stevenson, McGraw-Hill, January 7, 2014, Edition: 12th
ISBN-13: 978-0078024108, ISBN-10: 0078024102

Course Description: Survey of management analysis and control systems through industrial engineering 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.

EM 539 Strategic Management in Technical Organizations

Time: Tuesday, 1:00-3:30pm – E113

Professor: Dr. Sandra Affare

Sections: 001 CRN 45050 UTSI students participating at Tullahoma
002 CRN 45051 UTSI students participating elsewhere

003 CRN 45052 UTK students participating elsewhere

Textbook: *Strategic Management Concepts*, Frank Rothaermel, 3rd Edition, McGraw-Hill,
ISBN - 13: 978-1259420474, ISBN-10: 1259420477

Course Description: Strategic planning process and strategic management in practice; corporate vision and mission; product, market, organizational, and financial strategies; external factors; commercialization of new technologies; and competition and beyond.

EM 543 Legal & Ethical Aspects of Engineering Management

Time: Thursday, 1:00-3:30 – E113

Professor: Dr. Sandra Affare

Sections: 001 CRN 51240 UTSI students participating at Tullahoma
002 CRN 51247 UTSI students participating elsewhere
003 CRN 51248 UTK students participating elsewhere

Text: *Engineering Ethics: Concepts and Cases*, Jr. Charles E. Harris and Michael S. Pritchard,
Wadsworth Publishing, 6th ed, ISBN-10: 1337554502 ISBN-13: 9781337554503

Optional text: *Legal Aspects of Managing Technology*, Lee B. Burgunder, West Legal Studies in Business
Academic, South-Western College/West; 5 edition (January 20, 2010)
ISBN-10: 1439079811 ISBN-13: 978-1439079812

Course Description: Legal aspects imposed by government and ethical considerations in engineering practice. Selected readings, lecture, discussion, and student presentations. Current topics from government and industry.

EM 600 Doctoral Research and Dissertation

Professor: Dr. James Simonton CRN 45056

Professor: Dr. Andrew Yu CRN 45058

EM 602 Supply Chain and Logistics Systems Engineering

Time: Tuesday, 10:00 – 12:30 – E113

Professor: Dr. Andrew Yu

Section: 001 CRN 52347 UTSI students participating at Tullahoma
002 CRN 52348 UTSI students participating elsewhere
003 CRN 52349 UTK students participating elsewhere

Textbook: Instructor will provide electronic files through Canvas

This course introduces the concepts, methods and techniques of supply chain management and logistics support from a systems engineering perspective. The discussion of different topics in the course will focus on the different stages in a system life cycle. (RE) Prerequisite(s): 537

Industrial Engineering Courses Offerings

IE 516 Statistical Methods in Industrial Engineering

Time: Monday & Wednesday – 11:10am – 12:25pm EST – UTK classroom, 410 Tickle Bldg.
Professor: Dr. Oleg Shylo
Section: 001 CRN 45123 Students participating at Knoxville
002 CRN 45124 Students participating distance education

Textbook: TBD

Course Description: 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. *Recommended Background: Statistics 251 or equivalent.*

IE 526 Advanced Systems Modeling & Simulation

Time: Thursday – 9:45 – 11:00am EST – UTK classroom, 410 Tickle Bldg.
Professor: Dr. Xueping Li
Section: 001 CRN 45134 Students participating at Knoxville
002 CRN 45136 Students participating distance education

Textbook: TBD

Course Description: 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.

IE 529 Application of Linear Algebra in Engineering Systems

Time: Tuesday & Friday – 9:30 – 10:45am CST – UTSI classroom
Professor: Dr. Monty Smith
Section: CRN 46718 Lectures posted online
Textbook: TBD

Fundamental concepts of linear algebra to problems in engineering systems: steady state and dynamic systems. Geometric and physical interpretations of relevant concepts: least square problems, LU, QR, and SVD decompositions of system matrix, eigenvalue problems, and similarity transformations in solving difference and differential equations; numerical stability aspects of various algorithms; application of linear algebra concepts in control and optimization studies; introduction to linear programming. Computer projects.

Cross-listed: (See Chemical and Biomolecular Engineering 529.)

Comment(s): Graduate standing or consent of instructor required.

IE 550 Graduate Seminar

Time: Friday – 2:30 – 3:30pm EST – UTK classroom, 402 Tickle Bldg.
Professor: Dr. Ming Jin
Section: 001 CRN 45519 Students participating in Knoxville
002 CRN 45520 Students participating distance education

Seminar provides an opportunity for Master's and Doctoral students to acquaint themselves with research being conducted by both faculty and graduate students in the Industrial and Information Engineering Department, as well as select campus-wide and off-campus researchers from both academia and industry. Research work and relevant results are presented in a professional environment that promotes continued interaction among interested parties. Presentations are not restricted to thesis and dissertation work. *Grading Restriction: Satisfactory/No Credit grading only.*

For complete listing of IE courses see Timetable of Classes - https://bannersb.utk.edu/kbanpr/bwckschd.p_get_crse_unsec