EM COURSE OFFERINGS – SPRING 2018

EM 500 Thesis
CRN  27679  Prof. Simonton
CRN  28913  Prof. Yu

EM 501 Capstone
CRN  22043  Prof. Tolk

EM 502 Registration for Use of Facilities
CRN  22044  Prof. Simonton
CRN  29703  Prof. Yu

EM 533 Theory and Practice of Engineering Management

SEC. 001 CRN  22045  Students participating at Tullahoma classroom
       002 CRN  22046  Students participating by distance ed.
       003 CRN  22047  Students participating at Knoxville DE classroom

TEXT: TBA

TIME: Monday 4:00 – 6:35 (Central time)  E-113
PROFESSOR: Dr. Denise Jackson

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 534 Financial Management for Engineering Managers

SEC. 001 CRN  22049  Students participating at Tullahoma classroom
       002 CRN  22050  Students participating by distance ed.
       003 CRN  22051  Students participating at Knoxville DE classroom


TIME: Tuesday 4:00 – 6:35pm (Central time)  E-113
PROFESSOR: Dr. Andrew Yu

Financial and managerial accounting in engineering and technology management. Transaction recording, financial statements, ratios and analysis, activity-based accounting, and standard practices for costing, budgeting, assessment, and control.
Factors other than mechanical or chemical which enter into successful establishment of manufacturing or service enterprise. Organizational and financial planning and evaluation. Cost and location studies and market analysis to determine commercial feasibility of new ventures.

(Re) Prerequisite(s): 539.


(Re) Prerequisite(s): Industrial Engineering 516

SIMONTON

EM 500 Doctoral Research/Dissertation
Sec. 001 CRN 25267 Simonton
Sec. 002 CRN 28923 Yu
IE COURSES OFFERINGS – SPRING 2018

IE 516 Statistical Methods in IE

Sec.  002  CRN  31908  Record Only
ISBN 13: 9780534386696
TIME:  Tuesday  UTSI campus   4:00 – 6:35pm (Central time)   E-113
PROFESSOR:  Dr. James Simonton

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 517 Reliability of Lean Systems

SEC.  001  CRN  26984  UTK students participating at Knoxville classroom
002  CRN  26985  UTK students participating by distance ed
003  CRN  27020  UTSI students participating by distance ed
TEXT:  TBA
TIME:  Monday & Wednesday  John D. Tickle Building Room 410
PROFESSOR:  TBA

Course is divided into two major components. First half of the course will focus on introducing the students to the concepts of reliability and maintainability and the impact of lean on the reliability of complex systems. The concepts of reliability engineering are utilized to address lean system failures, including equipment failures, human failures, material failures and scheduling failures. Will develop the ability to design systems that are both lean and reliable. The second half of the course will introduce students to specific case studies of systems failures and ask student to develop solutions by considering different dimensions including financial, technical feasibility, risk, safety, security and others. Multi criteria decision making methodologies will be presented to allow students to make decisions when different criteria lead to conflicting solutions.

*(RE) Prerequisite(s): 516. Recommended Background: Background in lean and reliability.*

IE 518 Advanced Engineering Economic Analysis

SEC.  001  CRN  21755  UTK students participating at Knoxville classroom
002  CRN  21756  UTK students participating by distance ed
003  CRN  21757  UTSI students participating by distance ed
TEXT:  TBA
TIME:  Monday & Wednesday  John D. Tickle Building Room 410
PROFESSOR:  Dr. Reid L. Kress

Application of engineering economic analysis in complex decision situations. Inflation and price changes; uncertainty evaluation using non-probabilistic techniques; capital financing and project allocation; evaluations involving equipment replacement, investor-owned utilities, and public works projects; probabilistic risk analysis including computer simulation and decision trees; multi-attribute decision analysis; and other advanced topics.

*(RE) Prerequisite(s): 405 Recommended Background: Statistics 251.*
IE 522 Optimization Methods for Engineering Managers

SEC. 001 CRN 21759 UTK students participating at Knoxville classroom
002 CRN 21760 UTK students participating by distance ed
003 CRN 21761 UTSI students participating by distance ed
TEXT: TBA
TIME: Tuesday & Thursday John D. Tickle Building Room 410
PROFESSOR: Dr. Alberto Garcia

Classical optimization applied to constrained and unconstrained, non-linear, multi-variable functions; search techniques; decision making under uncertainty; game theory; and dynamic programming. Recommended Background: Linear Algebra.

IE 529 Application Linear Algebra in Engineering Systems

CRN 21767
TEXT: TBA
TIME: Tuesday & Friday UTSI Campus 9:30 – 10:45am (Central time) E-111
PROFESSOR: Dr. Monty Smith

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

SEC. 001 CRN 25277 UTK students participating at Knoxville classroom
002 CRN 25278 UTK students participating by distance ed
003 CRN 27021 UTSI students participating by distance ed
TIME: Friday John D. Tickle Building Room 410

IE 602 Nonlinear Optimization

SEC. 001 CRN 21781 UTK students participating at Knoxville classroom
002 CRN 29656 UTK students participating by distance ed
003 CRN 29657 UTSI students participating by distance ed
TEXT: TBA
TIME: Tuesday & Thursday John D. Tickle Building Room 410
PROFESSOR: Dr. James Ostrowski

Kuhn-Tucker theory in nonlinear programming, solution procedures for constrained and unconstrained nonlinear programs, search techniques, quadratic programming, duality and sensitivity analysis. Recommended Background: Differential equation and proficiency in computer programming. Registration Restriction(s): Minimum student level – graduate.
Heuristic methods and their applications to optimization problems, including neighborhood search and major meta-heuristics methods.

Recommended Background: Linear Programming.

Registration Restriction(s): Minimum student level – graduate.

For more options see Timetable of Classes