

ANALYTICS AND OPERATIONS MANAGEMENT (ANOP)

ANOP 102. Spreadsheet Modeling & Data Analysis. 1 Credit.

Offered Both Fall and Spring; Lecture hours:3,Other:1

This course serves as the introduction to quantitative modeling and basic statistical analysis in a spreadsheet-based environment, especially as they apply to managerial decision making.

ANOP 202. Operations Management. 1 Credit.

Offered Both Fall and Spring; Lecture hours:3

This course introduces students to the ways in which to model, analyze, and improve processes for producing services and goods. Prerequisite: ANOP 102. ENGR 226 or MATH 216 or MATH 227 or PSYC 215 accepted with permission of the instructor.

ANOP 203. Introduction to Programming for Business Analytics. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

Overview of programming tools and methods for analytics. Students solve computational and modeling problems using Python. This foundation of programming logic will help students understand advanced analytic tools in the upper-level Business Analytics courses. Not open to students who have taken CSCI 203.

ANOP 204. Sports Analytics. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

This course focuses on analytical techniques and their application to the sports industry. Course topics include player evaluation, team ratings, scheduling and coaching strategies. A basic knowledge of Excel spreadsheets, probability, statistics and sports (specifically, baseball, basketball and football) is assumed. Prerequisite: ANOP 102 or MATH 216 or PSYC 215.

ANOP 242. Database Management and Applied Data Analysis. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

Databases are essential for organizations to collect, store and use data in an effective way. This course introduces students to how databases are designed and operated. The students will learn the principles of database design, the relational model and the SQL language. Prerequisite: ANOP 102 or permission of the instructor.

ANOP 270. Data Visualization for Business Analytics. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

An introduction to the principles of data visualization and data preparation. Instruction in software to prepare and present data through the creation of tables, charts and dashboards to aid in communication of insights. Prerequisite: ANOP 102 or ENGR 215 or ENGR 226 or MATH 216 or MATH 227 or PSYC 215.

ANOP 301. Global Supply Chain Management. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

In this course students will learn the concepts and tools to model, analyze and improve global supply chain operations under a variety of contexts. Prerequisites: ANOP 102. ENGR 226 or MATH 216 or MATH 227 or PSYC 215 accepted with permission of the instructor.

ANOP 302. Financial Decision Modeling using Spreadsheets. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

Decision making of individuals and groups in organizations. Topics include linear and nonlinear optimization with applications in finance and accounting, fundamentals of portfolio and risk management, and the application of Monte Carlo methods to the pricing of derivatives. Prerequisites: ACFM 203 or ACFM 210 and ANOP 102, or equivalents.

ANOP 310. Independent Study in Analytics and Operations Management. .25-1 Credits.

Offered Either Fall or Spring; Lecture hours:Varies,Other:3; Repeatable

Independent Study in Analytics and Operations Management. Prerequisite: permission of the instructor.

ANOP 311. Supply Chain Analytics. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

In this course students will learn basic concepts in quantitative supply chain modeling and simulation. Students learn methods that are used extensively in business organizations to solve large, structured problems. Prerequisite: ANOP 102. ENGR 226 or MATH 216 or MATH 227 or PSYC 215 accepted with permission of instructor.

ANOP 315. Special Topics in Analytics and Operations Management. .25-1 Credits.

Offered Fall, Spring or Summer; Lecture hours:Varies

Special Topics in Analytics and Operations Management. Prerequisite: permission of the instructor.

ANOP 330. Predictive Analytics: Machine Learning Fundamentals for Business. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

A survey of the concepts, methods, and applications of machine learning toward problems in business. Topics include classification, prediction, and clustering methods. Students will require a laptop in class. Prerequisites: (ANOP 102 or ENGR 215 or ENGR 226 or MATH 216 or MATH 227 or PSYC 215) and (ANOP 203 or CSCI 203).

ANOP 350. Predictive Analytics: Forecasting & Simulation. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

Study of statistical modelling and simulation techniques for data and model-based forecasting (Time Series, Smoothing Methods, Regression, ARIMA, Simulation, etc.) using a variety of software tools. Prerequisites: (ANOP 102 or ENGR 226 or MATH 216 or MATH 227 or PSYC 215) and (ANOP 203 or CSCI 203).

ANOP 370. Prescriptive Analytics: Decision Modeling & Optimization. 1 Credit.

Offered Either Fall or Spring; Lecture hours:3

An introduction to decision modeling and analysis using deterministic optimization models and solution methodologies. Prerequisites: (ANOP 102 or ENGR 215 or ENGR 226 or MATH 216 or MATH 227 or PSYC 215) and (ANOP 203 or CSCI 203). Open to juniors and seniors.

ANOP 390. Honors Course in Analytics and Operations Management. .5-1 Credits.

Offered Either Fall or Spring; Lecture hours:Varies,Other:3; Repeatable

Honors Course in Analytics and Operations Management. Prerequisite: permission of the instructor.

ANOP 400. Business Analytics Practicum. 1 Credit.

Offered Both Fall and Spring; Lecture hours:3

A culminating experience course where student teams collaborate with external clients on semester long projects leveraging the skills and concepts acquired within the Business Analytics major. Prerequisites: ANOP 330 and (ANOP 350 or ANOP 370 or MATH 358). Open to junior and senior Business Analytics majors. Others by permission of instructor.