



Decision Support Modeling
ISM 434
Southwestern College Professional Studies

COURSE SYLLABUS

I. **Course Catalog Description**

Learners learn business analytics through decision modeling and analysis. Learners gain skills in the use of decision modeling and analytical technologies. Topics include modeling and analytical methods, simulation and statistical software applications, and Web-based decision support systems. Prerequisites: ISM367 and ISM400.

II. **Required and Supplementary Instructional Materials**

Textbook

Albright, S. C., & Winston, W. L. (2015). *Business analytics: Data analysis and decision making* (5th ed.). Stamford, CT: Cengage Learning. Print ISBN: 9781133629603. CourseSmart ISBN: 9781285969329.

This ebook is included in the course fees for this class. No additional book purchase is necessary.

Software

Microsoft Word

Microsoft Excel

DecisionTools Suite Add-In (provided with textbook)

SolverTable Add-In (provided with textbook)

Supplemental Readings

“Development of a Decision Support System for Hurricane Evacuation Management” by Michael K. Lindell & Carla S. Prater (http://hrrc.arch.tamu.edu/media/cms_page_media/558/02-05R.pdf)

“The ‘Killer Application’ of Revenue Management: Harrah’s Cherokee Casino & Hotel” by Richard Metters et al. (<http://revenueanalytics.com/wp-content/uploads/2013/11/2008-Interfaces.pdf>)

“Optimizing Profit with the Linear Programming Model: A Focus on Golden Plastic Industry Limited, Enugu, Nigeria” by Benedict Ezema & Uzochukwu Amakom (<http://www.idjrb.com/articlepdf/article225.pdf>)

“New York Investigates Retailers For Unpredictable Work Schedules” by Y. Noguchi (<http://www.npr.org/2015/04/13/399414298/new-york-investigates-retailers-for-unpredictable-work-schedules>)

“Please Be Seated” from the *Economist* (<http://www.economist.com/node/21528218>) “The Right Way to Board Passengers on an Airplane” by Jason Steffen (<https://www.washingtonpost.com/posteverything/wp/2014/11/30/the-right-way-to-board-passengers-on-an-airplane/>)

“Decision Modeling to Estimate the Impact of Gastric Bypass Surgery on Life Expectancy for the Treatment of Morbid Obesity” by Daniel Schauer et al.

(<http://archsurg.jamanetwork.com/article.aspx?articleid=213325>)

III. **Learning Outcomes**

Learning outcomes describe the knowledge, skills, values, and attitudes that learners gain as the result of a particular learning experience. Southwestern College Professional Studies has learning outcomes specific to each course and each [undergraduate](#) and [graduate](#) program of study, as well as [institution-wide outcomes](#) related to the mission and vision of the college. Outcomes can help learners and instructors focus on the big picture of the learning experience and can help inform potential employers about a graduate’s knowledge and skills.

Upon successfully completing this course, the learner will be able to:

1. Explain the attributes of variant organizational and management decision-making models and methods.
2. Evaluate alternative decision support technologies, given varying decision-making models and methods, and organizational problems.
3. Construct a decision support model for a technological solution, given varying decision-making models and methods, and organizational problems.
4. Propose a decision support solution for a given organizational problem, given a specific decision-making model or method.
5. Execute a decision support solution for a given organizational problem.

At the end of the course, learners may vary in their ability to achieve these outcomes. You are more likely to achieve these outcomes only if you attend class and/or online activities as required by the syllabus, complete the requirements for all assignments to the best of your ability, participate actively in class activities and group work as directed, and study diligently for exams.

IV. Course Policies

Students are expected to read and abide by the course policies located in the instructor-specific syllabus in the blackboard course.

V. Course Requirements:

Requirements	Number of Assignments	Points Possible	Percent of Grade
Discussion Assignments	9	180	20%
Problem Sets	7	245	25%
Essays and Memos	5	175	15%
Case Studies	3	100	10%
Mastery Assignments	3	300	30%
Total Points		1,000	100%

VI. Course at a Glance:

Unit	Reading & Preparation Activities	Graded Work Due
1	<ul style="list-style-type: none"> • <i>Business Analytics</i>: Chapter 1, Chapter 6 • Tutorial video: <ul style="list-style-type: none"> ○ Building a Tree with PrecisionTree • “Development of a Decision Support System for Hurricane Evacuation Management” by Michael K. Lindell & Carla S. Prater 	Discussion 1 Discussion 2 Case Study Problem Set Essay
2	<ul style="list-style-type: none"> • <i>Business Analytics</i>: Chapter 12, Chapter 17 • Tutorial video: <ul style="list-style-type: none"> ○ Decision Trees with Microsoft Data Mining Add-In • “The ‘Killer Application’ of Revenue Management: Harrah’s Cherokee Casino & Hotel” by Richard Metters et al. 	Discussion Problem Set 1 Problem Set 2 Memo

Unit	Reading & Preparation Activities	Graded Work Due
3	<ul style="list-style-type: none"> • <i>Business Analytics</i>: Chapter 13 • Tutorial videos: <ul style="list-style-type: none"> ○ Developing the Product Mix 1 Model ○ Sensitivity for the Product Mix 1 Model ○ Developing the Product Mix 2 Model ○ Developing the Production Planning Model • “Optimizing Profit with the Linear Programming Model: A Focus on Golden Plastic Industry Limited, Enugu, Nigeria” by Benedict Ezema & Uzochukwu Amakom 	<p>Discussion Problem Set Essay Case Study</p>
4	<ul style="list-style-type: none"> • <i>Business Analytics</i>: Chapter 14 • Tutorial videos: <ul style="list-style-type: none"> ○ Developing the Worker Scheduling Model ○ Developing the Blending Model ○ Developing the Transportation Model ○ Developing the Basic Aggregate Planning Model ○ Developing the Pension Fund Model • “New York Investigates Retailers For Unpredictable Work Schedules” by Yuki Noguchi 	<p>Discussion 1 Discussion 2 Problem Set Essay Mastery Assignment</p>
5	<ul style="list-style-type: none"> • <i>Business Analytics</i>: Chapter 15 • Tutorial videos: <ul style="list-style-type: none"> ○ RAND and RANDBETWEEN Functions ○ Exploring Distributions with @RISK ○ Developing the Walton Model with Excel Tools Only ○ Developing the Walton Model with @RISK • “Please Be Seated” from the <i>Economist</i> 	<p>Discussion 1 Discussion 2 Problem Set Essay Mastery Assignment</p>
6	<ul style="list-style-type: none"> • <i>Business Analytics</i>: Chapter 16 • Tutorial videos: <ul style="list-style-type: none"> ○ Government Contract Bidding Model ○ Warranty Cost Model ○ Drug Production Model ○ Customer Loyalty Model ○ Game of Craps • “Decision Modeling to Estimate the Impact of Gastric Bypass Surgery on Life Expectancy for the Treatment of Morbid Obesity” by Daniel Schauer et al. 	<p>Discussion Problem Set Mastery Assignment Case Study</p>

VII. Other Policies and Requirements

Follow this link to the Southwestern College Professional Studies [Standard Syllabus](#) in Blackboard. You may be required to log in.