



OSCM378 - Business Modeling

Location: USA

Frequency: Any

Instruction: Franklin

Format: Online

Length: 6-Week

Edition: working

*Note: The PDF version of the course will not include class communications or discussion posts that are added throughout the duration of the course.  
This PDF was last updated on 2019/03/13 10:59:10.*

**Object: Course Introduction****Course Introduction****Student Content****Course Introduction**

More than any other management discipline, operations and supply chain management decisions require quantitative modeling and analysis. Some of the areas that require quantitative analysis are operations planning; logistics network planning, transportation, scheduling and resource allocation. Quantitative analysis is also called management science and operations research. Quantitative analysis provides students with a systems view to analyze operations and supply chain management problems. A systems view enables managers to view any given problem as system, which has an objective and is subject to numerous constraints and limitations. The quantitative analysis tools provide the decision makers with an optimum solution to achieve their objectives.

This course will give students the foundations of quantitative analysis and they will learn tools like simulation and linear programming; the latter is the most prominent quantitative analysis tool. By the time you complete this course, you will be able to model management problems and solve these models using Excel spreadsheets.

Topics you will address include:

- Linear programming modeling using Excel Solver and graphical solution.
- Resource allocation problems with linear programming.
- What-if (sensitivity) analysis for linear programming models.
- Network models.
- Binary integer models.
- Nonlinear programming models.
- Queuing models.
- Computer simulations on a spreadsheet.

**Course Description**

This course provides the foundations of quantitative analysis methods used in business and operations management problems. Students will be able to develop skills in modeling and analyzing problems faced by business and operations managers. Some of the topics covered are: linear programming, network and transportation analysis, queuing models and simulation.

**Prerequisites**

- Introduction to Spreadsheets (COMP 106), Introduction to Databases (COMP 108) or Database Management Systems (COMP 281)
- Statistical Concepts (MATH 215) or Probability & Statistics (MATH 380).

**Course Outcomes**

Upon successful completion of this course, students will be able to:

1. Solve basic linear programming problems by using Excel Solver and graphical solution

2. Discuss the issues related to linear programming methods
3. Analyze resource allocation problems with linear programming
4. Perform what-if (sensitivity) analysis for linear programming models
5. Analyze different network models using linear programming
6. Formulate binary integer models using linear programming
7. Formulate nonlinear programming models
8. Apply a queuing model to analyze different queuing systems
9. Perform basic computer simulations on a spreadsheet

## Object: Lead Faculty Information



### Lead Faculty Information

#### Student Content

### Lead Faculty Information

The Lead Faculty for OSCM 378 is [Brian Gregory](#), Ph.D.

The role of the Lead Faculty is to ensure quality of the course following the design by mentoring and monitoring faculty delivering the course and planning delivery of the course, which includes scheduling and staffing the course. The Lead Faculty will also have responsibility for planning the redesign of the course.

### When should the Lead Faculty be contacted?

Students enrolled in BLF courses should first discuss any course concerns with the instructor. If the student is unable to resolve the issues then the student should contact the Lead Faculty for that class. In addition if students want to give feedback about a particular course or if there are problems involving the student manual, or instructor issues the student should contact the Lead Faculty.

### This course was developed by the following contributors:

**Alper Camci, Ph.D.** Course Developer Faculty

**Michael Powers, MSBM, PMP** Content Expert

**Matt Barclay, Ph.D.** Instructional Design Faculty

## Object: Accessing E-Textbooks



### Accessing E-Textbooks

#### Student Content

To access the text(s) for this course, click on any link to the e-textbook(s) within the course (or directly select the e-textbook object(s) located within the Syllabus container), and then click the **Open** button. It is highly recommended that you then download the e-textbook(s) to your device(s) for offline use.

**Note:** The e-textbook object(s) are titled using APA style, as follows: Author's last name (copyright year).

## Object: Course Materials



### Course Materials

#### Student Content

### Required Materials

- Hillier, F. S., & Hillier, M. S. (2013). *Introduction to management science: A modeling and case studies approach with spreadsheets*. (5th. ed.). New York: McGraw-Hill/Irwin. ISBN: 9780077825560 (print), 9780078024061 (e-text).

**Note:** Supplemental resources can be found on the following student website. Some of the reading assignments are on this website:

[http://highered.mheducation.com/sites/0078024064/student\\_view0/index.html](http://highered.mheducation.com/sites/0078024064/student_view0/index.html)

**Obtaining Course Materials:** A digital copy of the textbook (e-textbook) for this course is accessible via VitalSource, an online platform for digital instructional materials. Clicking on any link to the book from within the course will direct you to an object from which a digital copy of the textbook can be opened in a new browser tab. For a detailed walkthrough on accessing the digital copy of the textbook, please refer to [this tutorial](#).

Your Franklin account was charged for these embedded materials at the time of registration. For a seamless learning experience, it is strongly recommended that you utilize the materials embedded within your course. To opt out of using these materials, access the Shortcuts menu at the top of the screen. Select the "E-Textbook Opt Out" link and follow the instructions. If you elect to opt out of using these materials, visit <http://www.franklin.edu/financial-aid/tuition-fees/e-textbooks> (or refer to the ISBN listed above) to help you find and purchase the course materials on your own.

## Object: Hillier and Hillier (2013)



### Hillier and Hillier (2013)

#### Student Content

Click the Open button above to access a digital version of your textbook (eTextbook).

LTI

Activated

Integrate

Activated

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## Object: Undergraduate Grading Policy



### Undergraduate Grading Policy

#### Student Content

#### Grading Guidelines

The assignment of a letter grade for a course is an indication of the student's overall success in achieving the learning outcomes for the course. The course letter grade may be viewed as a summary statement of the student's achievement in individual assessments (assignments & activities). These assessments are intended to identify both strengths and areas in need of improvement for students. Student work is assessed according to the guidelines below.

#### Course Requirements

Assignment	Expected Performance	Maximum Points
<a href="#">1-0: Introductions</a>	11 - 12	15
<a href="#">1-1: Meet 1</a>	11 - 12	15
<a href="#">1-2: Wk1 Discuss</a>	15	20
<a href="#">1-3: Solver 1</a>	37 - 38	50
<a href="#">1-4: Case 1 (Begin)</a>	75	100
<a href="#">2-1: Meet 2</a>	11 - 12	15
<a href="#">2-2: Wk2 Discuss</a>	15	20
<a href="#">2-3: Solver 2</a>	37 - 38	50
<a href="#">2-4: Solver 3 (Begin)</a>	75	100
<a href="#">3-1: Meet 3</a>	11 - 12	15
<a href="#">3-2: Wk3 Discuss</a>	15	20

<a href="#">3-3: Solver 4 (Begin)</a>	37 - 38	50
<a href="#">3-4: Solver 6 (Begin)</a>	93 - 94	125
<a href="#">4-1: Meet 4</a>	11 - 12	15
<a href="#">4-2: Wk4 Discuss</a>	15	20
<a href="#">4-3: Solver 5</a>	37 - 38	50
<a href="#">4-4: Paper 1 (Begin)</a>	75	100
<a href="#">5-1: Meet 5</a>	11 - 12	15
<a href="#">5-2: Wk5 Discuss</a>	15	20
<a href="#">5-3: Solver 7</a>	37 - 38	50
<a href="#">6-1: Meet 6</a>	11 - 12	15
<a href="#">6-2: Wk6 Discuss</a>	15	20
<a href="#">6-3: Solver 8</a>	37 - 38	50
<a href="#">6-4: Solver 9</a>	37 - 38	50
<b>Total Points</b>	<b>750</b>	<b>1000</b>

### Course-level Grading Guidelines

Grade	Description
A	90 – 100% of the total possible points earned for the course
B	80 – 89% of the total possible points earned for the course
C	70 – 79% of the total possible points earned for the course
D	60 – 69% of the total possible points earned for the course
E	0 – 60% of the total possible points earned for the course

(For all other possibilities, see your [Academic Bulletin](#).)

### Assessment (Assignment and Activities) Grading Guidelines

Grade	Meaning	Guidelines (where applicable)
		Assessment of the learning outcomes indicates <b>superior</b> evidence of:
A	Superior Academic Work	<ul style="list-style-type: none"> <li>• Innovation and synthesis of thought</li> <li>• Application of concepts and theories</li> </ul>

		<ul style="list-style-type: none"> <li>• Insightful, logical reasoning</li> <li>• Documentation, including requisite citations</li> <li>• Usage of the conventions of standard written and spoken English</li> </ul> <p><b>Assessment of the learning outcomes indicates <i>solid</i> evidence of:</b></p>
<b>B</b>	<b>Good Academic Work</b>	<ul style="list-style-type: none"> <li>• Innovation and synthesis of thought</li> <li>• Application of concepts and theories</li> <li>• Insightful, logical reasoning</li> <li>• Documentation, including requisite citations</li> <li>• Usage of the conventions of standard written and spoken English</li> </ul> <p><b>Assessment of the learning outcomes indicates <i>sufficient</i> evidence of:</b></p>
<b>C</b>	<b>Adequate Academic Work</b>	<ul style="list-style-type: none"> <li>• Innovation and synthesis of thought</li> <li>• Application of concepts and theories</li> <li>• Insightful, logical reasoning</li> <li>• Documentation, including requisite citations</li> <li>• Usage of the conventions of standard written and spoken English</li> </ul> <p><b>Assessment of the learning outcomes indicates <i>minimal</i> evidence of:</b></p>
<b>D</b>	<b>Marginal Academic Work</b>	<ul style="list-style-type: none"> <li>• Innovation and synthesis of thought</li> <li>• Application of concepts and theories</li> <li>• Insightful, logical reasoning</li> <li>• Documentation, including requisite citations</li> <li>• Usage of the conventions of standard written and spoken English</li> </ul>
<b>E</b>	<b>Unacceptable Academic Work</b>	<p><b>Assessment indicates learning outcomes were not met</b></p>
		<p><b>All course work has not been completed</b></p>
<b>I</b>	<b>Incomplete</b>	<ul style="list-style-type: none"> <li>• One or more assignments have not been completed by the student</li> <li>• The student is currently passing the course</li> <li>• Typical factor for granting an Incomplete is a family emergency or some other unexpected occurrence that prevented submission of required assignment(s)</li> <li>• Awarding of an Incomplete grade is at the discretion of the professor</li> </ul>

## Retaking a Course for Credit

Students who have previously earned grades of “D” or “E” in any course currently offered at Franklin University and who wish to improve their GPA may retake the identical course. Students may register in the normal manner. Upon completion of the repeated course, the previously earned grade will be converted to “DR” or “ER” and cumulative averages only will be recalculated. Neither “DR” nor “ER” grades will be counted in the GPA. The earned grade in the retaken course will be counted in the student’s GPA for the trimester it is retaken. Credit for the course will be given only once.

This policy does not, at any time, supersede the required minimum academic standards for continued enrollment as defined in the Academic Bulletin. Students retaking courses should consult the Financial Aid office to determine the consequences of financial aid or veterans benefits in course retakes.

## Submission and Return Policy

Assignments must be submitted to the professor by 11:59 pm EST on the due date indicated. Assignments may be accepted late but will receive a grade penalty based on the following chart:

Assignment Submission Date	Maximum Grade (% of total possible points)
1 day late	90%
2 days late	80%
3 days late	70%
Greater than 3 days	No Credit

For the COMP, ITEC, WEBD, MIS, ISEC courses, the Submission & Return Policy is as follows:

Assignment Submission Date	Maximum Grade (% of total possible points)
Up to a maximum of 1 week late	75%
More than 1 week late	No credit

The professor, at his/her sole discretion, may choose to amend this policy in certain cases to accommodate extenuating circumstances. Assignments submitted for grading will be returned within 5 days of the due date.

## Grade Reports

Students may view and print grades at <http://www.franklin.edu/myfranklin/>. No grades will be released by telephone.

## Types of Grades\*

Letter Grade	GPA Equivalent
A – Superior	4 points
B – Good	3 points
C – Adequate	2 points
D – Marginal	1 point
E or IE – Unacceptable	0 points
Z – Administrative Withdrawal	0 points

\*For further information about grade codes, please see the [Academic Bulletin](#).

## Object: Class Participation Points



### Class Participation Points

#### Student Content

#### Participation Points

Students' active participation will be assessed according to the following criteria (adapted from the [Foundation for Critical Thinking](#))

- |                      |  |
|----------------------|--|
| <b>Clarity:</b>      | Focus on a specific topic and context, give examples, avoid vague generalities or undefined terms, and help others to understand without any confusion.        |
| <b>Accuracy:</b>     | Give correct information that others can verify; students should acknowledge the limits of their knowledge of the topic.                                       |
| <b>Precision:</b>    | Specific details support all comments.   |
| <b>Relevance:</b>    | Comments connect to the issues currently under discussion and help others to understand those connections.   |
| <b>Depth:</b>        | Address the problem in all its complexity; consider the context of the problem, its root causes, and the other issues it brings up.                            |
| <b>Breadth:</b>      | Address the problem from many points of view; consider how others might understand the problem.  |
| <b>Logic:</b>        | Consider how statements and assumptions work together and communicate them so that others can follow their reasoning.  |
| <b>Significance:</b> | Focus on the most important elements of a topic or elements that others have overlooked; avoid repeating common knowledge.                                     |
| <b>Ethics:</b>       | Students should consider how their statements and actions affect others and judge their own contributions in terms of how they benefit the learning community. |

**Note:** The professor may choose to define and apply alternative participation criteria at his or her discretion.

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## Object: Policies and Services



### Policies and Services

#### Student Content

## Academic Policies

Please follow the links below to find the academic policies that apply to taking courses at Franklin University:

- [Academic Assessment](#)
- [Academic Integrity and Dishonesty](#)
- [Process for Student Concerns](#)
- [Academic Program Requirements](#)

## Student Responsibilities

Please follow the links below to understand what your responsibilities are with regard to taking courses at Franklin University:

- [Communications](#)
- [Time Commitment](#)
- [Attendance Policy](#)
- [Virus Policy](#)
- [General Technology Requirements](#)
- [Student Code of Conduct](#)
- Copyright - Materials used in Franklin University courses may be subject to copyright protection. For more information about copyright law, view the following resources:
  - [Franklin University Library's copyright research guide](#)
  - [Franklin University's Plan to Effectively Combat Copyright Infringement](#)

## Student Support Services

Please follow the links below to learn about the support services available to you at Franklin University:

- Learning Commons in the [Academic Bulletin](#) and on the [Franklin University website](#)
  - Library Services in the [Academic Bulletin](#) and on the [Franklin University website](#)
  - Testing Center in the [Academic Bulletin](#) and on the [Franklin University website](#)
- Disability Services in the [Academic Bulletin](#) and on the [Franklin University website](#)
- [Harassment, Discrimination, and Sexual Misconduct \(Anti-Discrimination Policy\)](#)
- [Family Education Rights and Privacy Act \(FERPA\) Information](#)
- [BlueQuill Zendesk](#), which you can also access using the Help icon at the top right of your screen
- Technology Help Desk Services in the [Academic Bulletin](#) and on the [Franklin University website](#)

## Grading Policy

Please follow the links below to learn about the grading policies for students at Franklin University:

- [Undergraduate Grading Policies](#)
- [Graduate Grading Policies](#)
- [Submission and Return Policy](#)