



SYLLABUS

Name of Institution: Mahidol University International College

Division: Business Administration Division

GENERAL INFORMATION

1. Course Code and Course Title

| | |
|---------|-----------------------------|
| Thai | ICMB 312 วิทยาการจัดการ |
| English | ICMB 312 Management Science |

2. Number of Credits: 4 credits

3. Credit Hours/Semester

| Lecture or Other In-class Activity Hours | Laboratory/ Field Trip/ Internship Hours | Self-Study Hours |
|---|---|------------------|
| 48 | 0 | 96 |

4. Degree: Bachelor of Business Administration

5. Faculty Members:

| | | | |
|------------------|--|--|--|
| Name: | Asst. Prof. Ornlatcha Sivarak, Ph.D. | Asst. Prof. Dolchai La-ornual, Ph.D. | Tanet Kato |
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| Telephone: | 02-700-5000 ext. 4450 | 02-700-5000 ext. 4448 | |
| Office: | Aditayathorn Building 433 | Aditayathorn Building 433 | |
| Office Hours: | Tue & Thu 12:00-14:00 | Mon 14:00-16:00 | Tue & Thu 15:00- 16:00 |

6. Trimester/Academic Year: T2/2020-2021

7. Pre-requisites: ICMB 201 Business Statistics
ICMB 313 Management of Business Information

DESCRIPTION AND OBJECTIVES

1. Course Description

| | |
|---------|---|
| Thai | การประยุกต์เทคนิคการวิเคราะห์เชิงปริมาณโดยใช้เทคนิคของศาสตร์การจัดการเพื่อที่จะแก้ปัญหาเชิงธุรกิจ กำหนดการเชิงเส้น ระบบเครือข่าย การวิเคราะห์การตัดสินใจ การจำลองสถานการณ์ในการแก้ปัญหา |
| English | Application of quantitative analysis using management science techniques to solve business problems. Linear programming, network models, decision analysis, and simulation |

2. Course Objectives

| Course Learning Objective (CLO) | Program Learning Objectives (PLO) |
|---|---|
| CLO1 Students can identify relevant factors and data that is necessary to solve problems and/or improve situations in business using Management Science techniques. | PLG2 Students are able to think critically and to logically arrive at conclusions PLO2.1 Students can identify relevant information to business issues |
| CLO2 Students can develop models using appropriate Management Science techniques to solve problems and/or improve situations in business. | PLO2.2 Students can select appropriate frameworks/ techniques/ methods to analyze business issues |
| CLO3 Students can solve problems and/or improve situations in business using appropriate Management Science techniques. | PLO2.3 Students can arrive at well-reasoned alternatives |
| CLO4 Students can assess the effects of changes in relevant factors and data on problem solutions and/or improvement recommendations in business. | PLG5 Students are able to explain management concepts and to accomplish tasks within a changing business environment PLO5.3 Students can assess changes in a working environment and their impacts |

Note:

Management Science Techniques include optimization, decision analysis, and simulation.

TEACHING AND EVALUATION PLANS

1. Teaching Plan*

| Lessons | Topic | Hours | CLO | Teaching Methods | Assessment | Rubric |
|---------|---|-------|--------|---|--|-----------------|
| 1 | Introduction to Management Science and Spreadsheet Modeling | 4 | | Online blended learning Example 2.3, 2.4 | | To be announced |
| 2 | Introduction to Optimization | 4 | CLO1-4 | Online blended learning Example 3.1, 3.2, 3.3 | | To be announced |
| 3 | Linear Programming | 4 | CLO1-4 | Online blended learning Example 4.2, 4.3, 4.4 | | To be announced |
| 4 | Network Models | 4 | CLO1-4 | Online blended learning Example 5.1, 5.3, 5.4, 5.5 | Assignment 1 CH3P26, 30, 37, 40 CH4P45 | To be announced |
| 5 | Integer Programming | 4 | CLO1-4 | Online blended learning Example 6.1, 6.2, 6.4 | | To be announced |
| 6 | Non-linear Programming | 4 | CLO1-4 | Online blended learning Example 7.1, 7.7, 7.9 | Assignment 2 CH5P43, P65, CH6P61, CH7P46, 63 | To be confirmed |

| Lessons | Topic | Hours | CLO | Teaching Methods | Assessment | Rubric |
|---------|--------------------------------------|-------|--------|--|---|-----------------|
| | | | | | Test #1 (Friday, February 12, 2021, 18:00-19:50) | |
| 7 | Decision Making under Uncertainty I | 4 | CLO1-4 | Online blended learning Example 9.1 | | To be announced |
| 8 | Decision Making under Uncertainty II | 4 | CLO1-4 | Online blended learning Example 9.2, 9.3 | Assignment 3 CH9P33, 48, P51, P54 | To be announced |
| 9 | Introduction to Simulation | 4 | CLO1-4 | Online blended learning Example 10.1, 10.2 | Project Proposal | To be announced |
| 10 | Simulation Models | 4 | CLO1-4 | Online blended learning Example 11.5, 11.9, 11.12 | Assignment 4 CH10P31, P32, CH11P44, P47 Test #2 (Friday, March 12, 2021, 18:00-19:50) | To be confirmed |
| 11 | Application of Management Science | 4 | | Online blended learning | Project Progress | To be announced |

| Lessons | Topic | Hours | CLO | Teaching Methods | Assessment | Rubric |
|---------|-----------------------------------|-------|-----|-------------------------|--|-----------------|
| 12 | Application of Management Science | 4 | | Online blended learning | Project Submission and Presentation (Friday, March 26, 2021) | To be announced |

Evaluation Plan

| Methods/ Activities | Description | Week | Percentage |
|--|-----------------|-------------|------------|
| Attendance/Participation | To be announced | 1-12 | 10% |
| Assignments | To be announced | 4, 6, 8, 10 | 10% |
| Quizzes | To be announced | 1-10 | 10% |
| Tests (2) | To be announced | 6, 10 | 40% |
| Project (Proposal, Progress, Poster, Presentation) | To be announced | 11-12 | 30% |

2. Course Assessment

| A | B+ | B | C+ | C | D+ | D | F |
|--------|-------|-------|-------|-------|-------|-------|-----|
| 90-100 | 85-89 | 80-84 | 75-79 | 70-74 | 65-69 | 60-64 | <60 |

TEACHING MATERIAL AND RESOURCE

Required Reference List

Winston, W. L, & Albright, S. C. (2019). Practical Management Science (6th ed.). Canada: South-Western Cengage Learning. ISBN: 978-1-337-40665-9

COURSE POLICY

Attendance & Participation

Attending class is one of your major responsibilities. Students with **more than 4 absences will not be eligible for grade** unless the solid evidence of the absence is presented. High etiquette during your presence is also expected. Students are expected to come to class on time. Checking attendance at the class starting time (**3 lates = 1 absence**)

Quiz and Exam Format

The quiz and exams will focus on problem solving skills acquired throughout the session from the class lecture and from exercises done by the students themselves from the relevant chapters of the textbook. The quiz and the examination format will feature multiple choice questions and short “free –format” problems. Students are expected to constantly review all the course materials as the quiz can be “pop up”. Students are not allowed to use any textbook or notes during the quiz. There will be NO makeup quizzes regardless of any reason.

Computers/Calculators

Computers, i.e., Microsoft Excel, are required in most of the classes. Students are not allowed to use calculators or smart phones during the quiz and examinations and if use, will be considered as violating the examination according to Mahidol University International College policy.

Academic Dishonesty

Academic dishonesty is prohibited at MUIC. It is a serious offense because it diminishes the quality of scholarship and makes accurate evaluation of student progress impossible. Please refer and adhere to the rules and regulations regarding an academic dishonesty stated in the Student Handbook.

Uniform Policy

A proper dress code is part of the written policy for student conduct, including exchange and visiting students. MUIC is a high-profile institution and it is considered quite an honor to be wearing its uniform. Students are expected to strictly follow the university dress code norms. No cut-off jeans, shorts, mini or short skirts, tank tops or low-cut blouses, flip-flops, rubber or plastic sandals, or house slippers are permitted. If the students neglected to wear the proper uniform, he/she will not be allowed to enter the classroom and will be marked as absent on that day.

ONLINE INSTRUCTIONAL GUIDELINE

I. Technical requirements

- a. Personal computer with video and audio capabilities
- b. Microsoft Office, i.e., Excel with Solver Add-in. (Solver Table, Precision Tree and @Risk will not be used)
- c. Internet connection
- d. @mahidol.edu email account
- e. WebEx (Set your profile name to be “XXXXXXXX Firstname” where XXXXXXXX is your Student ID Number.)

II. Instructional guideline

- a. Joining the classroom – via WebEx
- b. Accessing course material – via MUIC e-learning and/or Canvas.
- c. Submitting class assignments – via MUIC e-learning and/or Canvas.
- d. Taking quiz and examination – via MUIC e-learning and/or Canvas

III. Communication guideline (In accordance with MUIC/MU policies)

IV. Netiquette guideline (In accordance with MUIC/MU policies)

V. Virtual office hours (By appointment via email.)

VI. Assessment of online participation and attendance

Students are expected to participate in all activities as listed.