ATENEO DE MANILA UNIVERSITY
Loyola Schools

SYLLABUS FOR UNDERGRADUATE COURSES
MAJOR, CORE CURRICULUM and ELECTIVES
Students' Copy

A. COURSE INFORMATION

COURSE NUMBER	DECSC 22			**NO. OF UNITS**	3
COURSE TITLE	Introduction to Decision-Making and Management Science				
PREREQUISITE/S	None				
DEPARTMENT/ PROGRAM	Quantitative Methods and Information Technology			**SCHOOL**	JGSOM
SCHOOL YEAR	AY 2023-2024			**SEMESTER**	2
INSTRUCTOR/S	Adriel Jeremy B. Gaw (Section L, N, O) Matthew Laurence A. Uy (Section F) Alyson L. Yap (Section N1)				
VENUE/PLATFORM	SOM 204 SOM 210 CTC 114 SOM 210 CTC 114	**SECTION**	F L N N1 O	**SCHEDULE**	M-TH 1530-1700 T-F 1100-1230 T-F 1400-1530 T-F 1400-1530 T-F 1530-1700

B. COURSE DESCRIPTION

The course introduces the student to rational decision making and the application of mathematical modeling to decision making in various management contexts using a systems thinking approach. Students learn how to do case analysis, simple model construction, and data visualization.

WHERE IS THE COURSE SITUATED WITHIN THE FORMATION STAGES IN THE FRAMEWORK OF THE LOYOLA SCHOOLS CURRICULA	
X	FOUNDATIONS: Exploring and Equipping the Self

	ROOTEDNESS: Investigating and Knowing the World
	DEEPENING: Defining the Self in the World
	LEADERSHIP: Engaging and Transforming the World

C. PROGRAM LEARNING OUTCOMES

Alignment of the Program to the Core Curriculum Learning Outcomes (BS ME)

CORE CURRICULUM LEARNING OUTCOMES	
	CCLO1: Demonstrate effective communication skills (listening and speaking, reading and writing) in English and Filipino.
X	CCLO2: Evaluate information and issues in various spheres of life using mathematical reasoning and statistical tools to process and manage data.
X	CCLO3: Propose ways to address pressing social and ecological problems using appropriate critical approaches and scientific thinking
X	CCLO4: Develop a creative and moral imagination that is responsive to contemporary global realities and challenges, but also deeply rooted in local histories, conditions, norms, and institutions.
	CCLO5: Internalize the significance and value of her/ his unique existence and purpose in life in light of Christian faith.
	CCLO6: Discern life choices with a keen awareness of ethical dilemmas and considerations.
X	CCLO7: Exemplify a commitment to enhancing human life and dignity, especially those who are excluded and in greatest need.
	CCLO8: Practice a vision of leadership and committed citizenship rooted in Christian humanism.

Alignment of the Course to the Program Learning Outcomes (BS ME)

PROGRAM LEARNING OUTCOMES (BS MANAGEMENT ENGINEERING)	
	PLO1: Develop a global perspective for use in nation building.
X	PLO2: Use interdisciplinary, analytical, and sustainable approaches to solving business problems.
	PLO3: Use interdisciplinary, analytical, and sustainable approaches in creating innovative business models.
X	PLO4: Develop technical proficiency in their areas of business concentration or major.

X	PLO4.1: Assess management functions of an organization in an actual or simulated environment to determine sustainable and ethical improvement.
X	PLO4.2: Make use of a systems thinking approach in understanding and analyzing business problems.
X	PLO4.3: Formulate recommendations to identified business problems using various quantitative techniques.
X	PLO4.4: Adopt a data-driven approach with the help of information technology in order to develop innovative solutions.
X	PLO4.5: Manage teams by applying various soft skills related to working effectively in groups in order to achieve the desired goals.
X	PLO5: Show an understanding of how to exercise personal moral and ethical standards.
	PLO6: Demonstrate an understanding of transformative service leadership principles.

D. COURSE LEARNING OUTCOMES

COURSE LEARNING OUTCOMES
CLO1: Understand the building blocks of rational decision making, systems thinking, and sustainability.
CLO2: Analyze and build simple mathematical models of business situations.
CLO3: Solve the mathematical models using spreadsheets and/or other software programs to gain insights.
CLO4: Communicate the results to a targeted decision maker through the use of spreadsheets.
CLO5: Raise ethical concerns that may arise in the management science process.

E. COURSE OUTLINE and LEARNING HOURS

Course Outline	CLOs	Estimated Contact or Learning Hours
Module 1a: Management Science and Decision-Making • Introduction to Management Science	1, 5	5

• The Rational Decision-Making Process		
Module 1b: Introduction to Mathematical Modelling • Principles of Mathematical Modelling • Basic Linear Programming Formulation • Linear Programming Graphical Solution Method • Basic Integer Programming	2, 3	40
Module 2: Basic Information Technology Application Programming • Spreadsheet Tools and Functions • Mathematical Modelling Using Spreadsheets • Basic Data Mining • Basic Data Visualization	2, 3, 4	40

F. ASSESSMENTS AND RUBRICS

Assessment Tasks	Weight	CLOs
Departmental Exams *Tentative Schedule:* *Linear Programming: Week of 4 Mar (30%)* *Excel: Week of 29 Apr (30%)* ***EXAMS WILL BE HELD OUTSIDE CLASS HOURS.*** ***EXAM SCHEDULE IS SUBJECT TO CHANGE BASED ON THE PACE OF THE CLASS. EXAMS MAY BE SCHEDULED UNTIL THE LAST DAY OF THE SEMESTER, AND STUDENTS ARE EXPECTED TO BE AVAILABLE UNTIL THEN.***	60%	All
Course Project *Due 18 May*	30%	All
Class Participation	10%	All

G. TEACHING and LEARNING METHODS

TEACHING & LEARNING METHODS and ACTIVITIES	CLOs
Video Lectures	All
Case Analysis	2, 3, 4, 5
Practice Exercises, Problem Sets	2, 3
Long Tests	2, 3, 4

Course Project	All

H. REQUIRED READINGS

Links and handouts to be given in class.

I. SUGGESTED READINGS

Anderson, D. & Sweeney, D., An Introduction to Management Science: Quantitative Approach to Decision Making, Cengage Learning, 2015.

Hillier, F. & Hillier, M., Introduction to Management Science: A Modelling and Case Studies Approach with Spreadsheets, 6th ed., McGrawHill, 2019.

J. GRADING SYSTEM

All grades given throughout the semester will be numerical. At the end of the semester, each student's weighted average numerical grade will be converted to its corresponding letter grade according to the conversion table below:

Numerical Grade	Letter Grade
92 and above	A
86 to 91	B+
80 to 85	B
74 to 79	C+
67 to 73	C
60 to 66	D
59 and below	F

Additional Notes:

- No automatic rounding of grades will be made, even if the grade is x.999999999.
- No grade solicitations will be entertained.
- Final grades will not be curved.

K. CLASS POLICIES

General Academic Policies

- LS Gender Policy | Ateneo de Manila University
- Code of Decorum and Administrative Rules on Sexual Harassment, Other Forms of Sexual Misconduct, and Inappropriate Behavior | Ateneo de Manila University

Class Communication

- Students may contact the instructor through email. Please do not message us on CANVAS. Kindly give us 2 working days to respond to your messages; if you do not receive a response after that period, you may follow up as we may have missed your message.
- All students are expected to check their email at least once every weekday for announcements. Students are advised to leave notifications on so that they don't miss anything important.

Schedule of Assessments

- Exams are to be taken as scheduled. There will be no make-up exams.
- The schedule of exams may be adjusted depending on unforeseen factors. Students will be informed of any changes in schedule as soon as possible.

Regrading of Assessments

- Students will be given up to 1 week from after assessments are returned to request to have them regraded by the instructor, after which no more requests for regrading will be entertained.
- Students must have a concrete and valid reason for requesting their exam to be regraded.
- The instructor reserves the right to regrade not just the item in question, but the entire assessment, and the student's score may go up or down. All decisions made during regrading are final and irreversible.

Academic Integrity Policy

- Cheating will not be tolerated. Cheating in any requirement will result in grade of F for the entire course, and will be reported to the appropriate authorities, as provided for by the Student Handbook. Duplicated assignments will merit penalties for both the student who copied and the student from whom the work was copied.
- Students are expected to have the utmost respect for intellectual property, and to give credit where credit is due. All resources used for submitted work must be cited properly using any academic format.
- Refer to the Student Handbook for other policies.

Additional Policies

- After due consultation with the students, additional policies may be implemented by the teacher to adapt to the class environment. Students are advised to be aware of such updates.

L. CONSULTATION HOURS

NAME OF FACULTY	EMAIL	DAY/S	TIME
Adriel Jeremy B. Gaw	agaw@ateneo.edu		
Matthew Laurence A. Uy	mluy@ateneo.edu	M-TH	1100-1200
Alyson L. Yap	ayap@ateneo.edu	TF	1000 - 1400

- Consultations should be scheduled at least two working days in advance.
- When setting consultations, students are expected to send a Google Calendar invite to me within one working day of me confirming the appointment. Kindly place the meeting link (whether yours or mine) in the calendar invite. Failure to do so will automatically forfeit the consultation slot.
- Students must inform the instructor ahead of time should they be unable to attend a scheduled consultation.
- Consultations are strictly not allowed during submission or exam days. Likewise, any questions or clarifications regarding course content will not be entertained during submission or exam days.