SYE8205: MANAGERIAL ECONOMICS

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Managerial Economics

Subject Code
SYE - Systems Engineering
Course Number
8205

Academic Unit
Systems Engineering (SYE)

College/School
College of Engineering (EG)

Course Duration
One Semester

Credit Units
3

Level
R8 - Research Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
SEEM8205 Managerial Economics (offered until 2021/22)
ADSE8205 Managerial Economics (offered until 2023/24)

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims to equip students with a necessary conceptual framework for understanding the economic forces at work in firms and markets. It will provide students economic models and tools for managerial decision making. Students will not only learn how supply and demand effect prices but also learn how game theory can be applied in decision-making processes at a strategical level.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Develop the theory of consumer choice and demand under uncertainty and derive optimal dynamic strategies.	10	x	x	
2	Formulate noncooperative games and compute solutions such as Nash equilibrium to these games.	30		x	
3	Apply game theory to analyze the impact of market forces such as supply and demand and price mechanism.	20			x
4	Understand the nature of industry and market structure and apply game theory to develop strategic decisions as well as pricing strategies	20	x	x	
5	Formulate dynamic stochastic games and develop solutions to these games	20		x	x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Introduction and Explanation of Theory and methods through Examples	1, 2, 3, 4, 5	2 hours/week
2	Group Activities	Further Learning Theory from Solving Problems together by Members in a Group	1, 2, 3, 4, 5	1 hour/week

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Participation and Exercises: Students need to participate actively in in-class activities such as class exercises and discussions designed to facilitate their understanding of knowledge and mastering in skills of modelling and problem solving taught in class.	1, 2, 3, 4, 5	20	-	Yes
2	Case Studies & Mini Projects: Students are required to effectively apply knowledge and skills learned from the course in modelling, analyzing and solving some simple practical problems.	1, 2, 3, 4, 5	30	-	Yes

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

30

Additional Information for ATs

Examination:
Students will be assessed via the examination their understanding of concepts and mastering in skills of modelling and problems solving learned in class, textbooks and reading materials and their ability to apply subject-related knowledge

Assessment Rubrics (AR)

Assessment Task

Participation & Exercises (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Submitted solutions to individual assignments.

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Case Studies & Mini Projects (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Submitted group work and presentations.

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Submitted solutions to the final examination.

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Participation & Exercises (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Submitted solutions to individual assignments.

Excellent
(A+, A, A-) Excellent

Good
(B+, B) Good

Marginal
(B-, C+, C) Marginal

Failure
(F) Failure

Assessment Task
Case Studies & Mini Projects (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Submitted group work and presentations.

Excellent
(A+, A, A-) Excellent

Good
(B+, B) Good

Marginal
(B-, C+, C) Marginal

Failure
(F) Failure

Assessment Task
Examination (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Submitted solutions to the final examination.

Excellent

(A+, A, A-) Excellent

Good

(B+, B) Good

Marginal

(B-, C+, C) Marginal

Failure

(F) Failure

Part III Other Information

Keyword Syllabus

- Noncooperative Games
- Nash Equilibrium
- Demand and Supply
- Market Equilibrium Pricing
- Pricing Mechanism
- Stochastic Games

Reading List

Compulsory Readings

	Title
1	A Course in Microeconomic Theory, David M. Kreps

Additional Readings

	Title
1	NIL