



Course Objective and Outcome Form

Department of Electrical and Computer Engineering

School of Engineering and Physical Sciences

North South University, Bashundhara, Dhaka-1229, Bangladesh

1. **Course Number and Title:** EEE 452—Engineering Economics and Management
2. **Number of Credits:** 3
3. **Type:** Required, Lecture
4. **Prerequisites:** None
5. **Contact Hours:** Theory: 3 hours/week
6. **Course Summary:** Time Value of Money and the Mathematics of Finance, Figures of merit (NPV, IRR, BC, etc) in making engineering design and business decisions. After Tax Analysis (ATA) using the income statement format. Risk analysis and assessment. Financial accounting. Focuses on the key aspects of the modern telecommunications and IT sector management, e.g. services engineering, billing, HR, operations, maintenance, planning, customer relations, supply chain, changing technologies, regulation policies, solution engineering, outsourcing, strategy development. Principles of engineering project management.
7. **Course Objectives:** The objectives of this course are to
 1. **interpret** principles of Economics within the context of engineering, technology, and innovation management
 2. **explain** estimation of production function, and **infer** role of technology on Economics of production and functioning of market
 3. **illustrate** technology lifecycle, nature of innovations, innovation diffusion pattern and management decision making to deal with them.
 4. **explain** Telecommunication economics, **relate** network economics, dynamic competition, and regulation, and **interpret** their implications on competition scenario of telecom industry
 5. **explain** economics of design for manufacturing (DFM) and redesign
 6. **explain** the concept of financing such as risk and venture capital financing, time value of money, and intangible asset valuation, and relate them to management of technology and innovation projects.
 7. **illustrate** principles of project management including planning, scheduling and resource allocation, project budgeting and cost control, and contract management.
8. **Course Outcomes (COs):**

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

Sl.	CO Description	Weightage (%)
CO1	interpret principals of economics within the context of engineering, technology and innovation	20%
CO2	explain and infer role of technology on economics of production, and functioning of market	20%
CO3	illustrate basic concepts of technology life cycle, innovation diffusion pattern, innovation management, and economics of design, and principles of engineering project management	30%
CO4	relate network economics, dynamic competition, and regulation to functioning of market of telecommunication, and interpret their implications on real-life competition scenario	15%
CO5	explain concepts of financing technology and innovation, and time value of money in financing engineering projects.	15%

9. Mapping of CO-PO:

Sl.	CO Description	Program Outcome	Bloom's taxonomy domain/level (C: Cognitive P: Psychomotor A: Affective)	Delivery methods and activities	Assessment tools
CO1	interpret principals of economics within the context of engineering, technology and innovation	A,K	C5	Lectures, blog	Quiz, exam, home work
CO2	infer role of technology in economics of production, and functioning of market	A,K	C4	Lectures, blog	Quiz, exam, home work
CO3	illustrate basic concepts of technology life cycle, innovation diffusion pattern, innovation management, and economics of design, and principles of project management	A,K	C2	Lectures, blog	Quiz, exam, home work
CO4	relate network economics, dynamic competition, and regulation to functioning of market of telecommunication and interpret their implications on real-life competition scenario	A,K	C2, C5	Lectures, blog	Quiz, exam, home work
CO5	explain concepts of financing technology and innovation, and time value of money in financing engineering projects	K	C2	Lectures, blog	Quiz, exam, home work

10. Resources

Background books:

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	DAVID A. BESANKO & RONALD R. BRAEUTIGAM	2010	Introduction to MICROECONOMICS	Fourth	JOHN WILEY & SONS, INC.	ISBN 978-0-470-56358-8

Background books:

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	Jeffery Church & Roger Ware	2000	Industrial Organization	First	McGraw-Hill	ISBN 0-256-20571-X

Online resources:

Web site: The WAVES: www.the-waves.org

Website: www.techpolicyviews.com

Blog: <https://techpolicyviews.blogspot.com>

Facebook group: <https://web.facebook.com/groups/TIPviews/>

Financial Express and Daily Star

Twitter: @Dr.Zaman.Rokon

11. Weightage Distribution among Assessment Tools (depending on UGC's instruction for online lectures)

Assessment Tools	Weightage (%)
Class Performance (attendance)	10
Quizzes (4, 3 will be counted)	10
Assignment (?)	10
Midterm (1)	30
Final Exam (1)	40
Lab Work	NA
Term Project	NA

12. Grading policy: As per NSU grading policy available in

<http://www.northsouth.edu/academic/grading-policy.html>

