

Academic Course Description

<p>BHARATH UNIVERSITY Faculty of Engineering and Technology Department of Civil Engineering</p> <p>BCE096 – ENGINEERING ECONOMICS Eight Semesters, 2016-17 (Even Semester)</p>

Course (catalog) description

To impart knowledge on Economics and its importance in the field of Engineering

Compulsory/Elective course : Compulsory for Civil students

Credit / contact hours : 3 credits/ 45 hours

Course Coordinator : Mr.K.Venkatraman, Assistant Professor, Department of Civil Engineering

Instructors :

Name of the instructor	Class handling	Office location	Office phone	Email (domain:@bharathuniv.ac.in)	Consultation
Mr.K.Venkatraman	Final year Civil	Civil Block		kvenkat26@gmail.com	9.00 - 9.50 AM
Ms. K.Kiruthiga	Final year Civil	Civil Block		kiruthiga1992@gmail.com	12.45 - 1.15 PM

Relationship to other courses:

Pre –requisites : Management Concepts For Civil Engineers
Assumed knowledge : Basic knowledge on Economics
Following courses : BCE072 Construction Project Management

Syllabus Contents

UNIT I BASIC CONCEPT

9 hours

Basic economic concept - importance of economics in engineering- economic and Technical decisions demand and supply- factors influencing demand- elasticity of demand - demand forecasting- competition.

UNIT II COST

9 hours

Actual cost and opportunity cost- marginal cost- incremental. costs and sunk cost, fixed and variable cost- short-run long- run cost-cost output relationship- price fixation pricing methods, break even analysis.

UNIT III PROCESS OF MANAGEMENT

9 hours

Nature of management and its process- contribution of Taylor and. Foyal of management Functions and principles of management- types of organizations- organization charts and Manuals - industrial ownership - types, formation, merits, and demerits management by Objective, management by exception and management information system.

UNIT IV PLANNING TECHNIQUES

9 hours

Plant location - factors- decisions- plant layout, types, procedure and techniques material handling principles, equipments and selection- plant maintenance- objective types and techniques

UNIT V PRODUCTION AND ITS APPLICATION

9 hours

Production, productivity, economic growth and standard of living- factors affecting Productivity - role of work study- human factor- method study-objective and procedures- charting and photographic techniques SIMO chart - principles of motion economy-work measurement- stop watch time study- ruling concept and systems- allowances - work sampling.

TEXT BOOKS:

1. Varshney and Maheshwari, Managerial Economics
2. Dewett, Modern Economic Theory

REFERENCE:

1. L.M.Prasad, Principles and Practice of Management, Sultan Chand and Sons.
2. V.P.S.Rao and P.S.Narayana, Principles of Management.

Computer usage: Nil

Professional component

General	-	0%
Basic Sciences	-	0%
Engineering sciences & Technical arts	-	0%
Professional subject	-	100%

Broad area : Economics I planning techniques I production

Test Schedule

S. No.	Test	Tentative Date	Portions	Duration
1	Cycle Test-1	February 1 st week	Session 1 to 14	2 Periods
2	Cycle Test-2	March 2 nd week	Session 15 to 28	2 Periods
3	Model Test	April 2 nd week	Session 1 to 45	3 Hrs
4	University Examination	TBA	All sessions / Units	3 Hrs.

H: high correlation, M: medium correlation, L: low correlation

Mapping of Instructional Objectives with Program Outcome

To impart knowledge on Economics and its importance in the field of Engineering	Correlates to program outcome		
	H	M	L
1. Have knowledge about the importance of Economics and the factors affecting demand and supply	b,g	d	
2. Have a well-founded knowledge about the cost aspects and cost-output relationship	b	i	
3. Acquire skills in assessing functions and principles of management and also the types of organizations	c	f	k
4. Have knowledge about plant layout and its maintenance	b		
5. Have knowledge about the concepts of productivity, economic growth and standard of living	c		

Draft Lecture Schedule

Session	Topics	Problem solving (Yes/No)	Text / Chapter
UNIT I BASIC CONCEPT			
1.	Basic economic concept	No	[T1, R1]
2.	importance of economics in engineering	No	
3.	economic and Technical decisions demand and supply	No	
4.	factors influencing demand	No	
5.	elasticity of demand	No	
6.	demand forecasting	No	
7.	competition	No	
8.	Economic supply	No	
UNIT II COST			
9.	Actual cost	No	[T1, T2, R1]
10.	opportunity cost	No	
11.	marginal cost	No	
12.	incremental. costs	No	
13.	sunk cost	No	
14.	fixed and variable cost	No	
15.	short-run long- run cost	No	
16.	cost output relationship	No	
17.	price fixation pricing methods	No	
18.	break even analysis.	No	
UNIT III PROCESS OF MANAGEMENT			
19.	Nature of management	No	[T1, T2,R2]
20.	process	No	
21.	contribution of Taylor	No	
22.	Foyal of management Functions	No	
23.	principles of management	No	
24.	types of organizations	No	
25.	organization charts	No	
26.	industrial ownership	No	
27.	types management by Objective	No	
28.	Formation management by Objective	No	
29.	merits, and demerits management by Objective	No	
30.	management by exception	No	
31.	management information system	No	
32.	Manuals charts	No	
UNIT IV PLANNING TECHNIQUES			
33.	Plant location - factors	No	[T1,R1]
34.	decisions- plant layout	No	
35.	types, procedure and techniques material handling principles	No	
36.	equipments and selection	No	
37.	plant maintenance	No	
38.	objective types and techniques	No	
UNIT V PRODUCTION AND ITS APPLICATION			
39.	Production, productivity, economic growth and standard of living	No	[T2, R2]
40.	factors affecting Productivity	yes	
41.	role of work study- human factor	yes	
42.	method study-objective and procedures	No	
43.	charting and photographic techniques SIMO chart	No	
44.	principles of motion economy- work measurement- stop watch time study	No	
45.	ruling concept and systems- allowances - work sampling.		

Teaching Strategies

The teaching in this course aims at establishing a good fundamental understanding of the areas covered using:

- Formal face-to-face lectures
- Tutorials, which allow for exercises in problem solving and allow time for students to resolve problems in understanding of lecture material.
- Laboratory sessions, which support the formal lecture material and also provide the student with practical construction, measurement and debugging skills.
- Small periodic quizzes, to enable you to assess your understanding of the concepts.

Evaluation Strategies

Cycle Test – I	-	5%
Cycle Test – II	-	5%
Model Test	-	5%
Attendance	-	10%
Assignment	-	5%
Final exam	-	70%

Prepared by: Mr.K.Venkatraman Assistant Professor , Department of Civil

Dated :

Addendum**ABET Outcomes expected of graduates of B.Tech / Civil / program by the time that they graduate:**

- a. An ability to apply knowledge of mathematics, science, and engineering
- b. An ability to design and conduct experiments, as well as to analyze and interpret data
- c. An ability to design a hardware and software system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- d. An ability to function on multidisciplinary teams
- e. An ability to identify, formulate, and solve engineering problems
- f. An understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- i. A recognition of the need for, and an ability to engage in life-long learning
- j. A knowledge of contemporary issues
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Program Educational Objectives**PEO1: PREPARATION**

Civil Engineering graduates will have knowledge to apply the fundamental principles for a successful profession and/or for higher education in Civil Engineering based on mathematical, scientific and engineering principles, to solve realistic and field problems that arise in engineering and non engineering sectors

PEO2: CORE COMPETENCE

Civil Engineering graduates will adapt to the modern engineering tools and construction methods for planning, design, execution and maintenance of works with sustainable development in their profession.

PEO3: PROFESSIONALISM

Civil Engineering Graduates will exhibit professionalism, ethical attitude, communication and managerial skills, successful team work in various private and government organizations both at the national and international level in their profession and adapt to current trends with lifelong learning.

PEO4: SKILL

Civil Engineering graduates will be trained for developing soft skills such as proficiency in many languages, technical communication, verbal, logical, analytical, comprehension, team building, inter personal relationship, group discussion and leadership skill to become a better professional.

PEO5: ETHICS

Civil Engineering graduates will be installed with ethical feeling, encouraged to make decisions that are safe and environmentally-responsible and also innovative for societal improvement.

Course Teacher	Signature
Mr.K.Venkatraman	
Ms. K.Kiruthiga	

Course Coordinator

HOD/CIVIL