

Academic Course Description

<p>BHARATH UNIVERSITY Faculty of Engineering and Technology Department of Civil Engineering</p> <p>BCE701 Estimation and costing Seventh Semester, 2017 -18 (Odd Semester)</p>

Course (catalog) description

To provide the student with the ability to estimate the quantities of item of works involved in buildings, water supply and sanitary works, road works and irrigation works, and also to equip the student with the ability to do rate analysis, valuation of properties and preparation of reports for estimation of various items.

Compulsory/Elective course : Compulsary for Civil students

Credit / contact hours : 3 credits / 45 hours

Course Coordinator : Mr.S.Vinothkumar, Assistant Professor

Instructors :

Name of the instructor	Class handling	Office location	Office phone	Email (domain:@bharathuniv.ac.in)	Consultation
Mr.T.P.Meikandan	Final year Civil	Civil Block			9.00 - 9.50 AM
Mr.S.Vinothkumar	Final year Civil	Civil Block			12.45 - 1.15 PM

Relationship to other courses:

Pre –requisites : Building Construction

Assumed knowledge : Basic knowledge in Building construction

Following courses : BECE053 Construction Planning ,scheduling and control

Syllabus Contents

UNIT I ESTIMATION

9 Hours

Purpose – Methods of estimation – advantages – types of estimates – detailed estimates of residential buildings – single storied and multistoried buildings – earthwork – foundations – Super structure – Fittings including sanitary and electrical fittings – paintings.

UNIT II SPECIFICATIONS AND TENDERS

9 Hours

Specifications – Detailed and general specifications – construction specifications – sources – types of specifications – Tender notices – types – corrigendum notice – tender procedures – Drafting model tenders

UNIT III CONTRACTS

9 Hours

Contract – types of contracts – formation of contract – contract conditions – contract problems – contract for labor, material, design and construction – drafting of contract documents – construction contracts – arbitration and legal requirements.

UNIT IV RATE ANALYSIS AND PREPARATION OF BILLS**9 Hours**

Data – Rate analysis – abstract estimate – report to accompany estimate – measurement book – bills – types

UNIT V VALUATION**9 Hours**

Basic – Principles of valuation – Value and Cost – value engineering – value analysis – phases in value engineering – information – function – escalation – evaluation – recommendation implementation – Audit

TEXT BOOK:

1. Estimating and costing in Civil Engineering –Dutta B.N & Dutta S UBS Publishers & Distributors Pvt. Company, Lucknow 1986

REFERENCES:

1. Kohli, D.D and Kohli, R.C., “A Text Book of Estimating and Costing (Civil)”, S.Chand & Company Ltd., 2004
2. Birdie G.S. “A text book on estimating and costing” — Dhanpat Rai and Sons, New Delhi.
3. Jagannathan G, Getting more at less cost – The Value Engineering Way, Tata McGraw Hill, New Delhi, 1992.

Computer usage: Nil**Professional component**

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

Broad area : Building Estimation**Test Schedule**

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

Mapping of Instructional Objectives with Program Outcome

This Course is to introduce for calculation of total cost of the buildings or structure by estimation process.	Correlates to program outcome		
	H	M	L
1. Will have a basic knowledge on methods and types of estimation and its merits and demerits	a,e	d,g,j	
2. Have knowledge on specifications and tendering process for contracts		c	
3. Will have the ability to understand the types, formation, terms and conditions in contracts and arbitration	d	a,j	
4. Will have the knowledge of rate analysis of different item of work and MB and bill of quantities	e,g		
5. Will able to value a property, price escalation recommendations and auditing	a,j		

Draft Lecture Schedule

Session	Topics	Problem solving (Yes/No)	Text / Chapter
UNIT I ESTIMATION			
1	Purpose Methods of estimation	No	Text 1
2	Advantages types of estimates	No	
3	Types of estimates	No	
4	Detailed estimates of residential buildings	Yes	
5	Detailed estimates of residential buildings	Yes	
6	Single storied and multistoried buildings earthwork foundations Super structure	Yes	
7	Single storied and multistoried buildings earthwork foundations Super structure	Yes	
8	Fittings including sanitary and electrical fittings paintings.	Yes	
9	Fittings including sanitary and electrical fittings paintings.	Yes	
UNIT II SPECIFICATIONS AND TENDERS			
10	Introduction about Specification	No	Text 1
11	General specifications	No	
12	Detailed general specifications	No	
13	Detailed general specifications	No	
14	Construction specifications	No	
15	Types of specifications	No	
16	Tender notices types	No	
17	Corrigendum notice – tender procedures	No	
18	Drafting model tenders	No	
UNIT III CONTRACTS			
19	Introduction about Contract	No	Text 1
20	Types of contracts	No	
21	formation of contract contract conditions	No	
22	contract problems	No	
23	Contract for labor material	No	
24	Design and construction	No	
25	Drafting of contract documents	No	
26	Construction contracts	No	
27	Arbitration and legal requirements.	No	
UNIT IV RATE ANALYSIS AND PREPARATION OF BILLS			

28	Data Rate analysis	Yes	Text 1
29	Data Rate analysis	Yes	
30	Abstract estimate	No	
31	Abstract estimate	No	
32	Report to accompany estimate	No	
33	Report to accompany estimate	No	
34	Measurement book bills	Yes	
35	Measurement book bills	Yes	
36	Types of bills	No	
UNIT V VALUATION			
37	Basic Principles of valuation	No	Text 1
38	Principles of valuation	No	
39	Value and Cos	No	
40	Value engineering	No	
41	Value analysis	No	
42	Phases in value engineering	No	
43	Information function escalation evaluation	No	
44	Recommendation implementation audit	No	
45	Recommendation implementation audit	No	

Teaching Strategies

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

- Formal face-to-face lectures
- Laboratory sessions, which support the formal lecture material and also provide the student with practical construction, measurement and debugging skills.

Evaluation Strategies

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

Prepared by: Mr.S.Vinothkumar Assistant Professor , Department of Civil

Dated :

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.T.P.Meikandan	
Mr.S.Vinothkumar	

Course Coordinator

HOD/Civil