

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FACULTY OF SCIENCE & TECHNOLOGY
B.TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: VIII	Total Hours Distribution per week		
Total Credit: 03	Lecture (L): 3Hrs	Tutorial/Activity (T/A): 0 Hrs	Practical (P): 0 Hrs
Subject Code	BTCVE 801T	Name of Subject: Construction Method and Equipment Management	
Examination Scheme			
Internal Marks:		University Marks:	Minimum Passing Marks:
30 Marks (15marks for sessional Examination) (15 Marks for Activity based)		70 Marks	45 Marks
			Examination Duration: 3 Hours

Course Objective	
1	To have knowledge about construction industry and construction projects.
2	To know about project organization.
3	To understand construction planning methods.
4	To understand construction labour and equipment management.
5	To have knowledge about construction materials management.

Course Outcome	
After completion of syllabus student able to	
1.	Should have the knowledge about construction industry and construction projects.
2.	Should have knowledge about project organization.
3.	Should have knowledge about construction planning methods.
4.	Should have knowledge about constructionlabour and equipment management.
5.	Should have knowledge about construction materials management.

MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Subject Code & CO NO.												
1	2	3			2		2					3
2	2			2	2	1	2		1			2
3	2			2	2	2	3					3
4	2	3		2	2							3
5	2			3						1	2	3

1 Low

2 Medium

3 High

SYLLABUS

Unit No.1 Construction Industry and Constructions Projects			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Introduction - Types of Construction, Selection of Professional Services, Construction Contractors, Legal and Regulatory Requirements, Changing Environment of the Construction Industry.	04		1
Role, responsibility of projects Manager, Role of PMC (Project Management Consultants) on major projects. Various construction Equipment's with its Advantages, Disadvantages and its Use	02		1
Importance of construction industry, Phases of a construction project, participants or stakeholders of a construction project.	02		1
	08		
Unit No.2 Project Organization			
	Allotment of Hours		Mapped with CO

Details of Topic			Number
	L	T/A	CO
Construction company, forms of business organization, structure of construction organization	02		2
organizing for project management, management levels, traits of a project manager	02		2
Traits of a project co-ordinator, ethical conduct for engineers, factors behind the success of a construction organization	03		
	07		
Unit No.3 Construction Planning			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Work break down structure, Planning Techniques- terminologies used, bar charts, Milestone charts, preparation of network diagrams	02		3
Activity cost and time estimation in PERT and CPM techniques, Line of Balance Technique, network technique advantages.	003		3
Precedence Network Analysis, software's in Construction scheduling (MSP, primavera).	02		3
	07		
Unit No.4 Construction Labour and Equipment Management			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Need for legislation, Acts regarding fixing terms of employment, Acts regarding providing proper working conditions.	02		4
Acts regarding social security, need for mechanization, financial aspects of construction plants and equipments.	02		4
factors affecting selection of construction equipments, planning of construction equipments, factors affecting the cost of owning and operating the construction equipments.	03		

	07		
Unit No.5 Construction Materials Management			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Importance of material management and its role in construction industry, material management functions, Material Procurement Process in construction organization, inventory management.	03		5
inventory related costs, functions of inventory, ABC analysis, Economic Order Quantity Model, I	03		5
Integrated approach to materials management, Role of materials manager.	01		
	07		

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference book
1,2	Scheduling Construction Projects, John Wiley & Sons, 1986. CN7204	Willis, E. M.			√		
4	Civil Engineering Contracts and Estimates - Universities Press	B. S. Patil –					√
1,2,4	The Indian Contract Act (9 of 1872), 1872- Bare Act- 2006 edition, Professional				√		

	Book						
1,2,5	Law of contract Part I and Part II, Dr. 2005 Edition, Allahabad Law Agency	R.K. Bangia-					√

Shri...
Curator, L. Bhande.

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 (Dr. Avinash N Shrikhande,
 BOS (Govt Engg) chairman

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 (Dr. A.N. Dabhade)
 BOS Member

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Sem: VIII	Total Hours Distribution per week		
Total Credit:03	Lecture (L): 3Hrs	Tutorial/Activity (T/A): 0 Hrs	Practical (P): 0 Hrs
Subject Code:	BTCVE802T	Name of Subject: Digital Land Surveying & Mapping	
Examination Scheme			
Internal Marks:		University Marks:	Minimum Passing Marks:
30 Marks (15 Marks for sessional examination) (15 Marks for Activity based)		70 Marks	45 Marks
		Examination Duration:	3 Hours

Course Objective	
1	To introduce digital land surveying and its application
2	To provide basics of digital surveying and mapping of earth surface using total station, GPS and mapping software.

Course Outcome	
After completion of syllabus student able to	
1	Know the basics of digital land surveying and its applications.
2	Handle the GPS for surveying and plot the details on map.
3	Know the use of DGPS and its applications and advantages.
4	Use total station for land surveying and plotting the details.
5	Use advance software for mapping.

MAPPING OF CO WITH PO

CO/PO	PO 1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO8	PO 9	PO10	PO1 1	PO1 2
Subject Code & CO NO.												
CO1	1	--	--	--	1	--	--	--	1	--	--	1
CO2	2	1	2	--	3	-	--	--	1	--	--	1
CO3	2	1	2	--	3	--	--	--	1	--	--	1
CO4	2	1	2	--	3	--	--	--	1	--	--	1
CO5	2	1	2	--	3	---	--	1	1	2	--	2

1 Low

2 Medium

3 High

SYLLABUS

Unit No.1 INTRODUCTION TO SURVEYING			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Overview of general survey: Introduction , Need , Application and Types	02		1
Overview of digital land survey:- Introduction, Establishment of control points.	03		1
Introduction to advanced digital surveying methods.	03		1
	08		
Unit No.2 GPS			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Introduction , components	01		2
GPS signals: Introduction , GPS signals , GPS user segment: Introduction, GPS Receiver code receiver , frequency receiver	02		2
GPS software – Field software , office software	02		2
GPS data collection and processing , ERRORS IN GPS	03		2

OBSERVATION			
	08		
Unit No.3 DGPS and Data processing			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Introduction to Differential GPS	02		3
DGPS data application and Processing	03		3
DGPS control station and loop closure technique	03		3
	08		
Unit No.4 TOTAL STATION			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Introduction, parts , accessories and setting of total station	02		4
Measurements of distance , horizontal angle, vertical angle and height, Contouring and mapping	03		4
Errors in Total station , errors and error propagations and survey specification	03		4
	08		
Unit No.5 MAPPING			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Mapping fundamentals , basics	02		5
Mapping software and Automated Mapping	02		5
Working steps and establishment of control point	02		5
Detailing of digital surveying	02		5
	08		

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference book
1 to V	Digital Land Surveying and Mapping	P.K.Garg	New Age International Publisher		Y		
II, IV	Advanced Surveying: Total Station, GPS, GIS & Remote Sensing	GopiSatheesh, R.Sathikumar, N Madhu	Pearson	2017	Y		

Signature
Cluster 4, Pune.

Signature
(Dr. Avinash N Shrikhande,
BOS (Civil Engg) chairman

Signature
(Dr. A.N. Dabhade)
BOS Member

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Sem: VIII	Total Hours Distribution per week		
Total Credit:	Lecture (L):00 Hrs.	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): 12 Hrs.
Subject Code	BTCVE804P	Name of Subject: Project Work Phase-II	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
100 Marks	100 Marks	100 Marks	--

Course Objective

1	The object of Project Work II & Dissertation is to enable the student to extend further the investigative study taken up under Project Phase-I, either fully theoretical/practical or involving both theoretical and practical work, under the guidance of a Supervisor from the Department alone or jointly with a Supervisor drawn from R&D laboratory/Industry.
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Course Outcome

After completion of syllabus student able to	
1	Analyze or Design the Civil Engineering problems by using appreciate methodology in a team work.
2	Interpret the communication skills of team members
3	Use of Modern tools in the field of Civil Engineering

MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BECVE507P1					3				2	2		1
BECVE507P2					3				2	2		1
BECVE507P3					3				2	2		1

1 Low

2 Medium

3 High

SYLLABUS

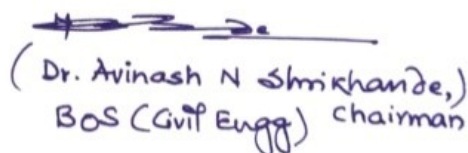
In continuation to semester VII work, the group of the students shall collect all necessary information pertaining to the project and analyses it. The group of the students shall prepare and submit a detailed report on the project.

The report shall be type written on A4 size papers and hard bound as per prescribed norms.

Broadly the report shall include: Introduction, Literature Review, Problem definition, Data collection and analysis, Results (Numerical / Experimental), Conclusions and discussions.

Acquaintance with survey and research methods and their use in conducting systematic investigations, use of data analysis tools, computational methods and style of report, preparation and presentation shall form basis of evaluation. The group shall prepare and present a seminar based on this work before an external examiner.


Chandan G. Shinde


(Dr. Avinash N. Shrikhande,
BOS (Civil Engg) chairman


(Dr. A.N. Dabhadre)
BOS Member