ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
ವಿಟಿಯುಅಧಿನಿಯಮ೧೯೯೪ರಅಡಿಯಲ್ಲಿಕರ್ನಾಟಕಸರ್ಕಾರದಿಂದಸ್ಥಾಪಿತವಾದರಾಜ್ಯವಿಶ್ವವಿದ್ಯಾಲಯ
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
State University of Government of Karnataka Established as per the VTU Act, 1994"JnanaSangama" Belagavi-590018, Karnataka, India

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REGISTRAR

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REF: VTU/BGM/BAGL606/704/2024-25/ 5765

DATE: 11 FEB 2025

CIRCULAR

Subject: New Professional Elective Course added to 1st semester M.Tech., programs of all civil engineering stream regarding...

Reference:

- The Chairperson BoS in CV for PG program email dated 10.02.2025
- The Hon'ble Vice-Chancellor's approval dated: 11.02.2025

Sir/ Madam,

As part of the curriculum enhancement for the PG 2024 scheme, the chairperson Board of Studies in Civil Engineering for postgraduate programs has added the one course MCV115E- Comprehensive Project Report Development to professional elective courses-II group.

The same has been uploaded on the VTU web portal for stakeholder's reference and use.

All the principals of engineering college and Chairperson/program coordinators of university departments, where the postgraduate program in civil engineering stream has been offered are informed to bring the content of the circular and syllabus to the notice of all concerned

Encl: MCV115E syllabus

11/02/25

REGISTRAR

To,

- **The Principals of Engineering Colleges under the ambit of the university.**
- **The Chairperson/Program coordinator, university department at Kalaburgi, Belagavi, Mysuru and Bengaluru**

Copy to:

- The Registrar (Evaluation) VTU Belagavi for information and needful
- The Special Officer, QPDS VTU Belagavi for information and needful
- The Director, ITI SMU VTU Belagavi for information and to make arrangements to upload the syllabus on the VTU web portal
- Office Copy

Comprehensive Project Report Development			
Course Code	**MCV115E**	**CIE Marks**	**50**
Teaching Hours/Week (L:P:SDA)	**2:0:2**	**CIE Marks**	**50**
Total Hours of Pedagogy	**40 Hours Theory + 10-12 Hours T/SDA**	**Total Marks**	**100**
Credits	**3**	**Exam Hours**	**03**

Course learning objectives: This course will enable students to

- Prepare project report for new and up-gradation type civil and infrastructure works by conducting necessary feasibility/detailed studies.
- Perform various project related studies helping to finalize the project preparations and methods of forecasting.
- Conduct the material investigations to understand their behavior and performance.
- Understand various risks and Uncertainties involved in construction
- Analyze the social impact of civil and infrastructure projects and also determines the economic feasibility analysis for justification of investments.
- Prepare DPR on civil and infrastructure projects with relevant drawings and get the knowledge of tendering process for the construction.

Module-1

Introduction: Project overview, scope objectives, various steps of preparation and execution of projects. Objectives and scope of pre – feasibility, feasibility and detailed studies for project preparation. Typical HR structure for preparations and implementation of civil and infrastructure projects, Key Acts related to civil and infrastructure Projects.

Teaching-Learning Process	**1. Blackboard teaching/PowerPoint presentations (if needed).** **2. Regular review of students by asking questions based on topics covered in the class.** **3. Compliment the understanding of case studies.** **4. Engage in making mind maps of DPR reports**

Module-2

Topographic surveys and investigations: for finalization of horizontal alignment and vertical profile of projects, Application of GIS. Soil and other Material surveys and investigations for availability and choice of basic and alternate materials for constructions and for soil stabilization, drainage surveys, Interpretation of survey results.

Teaching –Learning Process	**1. Blackboard teaching / PowerPoint presentations (if needed)** **2. Regular review of students by asking questions based on topics covered in the class.** **3. Compliment the understanding of surveys by field demos.** **4. Plan for site visits for students, where pavement construction is going on.** **5. Engage in conduction of traffic surveys and reporting..**

Module-3

Environmental Impact Assessment: Objectives, procedure of environmental impact assessment, socio economic survey, mitigation measures, implementation of environment management plan, Key environmental legislations, clearances required for civil engineering-environmental, forest, CRZ, wildlife, air, noise quality standards

Teaching-Learning Process	**1. Blackboard teaching/PowerPoint presentations (if needed).** **2. Regular review of students by asking questions based on topics covered in the class.** **3. Compliment the understanding by discussing case studies.**

Module-4

Cost Estimation and Financial Analysis: Cost estimation methods and techniques, Financial analysis and viability, Project funding options and financing plan, Risk assessment and mitigation strategies, Public Private Partnership (PPP), environmental economics, economic viability PPP projects, case studies.

Rate Analysis: Prerequisites, factors affecting rate analysis, overhead expenses, procedure for rate analysis,

schedule of rates, Task work: labour requirement for different works, material requirement for different works, Rate analysis of different Items of work.	
Teaching-Learning Process	1. Black board teaching/PowerPoint presentations (if needed). 2. Regular review of students by asking questions based on topics covered in the class. 3. Solve problems and work out rate analysis for typical projects
Module-5	
Preparation of DPR design details, estimates, BOQ, drawings and detailed project, report, use of software, Tendering process -Preparation of tender documents for different types of civil engineering projects, Tender evaluation. Salient clauses of tender document, tender evaluation–technical and Financial. Implementation and Monitoring: Construction methodologies and techniques, Quality control and assurance measures, Safety management plans, Monitoring progress and performance metrics, Reporting and documentation procedures.	
Teaching-Learning Process	1. Black board teaching/PowerPoint presentations (if needed). 2. Regular review of students by asking questions based on topics covered in the class. 3. Compliment the understanding by discussing case studies.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

1. Two Unit Tests each of 25 Marks
2. Two assignments each of 25 Marks or one Skill Development Activity of 50 marksto attain the COs and POs

The sum of two tests, two assignments/skill Development Activities, will be scaled down to 50 marks

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester-End Examination:

1. The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
2. The question paper will have ten full questions carrying equal marks.
3. Each full question is for 20 marks. There will be two full questions (with a maximum of four sub-questions) from each module.
4. Each full question will have a sub-question covering all the topics under a module.
5. The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Text Books:

1. L.R. Kadyali, N.B. Lal, "Principles and Practices of Highway Engineering," Khanna Publishers.
2. Edwards, John et al., 1983, "Manpower Planning," John Wiley, New York.
3. "Project Scheduling and Management for Construction" by Chopra and Mehta.
4. "Environmental Impact Assessment: Theory and Practice" by Peter Morris and R. Keith Therivel.
5. "Monitoring and Evaluation of Projects" by M. A. A. Rahman.

Reference Books:

- **IRC:SP: 19-2001**, Manual for Survey, Investigation and Preparation of Road Projects (first revision), Indian Roads Congress.
- **IRC:SP: 30-1993**, Manual on Economic Evaluation of Highway Projects in India (first revision), Indian Roads Congress.
- **IRCSP–38**,"Manual for Road Investment Decision Model"-1992,Indian Roads Congress
- **IS 15883 (Part 1): 2009** - Guidelines for preparing Detailed Project Reports for infrastructure projects.
- **IS 1892: 1979** - Code of practice for subsurface investigation for foundations.
- **IS 13366: 1992** - Code of practice for the investigation of soil for civil engineering works.
- **IS 6263: 1971** - Code for soil exploration
- **IS 6420: 1978** - Code of practice for construction scheduling.
- **IS 3348: 1981** - Guide for scheduling of construction activities.
- "Handbook of Construction Management" by V. P. R. S. Ramachandran
- **NBC (National Building Code) of India** - Provides guidelines for building design and construction
- **IS 14750: 2000** - Guidelines for the implementation of quality management systems in construction..

Web links and Video Lectures (e-Resources):

https://www.youtube.com/channel/UC5fUyyuRnwi7H4DPXUwW4sg

Skill Development Activities Suggested

- Prepare the BOQ of minor and major projects and compare the cost.
- Prepare Excel sheets for growth factor estimation as per IRC: 105-2015.
- Carry out the traffic studies specific to a project and infer from the data collected.
- Prepare mind maps after studying various DPRs for civil and infrastructure projects to understand the various stages of DPR preparation.

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl.No.	Description	Blooms Level
CO1	Prepare project reports for new and up-gradation type road works by conducting necessary feasibility/detailed studies.	L3
CO2	Conduct the soil and material investigations to understand their behavior and performance	L2
CO3	Understand various risks and Uncertainties involved in construction	L3
CO4	Understand the contract document, evaluation, and contract management for civil and infrastructure projects. Analyze the social impact of civil and infrastructure projects and also determines the economic feasibility analysis for justification of investments.	L2, L4
CO5	Prepare DPR (Detailed Project Report) on civil projects with relevant drawings and gain knowledge of the tendering process for construction.	L6

Mapping of COs and Pos

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	X	X					X	X	X
CO2	X	X	X					X	X
CO3	X	X	X	X		X			
CO4	X	X	X		X	X			
CO5	X	X	X			X	X		X