



**TEERTHANKER
MAHAVEER UNIVERSITY**
Accredited with NAAC A Grade
12-B Status from UGC

FACULTY OF ENGINEERING
(AICTE Approved & Established under Govt of U.P. Act No.30, 2008)
CIVIL ENGINEERING DEPARTMENT

**DEPARTMENT OF CIVIL ENGINEERING
BOARD OF STUDIES MEETING**

MINUTES OF THE MEETING OF BoS OF CIVIL ENGINEERING DEPARTMENT HELD ON JULY 14, 2023 AT 10:30HRS

VENUE: OFFICE OF THE HEAD OF THE DEPARTMENT

Agenda Points:

1. Presentation and discussion on revision in the syllabus/curriculum of Bachelor of Technology (Civil Engineering) and Diploma in Civil Engineering for the session 2023-24
2. Presentation and discussion on Short Term Training Programme (STTP) for 2023-24

Level of the program: UG and Diploma

Name of the programme: Bachelor of Technology (Civil Engineering) and Diploma in Civil Engineering

The BoS meeting of Civil Engineering Department was held on July 14, 2023 and the following members were present in the meeting:

| S. No. | External Expert/Chairperson/Faculty | Designation |
|--------|-------------------------------------|--|
| 1 | Prof. S.S. Gupta | Professor/External Expert |
| 2 | Mr. A.K. Pipersenia | Head of the Department/ Chairperson |
| 3 | Dr. Vipin Kumar | Associate Professor/Member nominated by Director |
| 4 | Prof. R.K. Jain | Professor & Member |
| 5 | Dr. Ashish Simalti | Assistant Professor/Member |
| 6 | Mr. Siddharth Mathur | Assistant Professor/Member |
| 7 | Mr. Ankit Varshney | Assistant Professor/Member |
| 8 | Mr. Amit Kumar | Assistant Professor/Member |
| 9 | Ms. Nikita Jain | Assistant Professor/Member |
| 10 | Ms. Nisha Sahal | Assistant Professor/Member |



The chairperson welcomed the members for the meeting of BoS and the following points were discussed:

Agenda 1: Presentation and discussion on revision in the syllabus/curriculum of Bachelor of Technology (Civil Engineering) and Diploma in Civil Engineering for the session 2023-24

1. The syllabus of B.Tech (Civil Engineering) was presented. Some minor modifications in the curriculum of B.Tech (Civil Engineering) has been discussed and ratified. These changes are less than 20 %. The details of the changes are made in the following courses:

| S.No. | Name & Code of the Courses | Deletion | Addition | Other Changes (Minor Changes) |
|-------|--|---------------------|--|---|
| 1 | ECE362 Building Planning and Drawing using CAD (Lab) | | New AutoCAD commands were added session wise | |
| 2 | ECE412 Mechanics of Solids | Deflection of Beams | Columns and Struts | Course Outcomes modified |
| 3 | ECE613 Structural Analysis-II | | | Credit changed from 3 to 4 with addition of a Tutorial |
| 4 | ECE711 Advanced Computer Aided Design (CAD) | | | This course has been shifted to Programme Elective II from the mandatory core course. |
| 5 | ECE719 Earthquake Resistant Structures | | | This course has been shifted to the mandatory core course from Programme Elective II |
| 6 | 1. ECE731 Principle of Management 2. ECE732 Industrial Sociology 3. ECE733 Engineering and Managerial Economics 4. ECE734 Solid and Hazardous Waste Management 5. ECE735 Disaster Management | | | These are courses under Programme Elective III (Management). Their total credits reduced from 4 to 3. |

(Annexure-01)



**TEERTHANKER
MAHAVEER UNIVERSITY**

Accredited with NAAC A Grade

12-B Status from UGC

FACULTY OF ENGINEERING

(AICTE Approved & Established under Govt of U.P. Act No.30, 2008)

CIVIL ENGINEERING DEPARTMENT

2. The syllabus of Diploma in Civil Engineering was presented and discussed. The following modifications were suggested and ratified:

| S. No | Name & code of the courses added | Name & code of the courses deleted | Name & code of the courses where revision is more than 20% | Name of the stakeholder from where the inputs have been received | Need/rationale to justify the revision |
|-------|---|---|--|--|---|
| 5 | Civil Engineering Drawing-I (DCE558), | Civil Engineering Drawing-I (DCE557), | Civil Engineering Drawing-I (DCE557)-This Course is recoded as Civil Engineering Drawing- I (DCE558) | Students Faculty Alumina Professional Employers | 1. Need to upgrade as per Industry demand and requirement. 2. Skill Upgradation as per the new market requirement. |
| 2 | Transportation Engineering-I (DCE 511) | Transportation Engineering-I (DCE 501) | Transportation Engineering-I (DCE 501). This Course is recoded as (DCE 511) | | |
| 3 | Transportation Engineering-II (DCE 607) | Transportation Engineering-II (DCE 603) | Transportation Engineering-II (DCE 603). This Course is recoded as (DCE 607) | | |

Minor changes:

| S.No. | Name & Code of the Courses | Deletion | Addition | Other Changes (Minor Changes) |
|-------|------------------------------|----------|----------|-------------------------------|
| 1 | DME301 Strength of Materials | | | Rearrangement of topics |

(Annexure-02)



**TEERTHANKER
MAHAVEER UNIVERSITY**
Moradabad
Accredited with NAAC A Grade
12-B Status from UGC

FACULTY OF ENGINEERING
(AICTE Approved & Established under Govt of U.P. Act No.30, 2008)
CIVIL ENGINEERING DEPARTMENT

Agenda 2: Presentation and discussion on Short Term Training Programme (STTP) for 2023-24

Civil Engineering Department is going to start a new Short Term Training Programme (STTP) from July 17, 2023. The topic of the STTP is "Ultra High-Performance Concrete". The schedule and the session plan were presented and discussed. After discussion the programme has been ratified.

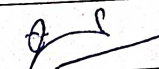
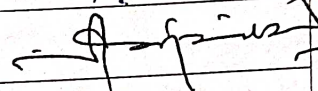

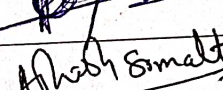
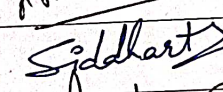
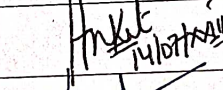
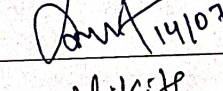

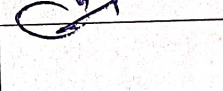
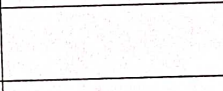
(Annexure-03)

The meeting ended with a note of thanks.

Faculty of Engineering Attendance Sheet for BoS

Date: 14-07-2023

Department of Civil Engineering Attendance Sheet

| S. No. | External Expert/Chairperson/Faculty | Designation | Signature |
|--------|--|---|---|
| 1 | Prof. S.S. Gupta | Professor/External Expert |  |
| 2 | Mr.A.K. Pipersenia | Head of the Department/ Chairman |  |
| 3 | Dr. Vipin Kumar | Associate Professor/Member nominated by Director |  |
| 4 | Prof. R.K. Jain | Professor & Member |  |
| 5 | Dr. Ashish Simalti | Assistant Professor/Member |  |
| 6 | Mr. Siddharth Mathur | Assistant Professor/Member |  |
| 7 | Mr. Ankit Varshney | Assistant Professor/Member |  |
| 8 | Mr. Amit Kumar | Assistant Professor/Member |  |
| 9 | Ms. Nikita Jain | Assistant Professor/Member |  |
| 10 | Ms. Nisha Sahal | Assistant Professor/Member |  |
| | | | |
| | | | |
| | | | |



Faculty of Engineering

Teerthanker Mahaveer University

Moradabad, Uttar Pradesh

Civil Engineering Department organizes

Short Term Training Programme

On "Ultra High Performance Concrete"

During July 17 to 1 August, 2022

Title: Short Term Training Program (STTP) on Ultra High Performance of Concrete.

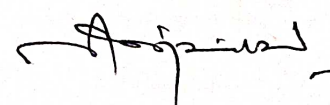
Course Description: The Short Term Training Program on Ultra High Performance of Concrete is designed to provide participants with comprehensive knowledge and practical skills in the field of ultra-high performance concrete. The program aims to enhance the understanding of participants in areas such as material composition, mix design, testing procedures, construction techniques, and applications of ultra-high performance concrete.

Ultra High Performance Concrete (UHPC) in Trend: Ultra High Performance Concrete has gained significant popularity in recent years due to its exceptional mechanical properties, durability, and aesthetic potential. The use of UHPC offers numerous advantages in various construction applications, including high-rise buildings, bridges, precast elements, and infrastructure projects. Its unique combination of high strength, enhanced durability, and improved workability allows for innovative designs, reduced material consumption, and extended service life. As sustainable and resilient construction practices continue to gain importance, UHPC has emerged as a cutting-edge material with immense potential in the construction industry.

The Short-Term Training Program on Ultra High Performance of Concrete is designed to provide participants with comprehensive knowledge and practical skills in the field of ultra-high-performance concrete. The program aims to enhance the understanding of participants in areas such as material composition, mix design, testing procedures, construction techniques, and applications of ultra-high-performance concrete. The program is valid for both online and offline modes, allowing participants to choose the mode that suits their convenience.

Schedule:**Duration: 17/07/2023 to 09/08/2023 (excluding Sundays)**

| Date | Time | Session | Guest Lecturer/Faculty Member |
|------------|-------------|-----------------------------------|-------------------------------|
| 17/07/2023 | 09:00-10:30 | Introduction to UHPC | Dr R.K Jain |
| | 10:45-12:30 | Material Selection and Properties | Dr R.K Jain |
| 18/07/2023 | 09:00-11:45 | Mix Design and Proportioning | Mr Amit Kumar |
| | 11:45-12:30 | Reinforcement in UHPC | Mr Arun Kumar Pipersenia |
| 19/07/2023 | 09:00-10:30 | Testing and Quality Control | Mr Arun Kumar Pipersenia |
| | 10:45-12:30 | UHPC in Structural Applications | Mr Amit Kumar |
| 20/07/2023 | 09:00-10:30 | Case Studies and Best Practices | Mr Asish Simalti |
| | 10:45-12:30 | Open Discussion and Q&A | Mr Ashish Simalti |
| 21/07/2023 | 09:00-12:30 | Practical Demonstration | Mr Ashish Simalti |
| 24/07/2023 | 09:00-10:30 | UHPC Manufacturing Techniques | Ms Nisha Sahal |
| | 10:45-12:30 | Advanced UHPC Applications | Ms Nisha Sahal |
| 25/07/2023 | 09:00-10:30 | UHPC in Precast Concrete | Mr Ankit Varshney |
| | 10:45-12:30 | UHPC in Infrastructure Projects | Mr Ankit Varshney |
| 26/07/2023 | 09:00-10:30 | UHPC in Sustainable Construction | Ms Nikita Jain |
| | 10:45-12:30 | UHPC in Architectural Design | Ms Nikita Jain |



| | | | |
|------------|-------------|-----------------------------------|--------------------------|
| 27/07/2023 | 09:00-10:30 | UHPC in Repair and Rehabilitation | Ms Nikita Garg |
| | 10:45-12:30 | UHPC in Seismic Applications | Mr Arun Kumar Pipersenia |
| 28/07/2023 | 09:00-12:30 | Practical Workshop | Mr Amit Kumar |
| 31/07/2023 | 09:00-10:30 | UHPC in Bridge Construction | Dr R.K JAIN |
| | 10:45-12:30 | UHPC in High-Rise Buildings | Ms Nisha Sahal |
| 01/08/2023 | 09:00-10:30 | UHPC in Marine Structures | Mr Ankit varshney |

Fee required –Rs 1000/ 57 hour course/Student

Rs 2000/ 57 hour course/Person (industry)

- UPI ID - amikmr514@okicici

BHIM UPI id - 7018823238@upi

Registration link – https://docs.google.com/forms/d/e/1FAIpQLSdOaRgRg_UVAJDTuX8kBP9ZRvUcpIxn4Jk7631LX03PzThzw/viewform?usp=sharing

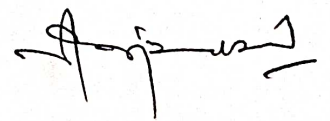
Committee Member

Mr Arun Kumar Pipersania (HOD)

Dr R.K Jain (Coordinator)

Mr. Amit Kumar (Co-Coordinator)

Mr Ankit Varshney (Member)



Study & Evaluation Scheme

ANNETURE-D1

Semester I

| S. No | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|-------|----------|-------------|-------------------------------------|---------|---|----|--------|-------------------|----------|-------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | BSC-1 | EAS116 | Engineering Mathematics-I | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 2 | BSC-2 | EAS112/212 | Engineering Physics | 3 | 1 | - | 4 | 40 | 60 | 100 |
| | | EAS113/213 | Engineering Chemistry | | | | | | | |
| 3 | ESC-1 | EEE117/217 | Basic Electrical Engineering | 3 | 1 | - | 4 | 40 | 60 | 100 |
| | | EEC111/211 | Basic Electronics Engineering | | | | | | | |
| 4 | AECC-1 | TMU101 | Environmental Studies | 2 | 1 | - | 3 | 40 | 60 | 100 |
| 5 | AECC-2 | TGE103 | English Communication- I | 1 | - | 2 | 2 | 40 | 60 | 100 |
| 6 | LC-1 | EAS162/262 | Engineering Physics (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| | | EAS163/263 | Engineering Chemistry (Lab) | | | | | | | |
| 7 | LC-2 | EEE161/261 | Basic Electrical Engineering (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| | | EEC161/261 | Basic Electronics Engineering (Lab) | | | | | | | |
| 8 | LC-3 | EME161/261 | Engineering Drawing (Lab) | - | - | 4 | 2 | 50 | 50 | 100 |
| | | EME162/262 | Workshop Practice (Lab) | | | | | | | |
| 9 | DGP-1 | EGP111 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| Total | | | | 12 | 4 | 10 | 21 | 450 | 450 | 900 |

Signature

Semester II

| S. No | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|-------|----------|-------------|--|-----------|----------|-----------|-----------|-------------------|------------|-------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | BSC-3 | EAS211 | Engineering Mathematics-II | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 2 | BSC-4 | EAS212/112 | Engineering Physics | 3 | 1 | - | 4 | 40 | 60 | 100 |
| | | EAS213/113 | Engineering Chemistry | | | | | | | |
| 3 | ESC-2 | EEE217/117 | Basic Electrical Engineering | 3 | 1 | - | 4 | 40 | 60 | 100 |
| | | EEC211/111 | Basic Electronics Engineering | | | | | | | |
| 4 | ESC-3 | ECS212 | Computer System & Programming in C++ | 3 | - | - | 3 | 40 | 60 | 100 |
| 5 | AECC-3 | TGE203 | English Communication- II | 1 | - | 2 | 2 | 40 | 60 | 100 |
| 6 | LC-4 | EAS262/162 | Engineering Physics (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| | | EAS263/163 | Engineering Chemistry (Lab) | | | | | | | |
| 7 | LC-5 | EEE261/161 | Basic Electrical Engineering (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| | | EEC261/161 | Basic Electronics Engineering (Lab) | | | | | | | |
| 8 | LC-6 | ECS262 | Computer System & Programming in C++ (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 9 | LC-7 | EME261/161 | Engineering Drawing (Lab) | - | - | 4 | 2 | 50 | 50 | 100 |
| | | EME262/162 | Workshop Practice (Lab) | | | | | | | |
| 10 | DGP-2 | EGP211 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| | | | Total | 13 | 3 | 12 | 22 | 500 | 500 | 1000 |

B.Tech. (Civil Engineering)-Semester III

| S. No | Category | Course Code | Course | Periods | | | Evaluation Scheme | | | |
|-------|----------|-------------|---|---------|---|----|-------------------|----------|----------|-------|
| | | | | L | T | P | Credit | Internal | External | Total |
| 1 | PCC-1 | ECE311 | Fluid Mechanics | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 2 | PCC-2 | ECE312 | Surveying | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 3 | PCC-3 | ECE313 | Building Materials & Construction | 3 | - | - | 3 | 40 | 60 | 100 |
| 4 | PCC-4 | ECE314 | Concrete Technology | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 5 | ESC-4 | EME311 | Engineering Mechanics | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 6 | LC-8 | ECE360 | Surveying (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 7 | LC-9 | ECE361 | Fluid Mechanics (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 8 | LC-10 | ECE362 | Building Planning and Drawing using CAD (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 9 | LC-11 | ECE363 | Materials Testing (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 10 | SEC-1 | TGC307 | Foundation in Quantitative Aptitude | - | - | 2 | 1 | 50 | 50 | 100 |
| 11 | DGP-3 | EGP311 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| Total | | | | 15 | 4 | 10 | 24 | 550 | 550 | 1100 |

Following additional Course for Lateral Entry Students with B.Sc. background to be taken in III semester and all should pass with minimum of 45% marks for obtaining the degree: credits will not be added

| | | | | | | | | | | |
|---|----|------------|---------------------------|---|---|---|---|----|----|-----|
| 1 | LC | EME161/261 | Engineering Drawing (Lab) | - | - | 4 | - | 50 | 50 | 100 |
| 2 | | TMU101 | Environmental Studies | 2 | 1 | - | - | 40 | 60 | 100 |

Signature

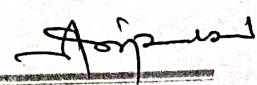
B.Tech. (Civil Engineering)-Semester IV

| S. No | Category | Course Code | Course | Periods | | | Evaluation Scheme | | | |
|-------|----------|-------------|--|---------|---|----|-------------------|----------|----------|-------|
| | | | | L | T | P | Credit | Internal | External | Total |
| 1 | PCC-5 | ECE411 | Geoinformatics | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 2 | PCC-6 | ECE412 | Mechanics of Solids | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 3 | PCC-7 | ECE413 | Engineering Geology & Soil Mechanics | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 4 | PCC-8 | ECE414 | Transportation Engineering | 3 | - | - | 3 | 40 | 60 | 100 |
| 5 | LC-12 | ECE461 | Geoinformatics (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 6 | LC-13 | ECE462 | Mechanics of Solids (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 7 | LC-14 | ECE463 | Engineering Geology & Soil Mechanics (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 8 | LC-15 | ECE464 | Transportation Engineering (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 9 | SEC-2 | TGC407 | Analytical Reasoning | - | - | 2 | 1 | 50 | 50 | 100 |
| 10 | DGP-4 | EGP411 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| Total | | | | 12 | 3 | 10 | 20 | 510 | 490 | 1000 |

*Skill based Training/Internship of 4 weeks duration from a reputed Industry/organization after completion of 4th semester end-semester examination.

Following additional Courses for Lateral Entry Students with B.Sc. background to be taken in IV semester and all should pass with minimum of 45% marks for obtaining the degree: credits will not be added

| | | | | | | | | | | |
|---|----|------------|-------------------------|---|---|---|---|----|----|-----|
| 1 | LC | EME162/262 | Workshop Practice (Lab) | - | - | 4 | - | 50 | 50 | 100 |
|---|----|------------|-------------------------|---|---|---|---|----|----|-----|



B.Tech. (Civil Engineering)-Semester V

| S. No | Category | Course Code | Course | Periods | | | Evaluation Scheme | | | |
|--------------|----------|-------------|---|-----------|----------|----------|-------------------|------------|------------|-------------|
| | | | | L | T | P | Credit | Internal | External | Total |
| 1 | PCC-9 | ECE511 | Steel Structure-I | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 2 | PCC-10 | ECE512 | Geotechnical Engineering | 3 | - | - | 3 | 40 | 60 | 100 |
| 3 | PCC-11 | ECE513 | Structural Analysis-I | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 4 | PCC-12 | ECE514 | RCC Structure-I | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 5 | PCC-13 | ECE515 | Hydrology & Irrigation Engineering | 3 | - | - | 3 | 40 | 60 | 100 |
| 6 | LC-16 | ECE562 | Geotechnical Engineering (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 7 | LC-17 | ECE563 | Structural Analysis-I (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 8 | AECC-4 | ECE564 | Survey Camp | - | - | - | 1 | 50 | 50 | 100 |
| 9 | PROJ-1 | ECE592 | Skill based Practical Training & Presentation | - | - | - | 2 | 50 | 50 | 100 |
| 10 | SEC-3 | TGC507 | Modern Algebra and Data Management | - | - | 2 | 1 | 50 | 50 | 100 |
| 11 | SEC-4 | TGC502 | Self-Management for Engineers | - | - | 2 | 1 | 50 | 50 | 100 |
| 12 | DGP-5 | EGP511 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| Total | | | | 15 | 3 | 8 | 25 | 600 | 600 | 1200 |

MOOC Course:

| | | | | | | | | | | |
|---|--------|--------|----------------------------|---|---|---|---|---|-----|-----|
| 1 | MOOC-1 | MOOC01 | MOOC Program -I (Optional) | - | - | - | 2 | - | 100 | 100 |
|---|--------|--------|----------------------------|---|---|---|---|---|-----|-----|

B.Tech. (Civil Engineering)-Semester VI

| S. No | Category | Course Code | Course | Periods | | | Evaluation Scheme | | | |
|--------------|----------|-------------|---|-----------|----------|----------|-------------------|------------|------------|-------------|
| | | | | L | T | P | Credit | Internal | External | Total |
| 1 | PCC-14 | ECE611 | Steel Structure-II | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 2 | PCC-15 | ECE612 | Public Health & Environmental Engineering | 3 | - | - | 3 | 40 | 60 | 100 |
| 3 | PCC-16 | ECE613 | Structural Analysis-II | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 4 | PCC-17 | ECE614 | Estimation & Costing | 2 | 1 | - | 3 | 40 | 60 | 100 |
| 5 | PCC-18 | ECE615 | RCC Structure-II | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 6 | AECC-5 | EHM613 | Human values & Professional Ethics | 3 | - | - | 3 | 40 | 60 | 100 |
| 7 | LC-18 | ECE661 | Public Health & Environmental Engineering (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 8 | LC-19 | ECE662 | Estimation & Costing (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 9 | SEC-5 | TGC607 | Advance Algebra and Geometry | - | - | 2 | 1 | 50 | 50 | 100 |
| 10 | SEC-6 | TGC602 | Workplace Management for Engineers | - | - | 2 | 1 | 50 | 50 | 100 |
| 11 | DGP-6 | EGP611 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| Total | | | | 17 | 4 | 8 | 25 | 540 | 560 | 1100 |

MOOC Course:

| | | | | | | | | | | |
|---|--------|--------|-----------------------------|---|---|---|---|---|-----|-----|
| 1 | MOOC-2 | MOOC02 | MOOC Program -II (Optional) | - | - | - | 2 | - | 100 | 100 |
|---|--------|--------|-----------------------------|---|---|---|---|---|-----|-----|

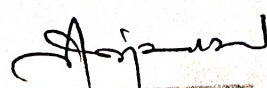
Signature

B.Tech. (Civil Engineering)-Semester VII

| S. No. | Category | Course Code | Course | Periods | | | Evaluation Scheme | | | |
|--------|----------|-------------|------------------------------------|-----------|----------|-----------|-------------------|----------------|----------------|------------|
| | | | | L | T | P | Credit | Internal | External | Total |
| 1 | PCC-19 | ECE719 | Earthquake Resistant Structures | 3 | - | - | 3 | 40 | 60 | 100 |
| 2 | PEC-1 | | Program Elective | 3 | - | - | 3 | 40 | 60 | 100 |
| 3 | PEC-2 | | | 3 | - | - | 3 | 40 | 60 | 100 |
| 4 | PEC-3 | | | 3 | 0 | - | 3 | 40 | 60 | 100 |
| 5 | OEC-1 | | Open Elective | 3 | - | - | 3 | 40/50 | 60/50 | 100 |
| 6 | LC-20 | ECE761 | Analysis & Design (Lab) | - | - | 2 | 1 | 50 | 50 | 100 |
| 7 | PROJ-2 | ECE792 | Industrial Training & Presentation | - | - | - | 2 | 50 | 50 | 100 |
| 8 | PROJ-3 | ECE798 | Project Work Phase-I | 1 | - | 8 | 5 | 100 | - | 100 |
| 9 | DGP-7 | EGP711 | Discipline & General Proficiency | - | - | - | - | 100 | - | 100 |
| | | | Total | 16 | 0 | 10 | 23 | 500/510 | 400/390 | 900 |

MOOC Course:

| | | | | | | | | | | |
|---|--------|--------|------------------------------|---|---|---|---|---|-----|-----|
| 1 | MOOC-3 | MOOC03 | MOOC Program -III (Optional) | - | - | - | 2 | - | 100 | 100 |
|---|--------|--------|------------------------------|---|---|---|---|---|-----|-----|



B.Tech. (Civil Engineering)-Semester VIII

| S. No | Category | Course Code | Course | | Periods | | | Evaluation Scheme | | | |
|-------|----------|-------------|----------------------------------|---------------------|---------|---|---|-------------------|----------|----------|-------|
| | | | | | L | T | P | Credit | Internal | External | Total |
| 1 | PCC-20 | ECE811 | Project Planning & Control | | 3 | - | - | 3 | 40 | 60 | 100 |
| 2 | PCC-21 | ECE812 | Design of Hydraulic Structures | | 3 | - | - | 3 | 40 | 60 | 100 |
| 3 | PEC-4 | | Program Elective | Program Elective-IV | 3 | - | - | 3 | 40 | 60 | 100 |
| 4 | PEC-5 | | | Program Elective-V | 3 | 1 | - | 4 | 40 | 60 | 100 |
| 5 | OEC-2 | | Open Elective | Open Elective-II | 3 | - | - | 3 | 40/50 | 60/50 | 100 |
| 6 | PROJ-4 | ECE898 | Project Work Phase-II | | 1 | - | 4 | 3 | 50 | 50 | 100 |
| 7 | DGP-8 | EGP811 | Discipline & General Proficiency | | - | - | - | - | 100 | - | 100 |
| | | | Total | | 16 | 1 | 4 | 19 | 350/360 | 350/340 | 700 |

MOOC Course:

| | | | | | | | | | | |
|---|--------|--------|-----------------------------|---|---|---|---|---|-----|-----|
| 1 | MOOC-4 | MOOC04 | MOOC Program -IV (Optional) | - | - | - | 2 | - | 100 | 100 |
|---|--------|--------|-----------------------------|---|---|---|---|---|-----|-----|

ATIVE COURSES OFFERED

| S. No | Code | Course | L | T | P | Credit |
|---|--------|--|---|---|---|--------|
| Semester VII- Program Elective I- (Remote Sensing and Transportation Engineering) -Any one | | | | | | |
| 1 | ECE712 | Introduction to Remote Sensing | 3 | 0 | 0 | 3 |
| 2 | ECE713 | Pavement Design | 3 | 0 | 0 | 3 |
| 3 | ECE715 | Transportation Systems and Planning | 3 | 0 | 0 | 3 |
| 4 | ECE717 | Introduction to GIS | 3 | 0 | 0 | 3 |
| 5 | ECE718 | Railway and Airport Engineering | 3 | 0 | 0 | 3 |
| Semester VII- Program Elective II- (Structural Engineering)- Any one | | | | | | |
| 6 | ECE720 | Advanced Concrete Design | 3 | 0 | 0 | 3 |
| 7 | ECE721 | Pre-stressed Concrete | 3 | 0 | 0 | 3 |
| 8 | ECE711 | Advanced Computer Aided Design (CAD) | 3 | 0 | 0 | 3 |
| 9 | ECE722 | Finite Element Method | | | | |
| 10 | ECE723 | Building Maintenance & Repair | 3 | 0 | 0 | 3 |
| 11 | ECE724 | Groundwater Management | 3 | 0 | 0 | 3 |
| Semester VII- Program Elective III-(Management) -Any one | | | | | | |
| 12 | ECE731 | Principle of Management | 3 | 0 | 0 | 3 |
| 13 | ECE732 | Industrial Sociology | 3 | 0 | 0 | 3 |
| 14 | ECE733 | Engineering and Managerial Economics | 3 | 0 | 0 | 3 |
| 15 | ECE734 | Solid and Hazardous Waste Management | 3 | 0 | 0 | 3 |
| 16 | ECE735 | Disaster Management | 3 | 0 | 0 | 3 |
| Semester VIII- Program Elective IV- (Environmental and Geotechnical Engineering) -Any one | | | | | | |
| 17 | ECE813 | Rock Mechanics | 3 | 0 | 0 | 3 |
| 18 | ECE815 | Bridge Engineering | 3 | 0 | 0 | 3 |
| 19 | ECE816 | Environmental Impact Assessment and Management | 3 | 0 | 0 | 3 |
| 20 | ECE817 | Plastic Analysis of Steel Structures | 3 | 0 | 0 | 3 |
| 21 | ECE818 | Advanced Foundation Design | 3 | 0 | 0 | 3 |
| Semester VIII- Program Elective V-(Any one) | | | | | | |
| 22 | ECE831 | Machine learning & Data Analytics | 3 | 1 | 0 | 4 |
| 23 | ECE832 | Total Quality Management | 3 | 1 | 0 | 4 |
| 24 | ECE833 | Entrepreneurship | 3 | 1 | 0 | 4 |
| 25 | ECE834 | Marine Structures & Airport Engineering | 3 | 1 | 0 | 4 |

| | | |
|--------------------------------------|--|--|
| Course Code: ECE362 | B.Tech. (Civil)- Semester-III Building Planning and Drawing using CAD (Lab) | L-0 T-0 P-2 C-1 |
| Course Outcomes: | On completion of the course, the students will be: | |
| CO1. | Preparing the SITE-PLAN of a purposed residential building. | |
| CO2. | Preparing the ELEVATION & SECTION of the given model by using Autodesk Revit Architecture. | |
| CO3. | Creating a PLAN of a given 2B.H.K (Bedroom, Hall & Kitchen) model. | |
| CO4. | Creating of an ELEVATION & SECTION of the given 2 B.H.K (Bedroom, Hall & Kitchen) plan. | |
| CO5. | Creating the 2D & 3D model of the given 2B.H.K (Bedroom, Hall & Kitchen) plan. | |

| AutoCAD 2D Total Duration: 28 Hours | |
|--|--|
| Session | Topics |
| Session 1 | Introduction to Engineering Drawings |
| | Views (Orthographic, Isometric & Perspective) |
| | Introduction to AutoCAD |
| | History, Exploring GUI |
| | Workspaces |
| | Co-ordinate systems |
| | File Management |
| | New, Qnew, Open, Save, Save as, Close, Exit |
| | Drawing settings |
| | Units, Limits |
| Session 2 | Drafting settings |
| | Ortho, Polar, Grid, Snap, Polar Tracking, Object snap, DynamicInputs, Quick Properties, Selection Cycling |
| Session 3 | Drawing Tools |
| | Line, Circle, Arc, Ellipse, Donut, |
| Session 4 | Polygon, Rectangle, Point, Multiline, Spline, Xline, Ray, Wipeout, Revision cloud |
| | Modify Tools |
| Session 5 | Erase, Oops, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet, Divide, Measure, Point Style, offset |
| | Display Control |
| Session 6 | Zoom, Pan, Redraw, Regen, Clean Screen, Steering wheels |
| | Object Properties |
| Session 7 | Color, Line type, Ltscale, Line weight, Match Properties, Transparency, List |
| | Layer Management |
| Session 8 | Layer Properties Manager |
| | Layers and Layer Properties |

| | |
|-------------------|--|
| | New Property Filter |
| | Clipboard Copy, Copybase, Copylink, Pasteclip, Pastespecial, Pasteblock, Paste original Mlstyle, Mledit, Pedit, Splinedit, Edit Array, Grip Editing |
| Session 7 | Annotation Tools Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions, CentreMark, Centerline Dimension Style, Dimension Edit |
| Session 8 | Annotation Tools Leader, Qleader, Mleader, Mleader style, Add leader, AlignLeaderlines, Collect Leader |
| Session 9 | Annotation Tools Text, Style, Mtext, Scale text, Spell, Table, Table style, Tabledit Hatching Objects Hatch, Gradient, Hatchedit |
| Session 10 | Object Selection Methods Select, Qselect, Filter Block, Wblock, Insert Attribute (Attdef, Attedit, Eattedit, Attdisp, Attidia, Atttext, Eatttext) |
| Session 11 | Parametric Modeling Geometric Constraint, Dimensional Constraint, Design Centre, ToolPalette |
| Session 12 | Isometric View Drawings |
| Session 13 | Hyperlink, Data Link, Group Etransmit, Publish, Publish to Web Introduction to plotting, Layout, Viewports, Mview, Page setup, Plot Styles, Plot External references - Xref, Xbind |

| | | |
|----------------------|---|--|
| Experiments: | Note: All experiments should be performed: | |
| Experiment-1: | To create a PLAN of a given 2B.H.K (Bedroom, Hall & Kitchen) model. | |
| Experiment-2: | To create an ELEVATION & SECTION of the given 2 B.H.K (Bedroom, Hall & Kitchen) plan. | |
| Experiment-3: | To create the TOP & SIDE view of the given dining table. | |
| Experiment-4: | To create the ONE-POINT Perspective View of the given modular kitchen. | |
| Experiment-5: | To create the ELEVATION of a building by TWO-POINT Perspective View. | |
| Experiment-6: | To prepare the SITE-PLAN of a purposed residential building. | |
| Experiment-7: | To create a 2D plan of 2B.H.K (Bedroom, Hall & Kitchen) with complete interior i.e. - table, chair, bed, sofa...etc | |
| Experiment-8: | To create the 3D model of the given 2B.H.K (Bedroom, Hall & Kitchen) plan. | |
| Experiment-9: | To create the 3D model of 2B.H.K (Bedroom, Hall & Kitchen) plan on Autodesk Revit Architecture. | |

| | | |
|-------------------------|---|--|
| Experiment-10: | To prepare the ELEVATION & SECTION of the given model by using Autodesk Revit Architecture. | |
| Reference Books: | <ol style="list-style-type: none"> 1. "Auto CAD", Auto Desk, Reference Guide, CADD CENTRE. 2. "Revit Architecture", Auto Desk, Reference Guide, CADD CENTRE. <p>* Latest editions of all the suggested books are recommended.</p> | |

Evaluation Scheme of Practical Examination:

Internal Evaluation (50 marks)

Each experiment would be evaluated by the faculty concerned on the date of the experiment on a 4-point scale which would include the practical conducted by the students and a Viva taken by the faculty concerned. The marks shall be entered on the index sheet of the practical file.

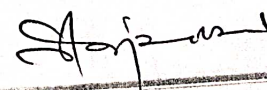
Evaluation scheme:

| PRACTICAL PERFORMANCE & VIVA DURING THE SEMESTER (35 MARKS) | | | | ON THE DAY OF EXAM (15 MARKS) | | TOTAL INTERNAL (50 MARKS) |
|---|----------------------|-----------------|-----------------------|-------------------------------|-----------------|---------------------------|
| EXPERIMENT (5 MARKS) | FILE WORK (10 MARKS) | VIVA (10 MARKS) | ATTENDANCE (10 MARKS) | EXPERIMENT (5 MARKS) | VIVA (10 MARKS) | |

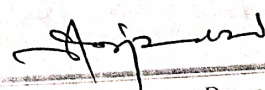
External Evaluation (50 marks)

The external evaluation would also be done by the external Examiner based on the experiment conducted during the examination.

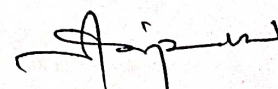
| EXPERIMENT (20 MARKS) | FILE WORK (10 MARKS) | VIVA (20 MARKS) | TOTAL EXTERNAL (50 MARKS) |
|-----------------------|----------------------|-----------------|---------------------------|
|-----------------------|----------------------|-----------------|---------------------------|



| | | |
|---------------------------------------|--|--|
| Course Code: 611 | B.Tech. (Civil)- Semester-IV Mechanics of Solids | L-3 T-1 P-0 C-4 |
| Course Outcomes: | On completion of the course, the students will be: | |
| CO1. | <i>Understanding the behaviour of materials under different stress and strain conditions.</i> | |
| CO2. | Understanding the concept of Hoop and Longitudinal stresses. | |
| CO3. | Applying bending moment, Shear force, bending stress and Shear stress distribution diagrams for beams. | |
| CO4. | <i>Analyzing the beams and columns for different loading conditions.</i> | |
| CO5. | <i>Evaluating the thin walled cylinders subjected to internal pressures.</i> | |
| Course Content: | | |
| Unit-1: | Simple Stresses and Strains Definitions; Elastic, plastic and rigid materials; Stress, strain- Tensile and compressive stresses; Shear stresses; Elastic Limit- Hooke's Law-Stress-Strain curve for mild steel- Yield point- Modulus of Elasticity-Modular ratio; Modulus of rigidity; Bars of varying sections; Lateral Strain; Poisson ratio; volumetric strain; Bulk modulus; Relation between the elastic constants. | 8 Hours |
| Unit-2: | Shear Force, Bending Moment and Axial force Conception of shear Force and Bending Moment- Sign conventions- Sagging and hogging moments- shear force and bending moment diagrams for simply supported beams and overhanging beams. Beams subjected to various types of loading- point load, distribution loads, couples, Maximum bending moment for a beam, point of contra flexure. | 8 Hours |
| Unit-3: | Stresses in Beams Definitions- Pure or Simple bending- Theory of simple bending- Neutral axis- Bending stress- Bending stress distribution- Moment of resistance, Derivation of Bending Equation- Assumption in the theory of bending- section Modulus. Section modulus for different shapes of beam sections- Rectangular, Circular, L and T section; Shear stress distribution for a beam section for Rectangular. | 8 Hours |
| Unit-4: | Principal stresses and strains- Determination of normal stress, tangential stress, Principal stresses, Principal planes and obliquity by analytical method. Direct and Bending stresses Introduction-Stress distribution for an eccentrically loaded rectangular and circular section; the middle third rule; Core or Kern of a section. | 8 Hours |
| Unit-5: | <i>Columns and Struts: Types of columns, Euler's method, Factor of safety. Buckling of columns for different end conditions.</i> Thin cylinders & spheres: Introduction, difference between thin walled and thick-walled pressure vessels. Thin walled cylinders, hoop and longitudinal stresses and strains, volumetric strain. | 8 Hours |
| Text Books: | 1. S. Ramamrutham & Narain "Strength of Materials", Dhanpat Rai Publishing Company. | |
| Reference Books: | 1. Timoshenko S, D. H. Young, "Elements of Strength of Materials", East West Press. 2. Kazami S.M.A., "Mechanics of Solids", McGraw Hill Education. 3. Rajput R.K, "Strength of Materials: Mechanics of Solids", S. Chand Limited. *Latest editions of all the suggested books are recommended. | |
| Electronic reference material: | 1. https://www.youtube.com/watch?v=aQf6CQ8t1FQE 2. https://www.youtube.com/watch?v=DRM1n5I-jkY 3. https://www.youtube.com/watch?v=f08Y39UiC-o 4. https://www.youtube.com/watch?v=T5CVUyKL8D0 5. https://www.youtube.com/watch?v=hYGOs7skoS0 6. https://www.youtube.com/watch?v=xqrVFypkbAA | |



| | | |
|--------------------------------------|--|--|
| Course Code: ECE613 | B.Tech.- Semester-VI Structural Analysis-II | L-3 T-1 P-0 C-4 |
| Course Outcomes: | On completion of the course, the students will be : | |
| CO1. | Remembering analysis of indeterminate structure. | |
| CO2. | Understanding behaviour of arches and cables. | |
| CO3. | Applying internal forces and reactions in determinate and indeterminate structures subjected to moving loads. | |
| CO4. | Analyzing Indeterminate structures. | |
| CO5. | Evaluating moments and forces on two hinged three hinged circular and parabolic arches. | |
| Course Content: | | |
| Unit-1: | Slope Deflection Method- Continuous beams and rigid frames (with and without sway), Symmetry and anti-symmetry - Simplification for hinged end - Support displacements. | 8 Hours |
| Unit-2: | Moment Distribution Method: Distribution and carry-over of moments, Stiffness and carry over factors - Analysis of continuous beams with sinking of supports, single story Portal frames with and without sway. | 8 Hours |
| Unit-3: | Arches: Introduction to Arches; Types of arches; Analysis of Arches- three hinged, two hinged, parabolic and circular arches; Settlement and temperature effects on three hinged and two hinged arches. | 8 Hours |
| Unit-4: | ILD for statically indeterminate beams: Muller Breslau's principle, steps for obtaining ILD for reaction and internal forces in propped cantilever and continuous beams, ILD for three hinged and two hinged arches. | 8 Hours |
| Unit-5: | Suspension Bridges: Analysis of cables with concentrated and continuous loadings, Basics of two and three hinged stiffening girders, Influence line diagrams for maximum bending moment and shear force for stiffening girders. | 8 Hours |
| Text Books: | <ol style="list-style-type: none"> 1. Ramamrutham, S., "Theory of Structures", Dhanpat Rai Publishing Company Pvt. Ltd. 2. C. S. Reddy "Structural Analysis", Tata Mc Graw Hill Publishing Company Limited, New Delhi. | |
| Reference Books: | <ol style="list-style-type: none"> 1. Timoshenko, S. P. and D. Young, "Theory of Structures", Tata Mc- Graw Hill Book Publishing Company Ltd., New Delhi. 2. Dayaratnam, P. "Analysis of Statically Indeterminate Structures", Affiliated East-West Press. 3. Hibbeler, R. C., "Structural Analysis", Pearson Prentice Hall. 4. Gere & Weaver; "Matrix Analysis of Framed Structures", CBS Publications. 3. Jain, A. K., "Advanced Structural Analysis", Nem Chand & Bros., Roorkee. 4. Jain, O. P. and B. K. Jain, "Theory and Analysis of Structures", Nem Chand & Bros., Roorkee. | |



Diploma in Civil Engineering Curriculum

Diploma – Semester I

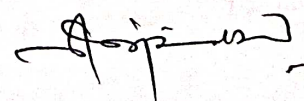
| S. N | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|--------------|----------|-------------------|---|-----------|----------|-----------|-----------|-------------------|------------|------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | CC-1 | DIP111 | Applied Mathematics – I | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 2 | CC-2 | DIP112/ DIP113 | Applied Physics/ Applied Chemistry | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 3 | CC-3 | DIP104/ DIP105 | Basics of Electrical & Civil Engineering / Basics of Electronics & Mechanical Engineering | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 4 | CC-4 | DIP131/ DIP107 | Computer Fundamentals, Internet & MS-Office/ Applied Mechanics | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 5 | AECC-1 | TGE103 | English Communication-I | 1 | 0 | 2 | 2 | 40 | 60 | 100 |
| 6 | CC-5 | DIP181/ DIP182 | Physics Lab/Chemistry Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 7 | CC-6 | DIP153/ DIP154 | Electrical Engineering Lab / Electronics Engineering Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 8 | CC-7 | DIP155/ DIP156 | Information Technology Lab / Applied Mechanics Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 9 | CC-8 | DIP187/ DIP188 | Workshop Practice / Engineering Drawing | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| Total | | | | 17 | 0 | 12 | 23 | 400 | 500 | 900 |

[Signature]

Diploma in Civil Engineering Curriculum

Diploma – Semester II

| S. N | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|--------------|----------|-------------------|--|-----------|----------|-----------|-----------|-------------------|------------|------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | CC-9 | DIP201 | Applied Mathematics – II | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 2 | CC-10 | DIP203/ DIP202 | Applied Chemistry/ Applied Physics | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 3 | CC -11 | DIP205/ DIP204 | Basics of Electronics & Mechanical Engineering / Basics of Electrical & Civil Engineering | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 4 | CC-12 | DIP207/ DIP231 | Applied Mechanics / Computer Fundamentals, Internet & MS-Office | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 5 | AECC-2 | TGE20 4 | English Communication-II | 1 | 0 | 2 | 2 | 40 | 60 | 100 |
| 6 | CC-13 | DIP252/ DIP281 | Chemistry Lab/ Physics Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 7 | CC-14 | DIP254/ DIP253 | Electronics Engineering Lab / Electrical Engineering Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 8 | CC-15 | DIP256/ DIP255 | Applied Mechanics Lab / Information Technology Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 9 | CC-16 | DIP288/ DIP257 | Engineering Drawing / Workshop Practice | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| Total | | | | 17 | 0 | 12 | 23 | 400 | 500 | 900 |



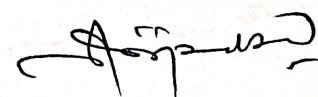
Diploma in Civil Engineering Curriculum

Diploma – Semester III

| S. N | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|--------------|----------|---------------|--|-----------|----------|-----------|-----------|-------------------|------------|-------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | DSC-1 | DCE301 | Surveying – I | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 2 | DSC-2 | DCE303 | Building Materials | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 3 | CC -17 | DME301 | Strength of Materials | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 4 | CC-18 | DME302 | Hydraulics | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 5 | DSC-3 | DCE351 | Surveying Lab – I | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 6 | DSC-4 | DCE356 | Building Materials Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 7 | CC-19 | DCE357 | Strength of Materials and Hydraulics Lab | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 8 | SEC-1 | DCE358 | Minor Project | 0 | 0 | 6 | 3 | 50 | 50 | 100 |
| 9 | SEC-2 | TDC301 | Soft Skills for Technical Supervisors | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 10 | SEC-3 | TDC302 | Elementary Arithmetic & Reasoning | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 11 | SEC-4 | DDGP301 | Discipline & General Proficiency | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| Total | | | | 14 | 2 | 20 | 26 | 560 | 540 | 1100 |

*Additional course for Lateral entry students with 10+2/Intermediate background.

| | | | | | | | | | | |
|---|-------|---------|------------------------------------|---|---|---|---|----|----|-----|
| 1 | VAC-1 | DIP359* | Concepts of Information System Lab | 0 | 0 | 2 | 0 | 50 | 50 | 100 |
|---|-------|---------|------------------------------------|---|---|---|---|----|----|-----|

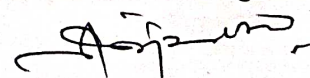


Diploma in Civil Engineering Curriculum

Diploma – Semester IV

| S. N | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|--------------|----------|-------------------|--|-----------|----------|-----------|-----------|-------------------|------------|-------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | DSC-5 | DCE401 | Soil Mechanics & Foundation Engineering | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 2 | DSC-6 | DCE402 | Public Health Engineering – I | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 3 | DSC-7 | DCE403 | Concrete Technology | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 4 | DSC -8 | DCE404 | Irrigation Engineering | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 5 | AECC-3 | DIP403/ DIP308 | Environment Studies | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 6 | DSC-9 | DCE451 | Soil Mechanics & Foundation Engineering Lab | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 7 | DSC-10 | DCE452 | Public Health Engineering Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 8 | DSC-11 | DCE453 | Concrete Technology Lab | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 9 | SEC-5 | TDC401 | Soft Skills for Workshop for Technical Supervisors | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 10 | SEC-6 | TDC402 | Progressive Algebra & Data Management | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 11 | SEC-7 | DDGP401 | Discipline & General Proficiency | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| Total | | | | 17 | 3 | 12 | 26 | 550 | 550 | 1100 |

* Students will go for Summer/Industrial Training for 6 to 8 weeks



Diploma in Civil Engineering Curriculum

Diploma- Semester V

| S. N | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|--------------|----------|---------------|---|-----------|----------|-----------|-----------|-------------------|------------|-------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | DSC-12 | DCE511 | Transportation Engineering – I | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 2 | DSC-13 | DCE502 | Surveying – II | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 3 | DSC-14 | DCE509 | Construction Management | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 4 | AECC-4 | DIP505 | Human Values and Professional Ethics | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 5 | DSEC-1 | - | Discipline Specific Elective Course – I | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 6 | GEC-1 | - | Generic Elective Course– I | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 7 | DSC–15 | DCE551 | Transportation Engineering Lab | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 8 | DSC–16 | DCE552 | Surveying Lab – II | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 9 | DSC–17 | DCE558 | Civil Engineering Drawing – I | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 10 | SEC-8 | DCE555 | Industrial Training (Evaluation) | 0 | 0 | 0 | 8 | 50 | 50 | 100 |
| 11 | SEC-9 | DDGP501 | Discipline & General Proficiency | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| Total | | | | 20 | 3 | 12 | 37 | 540 | 560 | 1100 |

Diploma in Civil Engineering Curriculum

Diploma- Semester VI

| S. N | Category | Course Code | Course | Periods | | | Credit | Evaluation Scheme | | |
|--------------|----------|-------------|--|-----------|----------|-----------|-----------|-------------------|------------|-------------|
| | | | | L | T | P | | Internal | External | Total |
| 1 | DSC-18 | DCE608 | Design of Reinforced Cement Concrete (RCC) Structure | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 2 | DSC-19 | DCE602 | Design of Steel Structures | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 3 | DSC-20 | DCE605 | Estimating, Costing and Valuation | 3 | 1 | 0 | 4 | 40 | 60 | 100 |
| 4 | AECC-5 | DIP605 | Entrepreneurship | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 5 | DSEC-2 | - | Discipline Specific Elective Course – II | 4 | 0 | 0 | 4 | 40 | 60 | 100 |
| 6 | GEC-2 | - | Generic Elective Course– II | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 7 | DSC-21 | DCE654 | Reinforced Cement Concrete (RCC) | 0 | 0 | 2 | 1 | 50 | 50 | 100 |
| 8 | DSC-22 | DCE656 | Civil Engineering Drawing -II | 0 | 0 | 4 | 2 | 50 | 50 | 100 |
| 9 | SEC-10 | DCE657 | Major Project | 0 | 0 | 12 | 6 | 50 | 50 | 100 |
| 10 | SEC-11 | DDGP601 | Discipline & General Proficiency | 0 | 0 | 0 | 0 | 100 | 0 | 100 |
| Total | | | | 20 | 3 | 18 | 32 | 490 | 510 | 1000 |

Diploma in Civil Engineering Curriculum

ELECTIVE COURSES OFFERED

Generic Elective Courses (GEC)

(Student can select any one Generic elective offered by university)

| S. No | Code | Course | L | T | P | Credit |
|------------------------------|---------|---------------------------------|---|---|---|--------|
| Semester V (Any one) | | | | | | |
| 1 | DGEC501 | Non-Conventional Energy Sources | 3 | 0 | 0 | 3 |
| 2 | DGEC502 | Power Plant Engineering | 3 | 0 | 0 | 3 |
| Semester VI (Any one) | | | | | | |
| 1 | DGEC601 | Non-Conventional Energy Sources | 3 | 0 | 0 | 3 |
| 2 | DGEC602 | Power Plant Engineering | 3 | 0 | 0 | 3 |

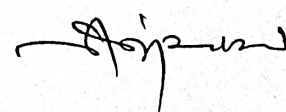
Discipline Specific Elective Courses (DSEC)

| S.No | Code | Course | L | T | P | Credit |
|------------------------------|--------|--------------------------------|---|---|---|--------|
| Semester V (Any One) | | | | | | |
| 1 | DCE505 | Public Health Engineering – II | 4 | 0 | 0 | 4 |
| 2 | DCE508 | Construction Accounts | 4 | 0 | 0 | 4 |
| 3 | DCE510 | Building Construction | 4 | 0 | 0 | 4 |
| Semester VI (Any One) | | | | | | |
| 1 | DCE604 | Earthquake Engineering | 4 | 0 | 0 | 4 |
| 2 | DCE607 | Transportation Engineering -II | 4 | 0 | 0 | 4 |
| 3 | DCE609 | Disaster Management | 4 | 0 | 0 | 4 |

Note :

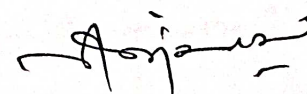
| L- Lecture | T- Tutorial | P- Practical | C- Credits |
|--------------|-------------|--------------|-------------------------------------|
| 1 L = 1 Hour | 1T = 1 Hour | 1P = 1 Hour | 1C = 1 Hour L or T 1C = 2 Hour P |

| | | |
|--------------------------------------|---|--|
| Course Code: DME301 | Diploma in Civil Engineering - Semester-III Strength of Materials | L-4 T-0 P-0 C-4 |
| Course Outcomes: | On completion of the course, the students will be : | |
| CO1. | Understanding Moment of Inertia and concept of centroid for different section, Concept of SFD and BMD, Concept of column different end condition. | |
| CO2. | Analyzing SFD, BMD and bending strength of beams. | |
| CO3. | Applying the behavior of members of structure to avoid failure. | |
| CO4. | Analyzing & Applying the beams for slope and deflection. | |
| CO5. | Evaluating critical loads for beams and columns for different end conditions | |
| Course Content: | | |
| Unit-1: | <u>Moment of Inertia, Concept of centroid and second moment of area, Radius of gyration, Theorems of parallel and perpendicular axes, Second Moment of area for sections: rectangle, triangle, circle, Tee, I, Channel and compound sections.</u> | 8 Hours |
| Unit-2: | Bending Moment and Shear Force: Concept of a beam and supports (Hinged, Roller and Fixed), Types of Beams: Simply supported, cantilever, fixed, overhang and continuous beams, Types of loads (distributed and point), Concept of Bending Moment & Shear Force. Sign conventions. Bending moment and shear force diagrams for cantilever and simply supported beams subjected to uniformly distributed and concentrated loads. | 8 Hours |
| Unit-3: | Bending Stresses: Assumptions of theory of simple bending, Derivation of the equation, $M/I = F/Y = E/R$. Moment of resistance, section modulus and permissible bending stresses, bending stresses in rectangular sections. | 8 Hours |
| Unit-4: | Slopes and Deflections of Beams: Definition of slope and deflection, sign convention, Circular bending, Calculation of maximum slope and deflection for the following standard cases. (1) Cantilever having point load at the free end, Cantilever with uniformly distributed load over the entire span. (2) Simply supported beam with point load at centre of the span. Simply supported beam with U.D. load over entire span. NOTE: All examples will be for constant moment of inertia using direct formula without derivation | 8 Hours |
| Unit-5: | Columns & Struts: Definition of long column, short column and strut, slenderness ratio, equivalent length, critical load, collapse Load, End conditions of column. Application of Euler's formula (no derivation), simple numerical problems based on Euler's formulae. | 8Hours |
| Text Books: | 1. Rajput R. K., <i>Strength of Materials</i> , S.Chand & Co. Ltd., Delhi. | |



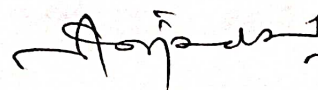
| | | |
|--------------------------------|--|--|
| <u>Reference Books:</u> | <ol style="list-style-type: none"> 1. Ramamarutham S., <i>Strength of Materials</i>, Dhanpat Rai & Sons, Delhi. 2. Kapoor J.K., <i>Strength of Materials</i>, Asian Publication, Muzaffarnagar 3. Punmia B.C., <i>Strength of Materials</i>, Laxmi Publication, Delhi. <p>* Latest editions of all the suggested books are recommended.</p> | |
|--------------------------------|--|--|

| | | |
|--------------------------------------|--|--|
| Course Code: DCE511 | Diploma in Civil Engineering - Semester-V Transportation Engineering- I | L-3 T-1 P-0 C-4 |
| Course Outcomes: | On completion of the course, the students will be : | |
| CO1. | Understanding historical development, classification and planning of roads in India. | |
| CO2. | Analyzing the various road construction materials & theory for geometric design of highways and expressways. | |
| CO3. | Applying the design of flexible and rigid pavements. | |
| CO4. | Evaluating the traffic volume | |
| CO5. | Creating various methods for minimizing the traffic congestion. | |
| Course Content: | | |
| Unit-1: | Highways Introduction: (i) Importance of Highway transportation. (ii) Functions of IRC. (iii) IRC classification of roads, (iv) Organization of state highways department. Road Geometrics: (i) Glossary of terms used in geometrics and their importance; Right of way, formation width, road margin, road shoulder, carriage way, side slopes, kerb, formation levels, camber and gradient Super elevation. (ii) Drawing of typical cross-sections in cutting and filling on straight, (iii) Underpass & over pass (flyovers and bridges). Highway Surveys and Plans: (i) Basic considerations governing alignment for a road in plain and hilly area. (ii) Highway location. | 8 Hours |
| Unit-2: | Marking of alignment Road Materials: (i) Different types of road materials in use; soil, aggregates binders. (ii) Function of soil as Highway sub grade. (iii) C.B.R; Method of finding. CBR value and its significance, (iv) Aggregates: Availability of road aggregates in India, requirements of road aggregates as per IS specifications. (v) Binders: Common binders; cement, bitumen and Tar, properties as per IS specifications, penetration and viscosity test, procedures and significance, cut back and emulsion and their uses. | 8 Hours |
| Unit-3: | Road Pavements; Types and Their Construction: (i) Road pavement: Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components. (ii) Sub-grade preparation - Setting out alignment of road, setting out bench marks, control pegs for embankment and cutting, borrow pits, making profiles of embankment, construction of embankment, compaction, stabilization, preparation of sub grade. Methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for sub grade preparation. (iii) Flexible pavements: sub base necessity and purpose. Stabilized sub base; | 8 Hours |



| | | |
|--------------------------------|---|----------------|
| | <p>purpose of stabilization. Types of Stabilization: (a) Mechanical stabilization. (b) Lime stabilization. (c) Cement stabilization. (d) Fly ash stabilization. (e) Granular sub base.</p> <p>(iv) Base course: (a) Brick soling. (b) Stone soling. (c) Medaling: water bound macadam and bituminous macadam, Methods of construction as per Ministry of Shipping and transport (Government of India).</p> <p>(v) Surfacing: Types of surfacing: (a) Surface dressing. (b) (i) Premix carpet. (ii) Semi dense carpet (S.D.C) (c) Asphalt concrete. (d) Grouting. Methods of constructions as per Ministry of Surface and Transport. Government of India, specifications and quality control; equipment used.</p> <p>(vi) Rigid pavements: Construction of concrete roads as per IRC specifications: Form laying, mixing and placing the concrete, compacting and finishing, curing, joints in concrete pavement, equipment used.</p> | |
| Unit-4: | <p>Traffic Engineering: (i) Traffic control devices - Signs, markings and signals, their effectiveness and location, installation of signs, IRC standards. (ii) Segregation of traffic. (iii) Types of intersections and how to choose them. (iv) Accidents: Types, causes and remedies.</p> | 8 Hours |
| Unit-5: | <p>Road maintenance: (i) <u>Common types of road failures-their causes and remedies.</u> (ii) <u>Maintenance of bituminous roads such as patch work and resurfacing.</u> <u>Maintenance of concrete roads-filling cracks, repairing joints, maintenance of shoulders (berms), maintenance of traffic control devices.</u></p> <p>Arboriculture: Names of trees used in arboriculture, distance of trees from centre of roads and distance between centre to centre of trees, tree guards, maintenance and revenue from trees.</p> | 8 Hours |
| <u>Text Books:</u> | <p>1. Gupta B.L., <i>Road, Railway, Bridges, Tunnels&Harbour Dock Engineering</i>, Standard Publishers Distributors, Delhi.</p> | |
| <u>Reference Books:</u> | <p>1. Khana S.K. & Justo, <i>Highway Engineering</i>, Nem Chand & Bros., Roorkee. 2. Ahuja & Birdi, <i>Road, Railway, Bridges & tunnels Engineering</i>, Standard Books House, Delhi. 3. Rangwala S.C., <i>Highway Engineering</i>, Charotar Publishing House (P) Ltd., Anand.</p> <p>*Latest editions of all the suggested books are recommended.</p> | |

| | | |
|-------------------------------|---|--|
| Course Code: DCE607 | Diploma in Civil Engineering - Semester-VI/ Elective II Transportation Engineering – II | L-4 T-0 P-0 C-4 |
| Course Outcomes: | On completion of the course, the students will be : | |
| CO1. | Remembering the concepts of the Permanent way section of the Indian Railway. | |
| CO2. | Understanding the problems regarding the geometric design of the railway track. | |
| CO3. | Applying the concepts of the various signaling systems, the safety aspects and the modernization of the Indian Railway. | |
| CO4. | Evaluating the problems related to structural design of the flexible and the rigid runway and taxiway pavements. | |
| Course Content: | | |
| Unit-1: | Railways Introduction: Railways - An important system of communication in India. Permanent Way: Definition of a permanent way; components of a permanent way, sub grade, ballast, sleepers, rails, fixtures and fastenings, Concept of gauge and different gauges prevalent in India, Suitability of these gauges under different conditions. | 8 Hours |
| Unit-2: | <u>Track Materials: (i) RAILS: Function of rails. Different types of rail sections- double header, bull headed and flat footed their standard length, weights and comparison. Welded rails-appropriate length of welded rails and advantages of welded rails. Creep: Its definition, causes, effects and prevention. Wear of rails: its causes and effects. (ii) SLEEPERS: Function of sleepers; Different types of sleepers: wooden, steel, cast iron (pot type), concrete and prestressed concrete, their sizes, shapes, characteristics and spacing. (iii) BALLAST: Function, materials used for making ballast stone, brick, slag and cinder, their characteristics. (iv) Fixtures and Fastenings:</u> <u>(a) Connections of rail to rail-Fishplate and fish bolts.</u> <u>Connection of Rail to sleepers: Sketches of connection between flat footed rails with various types sleepers with details of fixtures and fasteners used.</u> | 8 Hours |



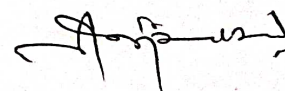
| | | |
|--------------------------------|--|----------------|
| Unit-3: | <p>Geometrics for Broad Gauge: Typical Cross-sections of single and double broad gauge railway tracks in cutting and embankment, Permanent and temporary land width, Gradients ruling, maximum, minimum for drainage. Gradients in station yards, Curves; Limiting radius of a curve for broad gauge, Transition length to be provided for railway curves as per railway code, Super-elevation-its necessity and limiting value, Definition of equilibrium cant and cant deficiency, widening of gauge on curves.</p> <p>Points and Crossings: Necessity and details of arrangement; sketch of a turnout definition of stock rail, tongue rail, check rail, lead rail, wing rail, point rail, splice rail, stretcher bar, throw of switch, heel of switch, nose of crossing, angle of crossing, overall length of turnout, facing and trailing points, diamond crossing, cross over, triangle.</p> | 8 Hours |
| Unit-4: | <p><u>Track Laying: Preparation of sub grade, Collection of materials setting up of material depot and carrying out initial operations such as adzing of sleepers, bending of rails and assembling of crossings. Definitions of base and rail head, Transportation by material trellises, rail carriers and material trains, Method of track laying (parallel, telescopic and American methods), Organization of layout at rail head, Ballasting of the track.</u></p> | 8 Hours |
| Unit-5: | <p>Hill Roads: (i) Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cut and partly in fill. (ii) Landslides: Causes, preventions and control measures. .</p> <p>Road Drainage: (i) Necessity of road drainage work, cross drainage works. (ii) Surface and subsurface drains and storm water drains. Location, spacing and typical details of side drains, side ditches for surface drainage. Intercepting drains, pipe drains in hill roads, details of drains in cutting embankment, typical cross-sections.</p> | 8 Hours |
| <u>Text Books:</u> | <p>1. Gupta B.L., <i>Road, Railway, Bridges, Tunnels & Harbour Dock Engineering</i>, Standard Publishers Distributors, Delhi.</p> | |
| <u>Reference Books:</u> | <p>1. Khana S.K. & Justo, <i>Highway Engineering</i>, Nem Chand & Bros., Roorkee.</p> <p>2. Ahuja & Birdi, <i>Road, Railway, Bridges & tunnels Engineering</i>, Standard Books House, Delhi.</p> <p>3. Gupta D.V., <i>Transportation Engineering</i>, Asian Publishers Muzaffarnagar.</p> <p>*Latest editions of all the suggested books are recommended.</p> | |

| | | |
|--------------------------------------|--|--|
| Course Code: DCE658 | Diploma in Civil Engineering - Semester-V Civil Engineering Drawing – I | L-0 T-0 P-4 C-2 |
| Course Outcomes: | On completion of this course the students will be: | |
| CO1. | Remembering the fundamentals of civil engineering drawing. | |
| CO2. | Understanding the foundations, various floors, doors & windows | |
| CO3. | Analyzing the civil engineering drawing with auto CADD for field work | |
| CO4. | Applying the various detailed drawing terms to draw civil engineering map. | |
| CO5. | Evaluating the planning and detained drawing work for the completion of project on ground | |

| <i>AutoCAD 2D Total Duration : 28 Hours</i> | |
|---|---|
| Session | Topics |
| Session 1 | Introduction to Engineering Drawings |
| | <i>Views (Orthographic, Isometric & Perspective)</i> |
| | Introduction to AutoCAD |
| | <i>History, Exploring GUI</i> |
| | <i>Workspaces</i> |
| | <i>Co-ordinate systems</i> |
| | File Management |
| | <i>New, Qnew, Open, Save, Save as, Close, Exit</i> |
| | Drawing settings |
| | <i>Units, Limits</i> |
| | Drafting settings |
| Session 2 | <i>Ortho, Polar, Grid, Snap, Polar Tracking, Object snap, DynamicInputs, Quick Properties, Selection Cycling</i> |
| | Drawing Tools |
| Session 3 | <i>Line, Circle, Arc, Ellipse, Donut,</i> |
| | <i>Polygon, Rectangle, Point, Multiline, Spline, Xline, Ray, Wipeout, Revision cloud</i> |
| Session 4 | Modify Tools |
| | <i>Erase, Oops, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet, Divide, Measure, Point Style, offset</i> |
| Session 5 | Display Control |
| | <i>Zoom, Pan, Redraw, Regen, Clean Screen, Steering wheels</i> |
| | Object Properties |



| | |
|-------------------|---|
| | Color, Line type, Ltscale, Line weight, Match Properties, Transparency, List |
| Session 6 | Layer Management |
| | Layer Properties Manager |
| | Layers and Layer Properties |
| | New Property Filter |
| | Clipboard Copy, Copybase, Copylink, Pasteclip, Pastespecial, Pasteblock, Paste original Mlstyle, Mledit, Pedit, Splinedit, Edit Array, Grip Editing |
| Session 7 | Annotation Tools |
| | Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions, CentreMark, Centerline |
| | Dimension Style, Dimension Edit |
| Session 8 | Annotation Tools |
| | Leader, Qleader, Mleader, Mleader style, Add leader, AlignLeaderlines, Collect Leader |
| Session 9 | Annotation Tools |
| | Text, Style, Mtext, Scale text, Spell, Table, Table style, Tabledit |
| | Hatching Objects Hatch, Gradient, Hatchedit |
| Session 10 | Object Selection Methods |
| | Select, Qselect, Filter |
| | Block, Wblock, Insert Attribute (Attdef, Attedit, Eattedit, Attdisp, Attdia, Atttext, Eatttext) |
| Session 11 | Parametric Modeling |
| | Geometric Constraint, Dimensional Constraint, Design Centre, ToolPalette |
| Session 12 | Isometric View Drawings |
| Session 13 | Hyperlink, Data Link, Group |
| | Etransmit, Publish, Publish to Web |
| | Introduction to plotting, Layout, Viewports, Mview, Page setup, Plot Styles, Plot |
| | External references - Xref, Xbind |



| LIST OF EXPERIMENTS: | | |
|-------------------------|--|---------|
| 1 | Foundations. | 1 Plate |
| 2 | Doors & windows. | 1 Plate |
| 3 | Roofs: Wooden roof truss details, Section of RCC & RB flat roofs. | 1 Plate |
| 4 | Floors. (a) Concrete floor finish over ground floor. (b) Terrazzo floor finish over ground floor. (c) Terrazzo tile floor finish over ground. | 1 Plate |
| 5 | Stair case (a) Details of dog legged stairs. (b) Plans of remaining type of stairs. | 1 Plate |
| 6 | Detailed plan and cross section of a domestic septic and soak pit for 10 users as per IS:2470 Part I. | 1 Plate |
| 7 | Detailed plan and cross section of bathroom, kitchen and W.C. connections. | 1 Plate |
| 10 | Two Room building working drawing with AutoCAD. | 1 Plate |
| Text Books: | 1. Singh Gurcharan, <i>Civil Engineering Drawing</i> , Standard Publishers Distributors, Delhi. | |
| Reference Books: | 1. V.B. Sikka, <i>Civil Engineering Drawing</i> , S.K. Kataria & Sons. 2. Sati K.D., <i>Civil Engineering Drawing – I</i> , Asian Publishers Muzaffarnagar. *Latest editions of all the suggested books are recommended. | |

Evaluation of Practical Examination:

Internal Evaluation (50 marks):

Each experiment would be evaluated by the faculty concerned on the date of the experiment on a 4-point scale which would include the practical conducted by the students and a Viva taken by the faculty concerned. The marks shall be entered on the index sheet of the practical file.

Evaluation Scheme:

| PRACTICAL PERFORMANCE & VIVA DURING THE SEMESTER (35 MARKS) | | | | ON THE DAY OF EXAM (15 MARKS) | |
|---|----------------------|-----------------------|-----------------|-------------------------------|-----------------|
| EXPERIMENT (5 MARKS) | FILE WORK (10 MARKS) | ATTENDANCE (10 MARKS) | VIVA (10 MARKS) | EXPERIMENT (5 MARKS) | VIVA (10 MARKS) |

External Evaluation (50marks):

The external evaluation would also be done by the external Examiner based on the experiment conducted during the examination:

| EXPERIMENT (20 MARKS) | FILE WORK (10 MARKS) | VIVA (20 MARKS) | TOTAL EXTERNAL (50 MARKS) |
|-----------------------|----------------------|-----------------|---------------------------|
|-----------------------|----------------------|-----------------|---------------------------|