# FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)

## (An Autonomous Institution)


## B. Tech - Civil Engineering
## Stream C

## Curriculum-2026

**Hormis Nagar, Mookkannoor, Angamaly**
**Kerala - 683 577**

# Curriculum Structure – Stream C

## Physical Sciences

- **Civil Engineering (CE)**
- **Mechanical Engineering (ME)**

### 1. Course Types

The curriculum is designed to provide a balanced and comprehensive learning experience. The courses are categorized as follows:

1. **Program Core Courses (PCC)** – Fundamental courses essential to Physical Sciences.
2. **Program Core - Project-Based Learning (PBL)** – Hands-on learning through projects in the Physical Sciences domain.
3. **Program Elective Courses (PEC)** – Program Specialized courses chosen by students based on interest.
4. **Open Elective/Industry Elective Courses (OEC/IEC)** – Courses from other engineering disciplines or industry-relevant courses.
5. **Humanities and Social Sciences including Management Courses (HMC)** – Ethics, Communication and Managerial Skills Development.
6. **Humanities and Social Sciences including Management Elective Courses (HME) -** Specialized courses chosen by students based on interest in Ethics, Communication and Managerial Skills Development.
7. **Basic Science Courses (BSC)** – Foundational Mathematics, Physics and Chemistry courses.
8. **Engineering Science Courses (ESC)** – Courses applying Engineering principles in practice
9. **Program Core Laboratory Courses (PCL) -** Fundamental laboratory courses essential to Physical Sciences
10. **Skill Enhancement Courses (SEC)** – Technical and Professional skill enhancement courses.
11. **Seminar (SMR)** – Research based discussions and presentations.
12. **Project (PRJ)** – Capstone projects integrating knowledge in Physical Sciences.
13. **Value added Course (VAC) -** Additional courses enhancing domain expertise, including **Minor** (interdisciplinary subjects from other departments) and **Honors** (advanced courses within the student's specialization).
14. **Internship Course (INC/INM)** - Industry/R&D organisations /Academic institutions of national importance/ IDEA Lab /Centre for Future Skills(CFS) oriented experiential learning

## 2. Curriculum Design and Structure

- **Separate Curriculum Tables for First-Year Semesters**:
  - The first and second semesters have individual tabular representations.
  - 50% of students can opt for **Engineering Physics/Universal Human Values in Semester 1** and **Engineering Chemistry/Life Skills and Professional Communication in Semester 2**, and vice versa.

- **Unified Curriculum Table for Higher Semesters**:
  - From the third to eighth semester, a common tabular format is used for Stream C while retaining discipline-specific subjects.
- **10-Day Induction Program**:
  - Introduces students to academic expectations, ethics, and foundational skill-building.

## 3. Abbreviations Used

- **L** – Lecture Hours
- **T** – Tutorial Hours
- **P** – Practical/Laboratory Hours
- **R** – Research/Project-Based Learning
- **CIA** – Continuous Internal Assessment
- **ESE** – End Semester Examination

## 4. Self study hours calculation

$$SS = 1.5L + 0.5T + 0.5P + R$$

Self-Study (SS) hours represent the estimated time a student is expected to spend outside regular contact hours for effective learning, preparation, and reinforcement of course content. These hours are calculated based on the instructional components of the course to ensure adequate academic engagement and attainment of Course Outcomes.

| FIRST SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 Days Compulsory Induction Program | | | | | | | | | | | | | |
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NBCBS101 | BSC | Linear Algebra, Differential Calculus and Laplace Transforms | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 2 | B S1/S2 | 26NNCBS102 | BSC | Engineering Physics -C | 2 | 0 | 2 | 0 | 4 | 40 | 60 | 3 | 4 |
| | | 26NNCBS103 | | Engineering Chemistry -C | | | | | | | | | |
| 3 | C | 26NNVES104 | ESC | Engineering Mechanics | 3 | 1 | 0 | 0 | 5 | 40 | 60 | 3 | 4 |
| 4 | D | 26NNCES106 | ESC | Introduction to Mechanical Engineering and Civil Engineering (Part1:Mechanical Engineering) | 2 | 0 | 0 | 0 | 3 | 20 | 30 | 4 | 4 |
| | | | | (Part2:Civil Engineering) | 2 | 0 | 0 | 0 | 3 | 20 | 30 | | |
| 5 | E | 26ABCES103 | ESC | Algorithmic Thinking with Python | 2 | 0 | 2 | 0 | 4 | 40 | 60 | 4 | 4 |
| 6 | F | 26NNCEL102 | ESC | Mechanical and Civil Engineering Workshop | 0 | 0 | 2 | 0 | 1 | 50 | 50 | 2 | 2 |
| 7 | G S1/S2 | 26ABCHM101 | HMC | Life Skills, Ethics & Wellness | 1 | 0 | 1 | 0 | 2 | 40 | 60 | 1 | 2 |
| | | 26ABCHM102 | | Universal Human Values and Constitution of India | 2 | 0 | 0 | 0 | 3 | 40 | 60 | | |
| 8 | S | 26NNVSE10Q | SEC | Skill Enhancement Course | | | | | | | | 1 | 2 |
| **Total** | | | | | | | | | **28.5** | | | **21** | **25** |

| SECOND SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NBCBS201 | BSC | Integral Calculus and Fourier Series | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 2 | B S1/ S2 | 26NNCBS102 | BSC | Engineering Physics - C | 2 | 0 | 2 | 0 | 4 | 40 | 60 | 3 | 4 |
| | | 26NNCBS103 | | Engineering Chemistry- C | | | | | | | | | |
| 3 | C | 26NNVES203 | ESC | Building Planning and Drafting | 2 | 0 | 2 | 0 | 4 | 40 | 60 | 3 | 4 |
| 4 | D | 26NNCES204 | ESC | Basic Electrical & Electronics Engineering (Part 1: Electrical Engineering) | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 4 | 4 |
| | | | | (Part2:Electronics Engineering) | 2 | 0 | 0 | 0 | 3 | | | | |
| 5 | E | 26NNVPC201 | PCC | Mechanics of Solids | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 6 | F | 26ABCHM201 | HMC | Professional Communication | 1 | 0 | 1 | 0 | 2 | 40 | 60 | 2 | 2 |
| 7 | G S1/ S2 | 26ABCHM101 | HMC | Life Skills and Professional Ethics, Health & Wellness | 1 | 0 | 1 | 0 | 2 | 40 | 60 | 1 | 2 |
| | | 26ABCHM102 | | Universal Human Values and Constitution of India | 2 | 0 | 0 | 0 | 3 | 40 | 60 | | |
| 8 | H | 26NNVLC201 | PCL | Civil Engineering Drafting Lab | 0 | 0 | 2 | 0 | 1 | 50 | 50 | 2 | 2 |
| 9 | S | 26NNVSE20Q | SEC | Skill Enhancement Course | | | | | | | | 1 | 2 |
| **Total** | | | | | | | | | **29** | | | **22** | **26** |

| THIRD SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./ Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NBCBS301 | BSC | Calculus of Complex Functions and Fourier Transforms | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 2 | B | 26NNVPC301 | PCC | Fluid Mechanics | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 3 | C | 26NNVPC302 | PCC | Construction Technology and Management | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 4 | D | 26NNVPB301 | PBL | Surveying and Geomatics | 3 | 0 | 0 | 1 | 5.5 | 60 | 40 | 4 | 4 |
| 5 | E | 26NBCES301 | ESC | Introduction to Artificial Intelligence and Data Science | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 6 | F S3/S4 | 26ABCES302 | ESC | Disaster Management and Sustainable Development | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 2 | 2 |
| | | 26ABCES303 | | Design Thinking and Product Development | | | | | | | | | |
| 7 | G | 26NNVLC301 | PCL | Surveying Laboratory | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 8 | H | 26NNVLC302 | PCL | Material Testing Laboratory - I | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 9 | M | 26NNVVM301 | VAC | MINOR | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 4* | 3* |
| | REMEDIAL | | | | | | | | | | | | |
| 10 | S | 26NNVSE30Q | SEC | Skill Enhancement Course | | | | | | | | 1 | 2 |
| **Total** | | | | | | | | | **26.5/ 31*** | | | **23/27*** | **26/29*** |

***Note:***

- ***Starting from the third semester, students may choose to enroll in Minor courses. Each department will offer one Minor Basket, consisting of five carefully curated subjects designed for students from other disciplines to gain interdisciplinary knowledge and skills.***
- ***Students who do not opt for either Minor or Honour courses shall be offered remedial classes or enrichment activities, as decided by the department based on the student's learning needs to strengthen foundational knowledge and improve academic performance.***

| FOURTH SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./ Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NNCBS401 | BSC | Probability Distributions , Statistics and Numerical Methods | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 2 | B | 26NNVPC401 | PCC | Structural Analysis - I | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 3 | C | 26NNVPC402 | PCC | Transportation Engineering-I | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 4 | D | 26NNVPC403 | PCC | Design of Concrete Structures - I | 2 | 1 | 0 | 0 | 3.5 | 60 | 40 | 3 | 3 |
| 5 | E | 26NNVPB401 | PBL | Water Resource Engineering | 3 | 0 | 0 | 1 | 5.5 | 40 | 60 | 4 | 4 |
| 6 | F S3/S4 | 26ABCES302 | ESC | Disaster Management and Sustainable Development | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 2 | 2 |
| | | 26ABCES303 | | Design Thinking and Product Development | | | | | | | | | |
| 7 | G | 26NNVLC401 | PCL | Fluid Mechanics Laboratory | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 8 | H | 26NNVLC402 | PCL | Material Testing Laboratory - II | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 9 | U | 26NNVVH4Q1 | VAC | HONORS | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 4* | 3* |
| | M | 26NNVVM401 | | MINOR | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 4* | 3* |
| | REMEDIAL | | | | | | | | | | | | |
| 10 | S | 26NNVSE40Q | SEC | Skill Enhancement Course | | | | | | | | 1 | 2 |
| **Total** | | | | | | | | | **25.5/ 34.5*** | | | **23/31*** | **26/32*** |

***Note:***

- ***Disaster Management and Sustainable Development and Design Thinking and Product Development shall be offered in both Semester 3 (S3) and Semester 4 (S4). Half of the branches in the institution will be offered Disaster Management and Sustainable Development in S3 and Design Thinking and Product Development in S4, while the remaining branches will follow the reverse sequence.***
- ***After completing the fourth or fifth semester, during the semester break, every student shall undergo a mandatory internship of a minimum duration of two weeks with industry, R&D organisations /Academic institutions of national importance/ IDEA Lab /Centre for Future Skills(CFS), NGOs, government organizations, or micro, small, and medium enterprises (MSMEs), to gain experiential and industry-oriented exposure. The internship committee shall coordinate and monitor all internship activities with members from the department and sister departments.***
- ***Starting from the fourth semester, students may opt to enrol in Honors courses. Three distinct Honors course baskets will be offered, from which a student may choose one basket to pursue. Each Honors basket consists of five carefully curated subjects aimed at providing advanced knowledge and skills in the respective discipline.***

| FIFTH SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./ Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NNVPC501 | PCC | Structural Analysis - II | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 2 | B | 26NNVPC502 | PCC | Geotechnical Engineering - I | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 3 | C | 26NNVPC503 | PCC | Transportation Engineering-II | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 4 | D | 26NNVPB501 | PBL | Design of Concrete Structures - II | 3 | 0 | 0 | 1 | 5.5 | 60 | 40 | 4 | 4 |
| 5 | E | 26NNVPE51Q | PEC | PEC-1 | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 6 | F S5/S6 | 26ABCHM501 | HMC | Engineering Entrepreneurship & IPR | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 3 | 2 |
| | | 26ABCHM502 | | Economics For Engineers | 2 | 0 | 0 | 0 | | 40 | 60 | | |
| 7 | G | 26NNVLC501 | PCL | Geotechnical Engineering Lab | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 8 | H | 26NNVLC502 | PCL | Transportation Engineering Laboratory | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 9 | U | 26NNVVH5Q1 | VAC | HONORS | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 4* | 3* |
| | M | 26NNVVM501 | | MINOR | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 4* | 3* |
| | REMEDIAL | | | | | | | | | | | | |
| 10 | S | 26NNVSE50Q | SEC | Skill Enhancement Course | | | | | | | | 2 | 2 |
| | S5/S6 | Industrial Visit(Maximum 5 Days are permitted, Not Exceeding more than 3 Working Days) | | | | | | | | | | | |
| **Total** | | | | | | | | | **26.5/ 35.5*** | | | **24/32*** | **26/32*** |

| Program Elective Courses (PEC-1) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVPE511 | Digital Land Surveying and Mapping | Surveying and Geomatics |
| 2 | 26NNVPE512 | Engineering Geology | nil |
| 3 | 26NNVPE513 | Forensic Engineering and Rehabilitation of Structures | Construction Technology and Management |
| 4 | 26NNVPE514 | Open Channel Hydraulics | Fluid Mechanics |
| 5 | 26NNVPE515 | Traffic Engineering and Management | Transportation Engineering - I |
| 6 | 26NNVPE516 | Air Pollution and Control | nil |
| 7 | 26NNVPE517 | Advanced Concrete Technology | Engineering Chemistry, Construction Technology and Management |

| SIXTH SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./ Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NNVPC601 | PCC | Design of Steel Structures | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 2 | B | 26NNVPC602 | PCC | Quantity Surveying and Valuation | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 3 | C | 26NNVPC603 | PCC | Environmental Engineering | 2 | 1 | 0 | 0 | 3.5 | 40 | 60 | 3 | 3 |
| 4 | D | 26NNVPB601 | PBL | Geotechnical Engineering - II | 3 | 0 | 0 | 1 | 5.5 | 60 | 40 | 4 | 4 |
| 5 | E | 26NNVPE62Q | PEC | PEC-2 | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 6 | F S5/S6 | 26ABCHM501 | HMC | Engineering Entrepreneurship & IPR | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 3 | 2 |
| | | 26ABCHM502 | | Economics For Engineers | 2 | 0 | 0 | 0 | | 40 | 60 | | |
| 7 | G | 26NNVLC601 | PCL | Computer Aided Structural Analysis and Design Laboratory | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 8 | H | 26NNVLC602 | PCL | Environmental Engineering Laboratory | 0 | 0 | 3 | 0 | 1.5 | 50 | 50 | 2 | 3 |
| 9 | U | 26NNVVH6Q1 | VAC | HONORS | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 4* | 3* |
| | M | 26NNVVM601 | | MINOR | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3* | 3* |
| | REMEDIAL | | | | | | | | | | | | |
| **10** | S | 26NNVSE60Q | SEC | Skill Enhancement Course | | | | | | | | **1** | **2** |
| | S5/S6 | Industrial Visit (Maximum 5 Days are permitted, Not Exceeding 3 Working Days) | | | | | | | | | | | |
| 11 | | 26ABCIN601 | INM | Mandatory Internship - Evaluation by a Committee | | | | | | | | 1 | |
| **Total** | | | | | | | | | **26.5/ 35.5*** | | | **25/32*** | **26/22*** |

***Note:***

- ***Engineering Entrepreneurship & IPR and Engineering Economics shall be offered in both Semester 5 (S5) and Semester 6 (S6). Half of the branches in the institution shall be offered Engineering Entrepreneurship & IPR in S5 and Engineering Economics in S6, while the remaining branches shall be offered Engineering Economics in S5 and Engineering Entrepreneurship & IPR in S6.***

| Program Elective Courses (PEC-2) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVPE621 | Geographic Information Systems | Surveying and Geomatics |
| 2 | 26NNVPE622 | Geotechnical Investigation | Geotechnical Engineering I |
| 3 | 26NNVPE623 | Analysis and Design of Special Structures | Design of Concrete Structures - I |
| 4 | 26NNVPE624 | AI in Civil Engineering | nil |
| 5 | 26NNVPE625 | Highway Materials and Design | Transportation Engineering - I |
| 6 | 26NNVPE626 | Water Quality Management | nil |
| 7 | 26NNVPE627 | Functional Design of Building | nil |

| SEVENTH SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./ Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NNVPE73Q | PEC | PEC-3 (Internship Students: Self Study/MOOC Approved by the college/Online Classes) | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 2 | B | 26NNVPE74Q | PEC | PEC-4 (Internship Students: Self Study/MOOC Approved by the college/Online Classes) | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 3 | C | 26NNVOE71Q/ 26NNVIE71Q | OEC/IEC | OEC-1/IEC-1 (Internship Students: Self Study/MOOC Approved by the college /Online Classes) | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 4 | D | 26ABCHE71Q | HME | HME - 1 (Internship Students: Self Study/MOOC Approved by the college/Online Classes) | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 1 | 2 |
| 5 | S | 26NNVSMM701 | SMR | Seminar | 0 | 0 | 3 | 0 | 1.5 | 50 | 0 | 2 | 3 |
| 6 | P | 26NNVPR701 | PRJ | Major Project Phase-I/Internship | 0 | 0 | 0 | 8 | 4 | 100 | 0 | 4 | 8 |
| 7 | U | 26NNVVH7Q1 | VAC | HONORS | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3* | 3* |
| | REMEDIAL | | | | | | | | | | | | |
| 8 | S | 26NNVSE70Q | SEC | Skill Enhancement Course | | | | | | | | 1 | 2 |
| **Total** | | | | | | | | | **22/ 26.5*** | | | **17/ 20*** | **24/27*** |

***Note:***

- ***No Grade Points will be awarded for the D slot courses***
- ***Open Electives are courses offered by departments other than the student's own, allowing interdisciplinary learning and broader knowledge acquisition.***
- ***Students who opt for an internship must present a seminar before a committee, which will assess their performance.***

| HME -1 | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26ABCHE711 | Organizational Behavior and Business Communication | Nil |
| 2 | 26ABCHE712 | Introduction to Indian Languages and Culture/ MOOC | Nil |
| 3 | 26ABCHE713 | Proficiency course in French (B1 level)/MOOC | Nil |
| 4 | 26ABCHE714 | Proficiency Course in German (B1 Level)/MOOC | Nil |
| 5 | 26ABCHE715 | Proficiency Course in Spanish (B1 Level)/MOOC | Nil |
| 6 | 26ABCHE715 | Introduction to Japanese Language and Culture(N5 level)/ MOOC | Nil |

| Program Elective Courses (PEC-3) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVPE731 | Environmental Remote Sensing | Surveying and Geomatics |
| 2 | 26NNVPE732 | Ground Improvement Techniques | Geotechnical Engineering - I, Geotechnical Engineering - II |
| 3 | 26NNVPE733 | Bridge Engineering | Design of Concrete Structures - I, Design of Concrete Structures - II, Design of Steel Structures |
| 4 | 26NNVPE734 | Irrigation and Drainage Engineering | Water Resource Engineering |
| 5 | 26NNVPE735 | Pavement construction and management | Transportation Engineering - I |
| 6 | 26NNVPE736 | Solid Waste Management | Nil |
| 7 | 26NNVPE737 | Building Information Modeling | Building Planning and Drafting |

| Program Elective Courses (PEC-4) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVPE741 | Informatics for Infrastructure Management | Surveying and Geomatics |
| 2 | 26NNVPE742 | Geo Environmental Engineering | Geotechnical Engineering - I |
| 3 | 26NNVPE743 | Pre-Engineered Buildings | Design of Steel Structures |
| 4 | 26NNVPE744 | Design of Hydraulic Structures | Fluid Mechanics, Water Resources Engineering |
| 5 | 26NNVPE745 | Road Safety and Management | Transportation Engineering -I, Transportation Engineering - II |
| 6 | 26NNVPE746 | Environmental Impact Assessment | Nil |
| 7 | 26NNVPE747 | Construction Project Management | Construction Technology and Management |

| Open Elective Courses (OEC -1) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVOE711 | Environmental Health and Safety | Nil |
| 2 | 26NNVOE712 | Earth Sciences | Nil |
| 3 | 26NNVOE713 | Construction Forensic Analysis | Nil |
| 4 | 26NNVOE714 | Reuse and Recycle Technology | Nil |

| EIGHTH SEMESTER- Stream C - Civil Engineering | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No | Slot | Course Code | Course Category | Course Title (Course Name) | Credit Structure | | | | SS | Total Marks | | Credits | Hrs./ Week |
| | | | | | L | T | P | R | | CIA | ESE | | |
| 1 | A | 26NNVPE85Q | PEC | PEC-5 (Internship Students: Self Study/MOOC Approved by the College/Online Classes) | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 2 | B | 26NNVOE82Q/ 26NNVIE82Q | OEC/IEC | OEC -2/IEC-2 (Internship Students: Self Study/MOOC Approved by the College/Online Classes) | 3 | 0 | 0 | 0 | 4.5 | 40 | 60 | 3 | 3 |
| 3 | C | 26ABCHE71Q | HME | HME - 1 (Internship Students: Self Study/MOOC Approved by the college/Online Classes) | 2 | 0 | 0 | 0 | 3 | 40 | 60 | 1 | 2 |
| 4 | P | 26NNVPR801/ 26NNVPJ801/ 26NNVIN801 | PRJ/ INC | Major Project Phase-II/Major Project/ Internship | 0 | 0 | 0 | 8 | 4 | 100 | 0 | 6 | 8 |
| **Total** | | | | | | | | | 16 | | | **13** | **16** |

| Program Elective Courses (PEC-5) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVPE851 | Applied Earth System | Nil |
| 2 | 26NNVPE852 | Advanced Foundation Engineering | Geotechnical Engineering - II |
| 3 | 26NNVPE853 | Finite Element Methods | Structural Analysis II |
| 4 | 26NNVPE854 | Mechanics of Fluid Flow | Fluid Mechanics |
| 5 | 26NNVPE855 | Urban Transportation Planning | Transportation Engineering - I |
| 6 | 26NNVPE856 | Climate Change and Sustainability | Nil |
| 7 | 26NNVPE857 | Green Building and Sustainable Construction | Nil |

| Open Elective Courses (OEC -2) | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVOE821 | Public Transportation Systems | Nil |
| 2 | 26NNVOE822 | Municipal Solid Waste Management | Nil |
| 3 | 26NNVOE823 | Sustainable Construction Practices | Nil |

# Minor Courses

| Minor Courses (VAC)- Basket-1 | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVVM301 | Building Materials and Sustainability | Nil |
| 2 | 26NNVVM401 | Building Planning and Design | Nil |
| 3 | 26NNVVM501 | Building Services and Permits | Nil |
| 4 | 26NNVVM601 | Smart-Green Building Systems and Automation | Nil |

# Honor Courses

| Honors Courses (VAC) - Basket-1 | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVVH411 | Green Building Materials and Technologies | Disaster Management and Sustainable Development |
| 2 | 26NNVVH511 | Smart Building Systems and Automation | Nil |
| 3 | 26NNVVH611 | Structural Dynamics and Earthquake Resistant Design | Structural Analysis II |
| 4 | 26NNVVH711 | Prestressed Concrete Design | Structural Analysis I |

| Honors Courses (VAC) - Basket-2 | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVVH421 | Topographic Survey | Surveying and Geomatics |
| 2 | 26NNVVH521 | Survey Data Processing and Digital Mapping | Nil |
| 3 | 26NNVVH621 | Advanced Soil Mechanics | Geotechnical Engineering - I<br>Geotechnical Engineering - II |
| 4 | 26NNVVH721 | Geosynthetics and Reinforced Soil Structures | Geotechnical Engineering - II |

| Honors Courses (VAC) - Basket-3 | | | |
|---|---|---|---|
| **Sl. No:** | **Course Code** | **Name of the Subject** | **Prerequisites(If Any)** |
| 1 | 26NNVVH431 | Flood Risk Management and Assessment | Water Resources Engineering |
| 2 | 26NNVVH531 | Intelligent Transportation System (ITS) | Transportation Engineering I |
| 3 | 26NNVVH631 | Smart Water Systems and Management | Nil |
| 4 | 26NNVVH731 | Hydrology And Climate Change Adaptation | Water Resources Engineering |

## Credit Distribution Overview

The credit allocation across S1-S8 semesters is structured based on different course types, as detailed below.

| *Semester* | *BSC* | *ESC* | *HMC* | *SEC* | *PC+ PCL* | *PC- PBL* | *PE* | *OE/IE* | *SMR+ PRJ/INC* | *INM* | *Total Credits Semester wise* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***S1*** | 6 | 13 | 1 | 1 | - | - | - | - | - | - | **21** |
| ***S2*** | 6 | 9 | 3 | 1 | 3 | - | - | - | - | - | **22** |
| ***S3*** | 3 | 5 | - | 1 | 10 | 4 | - | - | - | - | **23** |
| ***S4*** | 3 | 2 | - | 1 | 13 | 4 | - | - | - | - | **23** |
| ***S5*** | - | - | 3 | 1 | 13 | 4 | 3 | - | - | - | **24** |
| ***S6*** | - | - | 3 | 1 | 11 | 4 | 3 | - | 2 | 1 | **25** |
| ***S7*** | - | - | 1 | 1 | - | - | 6 | 3 | 6 | - | **17** |
| ***S8*** | - | - | 1 | - | - | - | 3 | 3 | 6 | - | **13** |
| ***Total-Type wise /Semester wise*** | **18** | **29** | **12** | **7** | **50** | **16** | **15** | **6** | **14** | **1** | **168** |
| ***Additional Credits*** | | | | | | | | | | | |
| ***Minor Courses*** | Minor courses are offered from the third to the sixth semester. (4+4+4+3=15 Credits) | | | | | | | | | | 15 |
| ***Honor Courses*** | Honors courses are offered from the fourth to the seventh semester. (4+4+4+3=15 Credits) | | | | | | | | | | 15 |
| ***Activity Points Credits*** | NSS, NCC, NSO (National Sports Organization) /Arts/Sports/Games/Union/Club Activities - 50 Points | | | | | | | | | | **1** |
| | English Proficiency Certification (TOFEL, IELTS, BEC etc) /Aptitude Proficiency Certification (GRE, CAT, GMAT etc)/Valid Gate Score/Conferences/Paper Presentation/ Workshop Activities/ Professional Body Activities/Journal Publication, Patents, Start-Up/Skilling Certificates (Approved by the College) - 50 Points | | | | | | | | | | **1** |
| **TOTAL CREDITS- 200** | | | | | | | | | | | |

***75 Points/group for B. Tech Lateral Entry Students**

***A minimum of 100 Activity points are to be acquired for obtaining the 2 Activity Credits required in the curriculum.**

Dr. Jacob Thomas V
Principal
FISAT

Dr. Archana R
Member Secretary
FISAT