

Shree Warana Vibhag Shikshan Mandal's

**WARANA UNIVERSITY,  
WARANANAGAR**

(A State Public University established under Section 3 (6) of MPUA, 2016)

॥ विद्या सर्वस्य भूषणम् ॥



Warana University

Established:2025

**Structure & Syllabus For  
First Year Bachelor of Technology (F.Y. B. Tech)  
Semester- I and II  
(Common to All UG Programs)**

**UNDER**

**Faculty of Science & Technology**

**(As Per National Education Policy – 2020)**

**With Effect from Academic Year 2026-27 Onwards**



Shree Warana Vibhag Shikshan Mandal's  
**TATYASAHEB KORE INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
(AUTONOMOUS), WARANANAGAR, KOLHAPUR



Lead Institute of



**WARANA UNIVERSITY, WARANANAGAR**  
(A State Public University)



# **First Year Bachelor of Technology (F.Y. B. Tech) Semester-I & II**

## **Common to All UG Programs**

Under

**Faculty of Science & Technology**

From Academic Year 2026-27

Structure and Syllabus as per NEP Policy 2020

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## Preface

The National Education Policy (NEP) 2020 has marked a significant transformation in India's education system, aiming to align higher education with the evolving needs of the 21st century. Warana University is firmly committed to the effective implementation of NEP 2020 in its true spirit, with a strong emphasis on holistic, multidisciplinary, and outcome-based education in accordance with the guidelines of the Government of Maharashtra.

We are pleased to present the First Year B. Tech Syllabus, meticulously crafted to align with the core philosophy of NEP 2020, effective from the Academic Year 2026-27. This curriculum is designed to provide students with a robust foundation in Mathematics and Sciences, while simultaneously integrating Vocational and Skill Enhancement courses, the Indian Knowledge System (IKS), and Co-curricular activities. Our goal is to nurture well-rounded engineers who possess both technical excellence and the adaptability required for global demands.

Special emphasis has been given to experiential learning, where theoretical concepts are reinforced through practical laboratory work, project-based learning, and industry-oriented activities. The syllabus also promotes research, innovation, and entrepreneurship, encouraging students to engage in creative and investigative pursuits from the early stages of their academic journey.

We extend our sincere gratitude to the Chairpersons and members of the various Boards of Studies for their dedicated efforts in designing this forward-looking curriculum.

At Warana University, we believe this syllabus will empower our students with the critical thinking, creativity, and technical proficiency necessary to excel in their professional lives. Warana University looks forward to supporting students in this transformative and enriching academic journey.

## Program Outcomes

1. **Engineering Knowledge** Graduates will possess a strong foundation in engineering fundamentals and apply this knowledge to identify, analyze, and solve complex engineering problems. They will be able to understand and apply principles of mathematics, science, and engineering to a variety of real-world situations.
2. **Problem Analysis and Solution Design** Graduates will be able to critically analyze engineering problems and design effective solutions. Using their skills in problem-solving and analytical thinking, they will develop innovative solutions while considering factors such as feasibility, sustainability, and societal impact.
3. **Design and Development of Solutions** Graduates will be able to design and develop solutions for complex engineering problems by selecting and applying appropriate engineering design principles, tools, and techniques. They will also consider ethical, cultural, and environmental aspects in their designs, contributing to sustainable solutions.
4. **Investigation and Research** Students will be equipped with the skills to conduct in-depth investigations and research into engineering problems, using appropriate research methodologies, experiments, and data analysis. This ability will help them to evaluate solutions, optimize designs, and innovate within their field.
5. **Modern Tool Usage** Graduates will be proficient in using modern engineering tools, technologies, and software relevant to their specialization. They will understand the limitations and appropriate application of these tools in solving engineering problems and designing systems, products, and processes.
6. **The Engineer and Society** Graduates will be aware of the impact of engineering solutions on society, the environment, and public safety. They will be equipped to practice engineering in a socially responsible manner, adhering to professional ethics, and contributing positively to the welfare of society.
7. **Environment and Sustainability** Graduates will understand the importance of sustainability and the need to consider environmental impact when designing solutions. They will be capable of creating engineering solutions that promote environmental sustainability, using renewable resources, and minimizing waste and pollution.
8. **Ethics and Professionalism** Graduates will demonstrate professional ethics in their engineering practices, showing integrity, accountability, and social responsibility. They will follow industry standards, uphold ethical decision-making, and work in a manner that reflects the values of the engineering profession.
9. **Teamwork and Communication** Graduates will have strong interpersonal skills, working effectively in multidisciplinary teams. They will communicate ideas and solutions clearly, both in written and oral forms, and be able to collaborate with peers, colleagues, and stakeholders in a professional manner.
10. **Life-Long Learning** Graduates will have a mindset of continuous improvement and lifelong learning. They will be capable of adapting to new technological advancements, seeking out opportunities for professional development, and staying current with industry trends throughout their careers.
11. **Leadership and Innovation** Graduates will demonstrate leadership qualities, take initiative in projects, and contribute to innovative solutions within their field. They will foster creativity, encourage new ideas, and embrace challenges with an entrepreneurial mindset.

### **Duration**

- The Bachelor of Technology (B.Tech.) Programme is a full-time undergraduate programme of four years' duration.
- The programme is structured into eight semesters, with each academic year comprising two semesters. Each semester includes theory courses, laboratory work, skill-based training, project components, and industry-oriented activities as prescribed in the curriculum.
- First Year B.Tech. consists of the first and second semesters, which provide foundational knowledge in basic sciences, engineering principles, and professional skills required for subsequent years of study.

### **Eligibility**

#### **1. Educational Qualification:**

The candidate shall have passed the Higher Secondary Certificate (HSC) examination or its equivalent examination with:

- Physics and Mathematics as compulsory subjects, and
- Any one of the following subjects: Chemistry / Biotechnology / Biology / Technical or Vocational Subject / Computer Science / Information Technology / Informatics Practices / Agriculture / Engineering Graphics / Business Studies.

The candidate shall have obtained:

- At least 45% marks (minimum 134 marks) in the above subjects taken together for Open Category candidates.
- At least 40% marks (minimum 119 marks) for candidates belonging to Reserved Categories, EWS, and Persons with Disability (PwD).

#### **2. Entrance Examination Requirement:**

The candidate shall have obtained a non-zero score in MHT-CET OR JEE (Main).

#### **3. Alternative Qualification (Diploma Route):**

The candidate shall have passed a Diploma in Engineering and Technology and obtained:

- At least 45% marks for Open Category candidates.
- At least 40% marks for Reserved Categories, EWS, and Persons with Disability (PwD).

### **Medium of Instruction**

The medium of instruction for the First Year B.Tech. program shall be English.

## Abbreviations

| Acronym | Full Form                                |
|---------|------------------------------------------|
| IE      | Internal Evaluation                      |
| MSE     | Mid Semester Examination                 |
| ESE     | End Semester Examination                 |
| ISA     | In-Semester Assessment (Term Work)       |
| OE      | Oral Examination                         |
| POE     | Practical & Oral Examination             |
| L       | Lecture                                  |
| T       | Tutorial                                 |
| P       | Practical                                |
| CH      | Contact Hours                            |
| C       | Credit                                   |
| BSC     | Basic Science Course                     |
| ESC     | Engineering Science Course               |
| PCC     | Program Core Courses                     |
| HSSM    | Humanities Social Science and Management |
| VSEC    | Vocational and Skill Enhancement Course  |
| CC      | Co-curricular course                     |
| AEC     | Ability Enhancement Course               |
| IKS     | Indian Knowledge System                  |
| MAC     | Mandatory Audit Course                   |

## Examination & Evaluation Pattern

The examination will be conducted semester wise and will be consisting of either/ all of the following (As prescribed in the structure):

- A. For theory courses the examination scheme includes, Internal Evaluation (IE), Mid Semester Exam (MSE) and End Semester Examination (ESE).
- B. For laboratory / tutorial courses the examination scheme includes following
  - 1) In Sem Assessment (ISA)  
and/or
  - 2) Practical and Oral Examination (POE) or Oral Examination (OE)

### A. Theory Course Assessment Methods:

- 1) Each theory course consists of 6 units with few exceptional courses.
- 2) The weightage for different evaluation tools are IE 20%, MSE 20%, and ESE 60%. The nature of IE is mentioned in the following table

#### I. Internal Evaluation (IE) [20%]:

- a) Use any two evaluation tools from the following list (10 marks each). However, the first and second evaluation tools selected must be different.
- b) The evaluation tools shall be selected by the subject teacher/mentor in consultation with the Head of Department (HOD), considering the level/year of study of the students and the nature of the course.
- c) Evaluation Tool-1 shall cover Units 1, 2, and 3, whereas Evaluation Tool-2 shall cover Units 4, 5, and 6.

| Year                     | Evaluation Tools Available (Course Teacher has to choose any 2)   |
|--------------------------|-------------------------------------------------------------------|
| 1st Year<br>(Sem I & II) | Home Assignment, Class Assignment, Open Book Test, Quiz, MCQ Test |

#### II. Mid Semester Exam (MSE) [20%]:

- a) MSE examination should be monitored by the Central Examination Coordinator after approximately half of the semester is completed. The MSE will be of 50 marks. However, the marks obtained by the student shall be proportionately converted into 20 marks for final assessment.
- b) The syllabus for the MSE shall cover Unit 1, Unit 2, and Unit 3.
- c) **Nature of Question Paper for MSE:**
  - i) The MSE will be conducted for 50 Marks with a duration of 1.5 Hours.
  - ii) The question paper shall comprise one question each on Unit 1, Unit 2, and Unit 3.
  - iii) Of the three questions, any one question shall carry 18 Marks, and the remaining two questions shall carry 16 Marks each ( $18 + 16 + 16 = 50$  Marks).
  - iv) All three questions shall be compulsory. However, each question may provide internal options. total marks carrying such internal options do not exceed 35% of the total 50

Marks (i.e., not exceeding approximately 17 Marks).

- v) Questions shall be framed so as to assess different cognitive levels of Bloom's Taxonomy (viz. Remember, Understand, Apply, Analyze, Evaluate, and Create).

### III. End Semester Exam (ESE) [60%]:

- ESE will be based on the entire syllabus and will be conducted for 60 marks and duration of each exam will be 2 hours.
- For the End Semester Examination (ESE), Units 1, 2, and 3 shall carry 30% weightage, whereas Units 4, 5, and 6 shall carry 70% weightage.
- ESE question paper setting shall be as per the format given below.

#### Nature of Question Paper

**Total Marks: 60**

**Time: 02 Hours**

All questions are compulsory

| Q. No.   |                                          | Marks     | BL | CO |
|----------|------------------------------------------|-----------|----|----|
| <b>1</b> | <b>Attempt the following.</b>            | <b>18</b> |    |    |
|          | <b>a</b> <b>Unit -1</b>                  |           |    |    |
|          | <b>b</b> <b>Unit -2</b>                  |           |    |    |
|          | <b>c</b> <b>Unit -3</b>                  |           |    |    |
| <b>3</b> | <b>Attempt any two of the following.</b> | <b>14</b> |    |    |
|          | <b>a</b> <b>Unit -4</b>                  |           |    |    |
|          | <b>b</b> <b>Unit -4</b>                  |           |    |    |
|          | <b>c</b> <b>Unit -4</b>                  |           |    |    |
| <b>4</b> | <b>Attempt any two of the following.</b> | <b>14</b> |    |    |
|          | <b>a</b> <b>Unit -5</b>                  |           |    |    |
|          | <b>b</b> <b>Unit -5</b>                  |           |    |    |
|          | <b>c</b> <b>Unit -5</b>                  |           |    |    |
| <b>5</b> | <b>Attempt any two of the following.</b> | <b>14</b> |    |    |
|          | <b>a</b> <b>Unit -6</b>                  |           |    |    |
|          | <b>b</b> <b>Unit -6</b>                  |           |    |    |
|          | <b>c</b> <b>Unit -6</b>                  |           |    |    |

\* For specific courses, the nature of the question paper may vary based on the pedagogical and assessment requirements of the respective course with approval of concerned HOD.

\* Questions shall be framed so as to assess different cognitive levels of Bloom's Taxonomy (viz. Remember, Understand, Apply, Analyze, Evaluate, and Create).

## B. Laboratory/Tutorial Course Assessment Methods:

### I. In Sem Assessment (ISA):

#### Laboratory/Tutorial Work Assessment Criteria

| Assessment Criteria Description                                                                                                                                              | Weightage |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Assessment of Journal (Punctuality) / Laboratory Experiments<br>Journal Writing / Performance in Lab                                                                         | 40%       |
| Assessment of Regular Notebook /Survey report about Lab<br>Course / Interview related to Lab work / Oral based on Lab<br>Course / Individual Industrial Visit for Lab Course | 20%       |
| Seminar Based on Laboratory Work /<br>Demonstration Based on Laboratory Work /<br>Implementation on Lab Safety & Discipline / Lab Experiment<br>Model Preparation            | 20%       |
| Regular Attendance for Lab                                                                                                                                                   | 20%       |

\* Course teacher can use above mentioned criteria and weightage or he may use modified criteria and weightage as per the nature of content in syllabus of his concerned practical/tutorial course.

### II. Oral Examination (OE):

#### OE Assessment Criteria

| Assessment Criteria Description    | Weightage |
|------------------------------------|-----------|
| Understanding of concepts          | 25%       |
| Analytical/Problem solving ability | 25%       |
| Innovative/Critical thinking       | 25%       |
| Ability to communicate/express     | 25%       |

\* The course teacher may use the above-mentioned assessment criteria and weightage or may adopt modified criteria and weightage as deemed appropriate to meet the pedagogical and assessment requirements of the respective course.

### III. Practical Oral Examination (POE):

#### POE Assessment Criteria

| Assessment Criteria Description | Weightage |
|---------------------------------|-----------|
| Experiment planning & execution | 60%       |
| Experimental writeup            | 20%       |
| Performance in oral (Viva-Voce) | 20%       |

\* Course teacher can use above mentioned weightage of marks or he may decide the weightage for POE as per the nature of content in syllabus of his concerned practical course.

### Passing criteria:

- 1) Passing with a minimum of 40% marks in the ESE for theory course is mandatory. The duration of the ESE examination will be 2:00 hours, and for certain courses (as mentioned in the syllabus), it will be 2:30 hours. Passing with a minimum of 40% marks in IE for theory course is mandatory. In addition to passing in ESE & IE combined passing with a minimum of 40% marks in MSE, IE, and ESE is required. There is no separate passing requirement for MSE.
- 2) If a student fails to secure the required combined 40% marks in a course, the student shall be declared failed in that course. To pass the course, the student must reappear for the End Semester Examination (ESE) and obtain sufficient marks to satisfy the combined 40% passing requirement. The marks obtained in the Mid Semester Examination (MSE) and Internal Evaluation (IE) are final and shall not be revised, improved, or re-evaluated after the completion of the respective semester. Therefore, a student who falls short of the required combined 40% marks must secure the necessary additional marks through the ESE only.
- 3) Separate passing with a minimum of 40% marks in ISA and/or POE/OE for laboratory course is mandatory.
- 4) Student should clear all first year passing heads before admits to third year and clear all second year passing heads before admits to fourth year.
- 5) Aggregate of a particular year (both these semesters) shall be considered as a separate head of passing for the result of that concerned year and 45% aggregate score is mandatory. The student not fulfilling this criterion can improve the score of 45% aggregate through appearing in re-examination for maximum of three theory courses.
- 6) If student fails to improve the score of 45% aggregate through appearing in re-examination then he/she can improve the score of 45% aggregate by re-appearing in subsequent concern odd semesters (3, 5, 7) or concern even semesters (4, 6, 8) ESE of theory course examination in next academic year.

### Eligibility criteria for End Semester Examination:

A student shall secure a minimum **40%** marks in **IE** and **ISA** of a particular course and minimum **75%** attendance for lectures and lab sessions otherwise he/she shall not be eligible for ESE.

### Grading System:

The Semester Grade Point Average (SGPA) shall be calculated for each semester and Cumulative Grade Point Average (CGPA) shall be calculated at the end of all semesters.

The standard of passing shall be in accordance with the following table:

**Table1:** Conversion of Marks out of 100 to grade point (Passing: 40)

| Sr. No | Marks Range out of 100 | Grade point | CGPA        | Letter Grade     |
|--------|------------------------|-------------|-------------|------------------|
| 1      | Detained               | 0 (zero)    | —           | D: Detained      |
| 2      | Absent                 | 0 (zero)    | —           | AB: Absent       |
| 3      | 0 – 39                 | 0 (zero)    | 0.0 – 4.20  | F: Fail          |
| 4      | 40 – 44                | 4           | 4.21 – 4.72 | P: Pass          |
| 5      | 45 – 49                | 5           | 4.73 – 5.25 | C: Average       |
| 6      | 50 – 59                | 6           | 5.26 – 5.78 | B: Above Average |
| 7      | 60 – 69                | 7           | 5.79 – 6.31 | B+: Good         |
| 8      | 70 – 79                | 8           | 6.32 – 7.54 | A: Very Good     |
| 9      | 80 – 89                | 9           | 7.55 – 8.77 | A+: Excellent    |
| 10     | 90-100                 | 10          | Above 8.77  | O: Outstanding   |

\* Conversion of marks out of 150, 75, 50, 25 etc. should be converted using above table.

**Note:** The award of the final Grade for the degree of B.Tech. shall be calculated based on CGPA.

**Calculation of SGPA and CGPA:**

1. Semester Grade Point Average (**SGPA**)

$$SGPA = \frac{\sum (Course\ credits \times Grade\ points\ obtained) \text{ of a Semester}}{\sum (Course\ credits) \text{ of respective Semester}}$$

2. Cumulative Grade Point Average (**CGPA**)

$$CGPA = \frac{\sum \left( \frac{Total\ Credits\ of\ a\ Semester \times SGPA\ of\ Respective\ Semester}{Course\ Credits} \right) \text{ of all semesters}}{\sum (Course\ Credits) \text{ of all Semesters}}$$

- Marks obtained  $\geq 0.5$  shall be rounded off to next higher digit.
- The SGPA & CGPA shall be rounded off to 2 decimal points.
- CGPA will be calculated cumulatively from Sem. I to Sem. VIII for regular students and from Sem. III to Sem. VIII for lateral entry students.

**Note:** An equivalent certificate of CGPA to percentage of marks will be provided to student on candidate's demand after remitting prescribed fees by Warana University.

## First Year B. Tech

### Curriculum Structure and Evaluation Scheme of Semester-I for Group A

| Course Category  | Course Code                             | Course Title                                     | Teaching and Credit Scheme |   |   |    |     | Examination and Evaluation Scheme |      |                 |    |
|------------------|-----------------------------------------|--------------------------------------------------|----------------------------|---|---|----|-----|-----------------------------------|------|-----------------|----|
|                  |                                         |                                                  | L                          | T | P | CH | C   | Comp onent                        | Mark | Min for Passing |    |
| BSC              | 2601UFYEBSC101                          | Engineering Physics                              | 3                          | - | - | 3  | 3   | IE                                | 20   | 8               | 40 |
|                  |                                         |                                                  |                            |   |   |    |     | MSE                               | 20   | -               |    |
|                  |                                         |                                                  |                            |   |   |    |     | ESE                               | 60   | 24              |    |
|                  | 2601UFYEBSC101T                         | Engineering Physics Lab                          | -                          | - | 1 | 2  | 1   | ISA                               | 25   | 10              |    |
|                  | 2601UFYEBSC102                          | Engineering Mathematics-I                        | 3                          | - | - | 3  | 3   | IE                                | 50   | 8               | 40 |
|                  |                                         |                                                  |                            |   |   |    |     | MSE                               | 50   | -               |    |
|                  |                                         |                                                  |                            |   |   |    |     | ESE                               | 60   | 24              |    |
| 2601UFYEBSC102T  | Engineering Mathematics-I Tutorial      | -                                                | 1                          | - | 1 | 1  | ISA | 25                                | 10   |                 |    |
| ESC              | 2601UFYEEESC103                         | Basic Electrical and Electronics Engineering     | 2                          | - | - | 2  | 2   | IE                                | 20   | 8               | 40 |
|                  |                                         |                                                  |                            |   |   |    |     | MSE                               | 50   | -               |    |
|                  |                                         |                                                  |                            |   |   |    |     | ESE                               | 60   | 24              |    |
|                  | 2601UFYEEESC103T                        | Basic Electrical & Electronics Engineering Lab   | -                          | - | 1 | 2  | 1   | ISA                               | 25   | 10              |    |
|                  | 2601UFYEEESC104                         | Basic Civil Engineering                          | 2                          | - | - | 2  | 2   | IE                                | 20   | 8               | 40 |
|                  |                                         |                                                  |                            |   |   |    |     | MSE                               | 50   | -               |    |
|                  |                                         |                                                  |                            |   |   |    |     | ESE                               | 60   | 24              |    |
|                  | 2601UFYEEESC104T                        | Basic Civil Engineering Lab                      | -                          | - | 1 | 2  | 1   | ISA                               | 25   | 10              |    |
|                  | 2601UFYEEESC105                         | Computer Aided Engineering Drawing               | 2                          | - | - | 2  | 2   | IE                                | 20   | 8               | 40 |
|                  |                                         |                                                  |                            |   |   |    |     | MSE                               | 50   | -               |    |
|                  |                                         |                                                  |                            |   |   |    |     | ESE                               | 60   | 24              |    |
| 2601UFYEEESC105T | Computer Aided Engineering Drawing Lab  | -                                                | -                          | 1 | 2 | 1  | ISA | 25                                | 10   |                 |    |
| HSSM             | 2601UFYEHSSM1061/<br>2601UFYEHSSM1062   | Communication Skills / German Language I         | 1                          | - | - | 1  | 1   | IE                                | 15   | 6               | 30 |
|                  |                                         |                                                  |                            |   |   |    |     | MSE                               | 20   | -               |    |
|                  |                                         |                                                  |                            |   |   |    |     | ESE                               | 40   | 16              |    |
|                  | 2601UFYEHSSM1061T/<br>2601UFYEHSSM1062T | Communication Skills lab / German Language I Lab | -                          | - | 1 | 2  | 1   | ISA                               | 25   | 10              |    |
| CC               | 2601UFYECC107T                          | Artificial Intelligence & Cyber Security Lab     | -                          | - | 1 | 2  | 1   | ISA                               | 25   | 10              |    |
| VSEC             | 2601UFYEVSEC108T                        | Manufacturing Techniques Lab                     | -                          | - | 1 | 2  | 1   | ISA                               | 50   | 20              |    |
| MAC              | 2601UFYEMAC109A                         | Democracy, Elections and Good Governance*        | -                          | - | - | -  | -   | -                                 | -    | -               |    |
| Total            |                                         |                                                  | 13                         | 1 | 7 | 28 | 21  |                                   | 800  |                 |    |

## First Year B. Tech

### Curriculum Structure and Evaluation Scheme of Semester-II for Group A

| Course Category | Course Code                             | Course Title                                                        | Teaching and Credit Scheme |   |   |    |    | Examination and Evaluation Scheme |      |                    |    |
|-----------------|-----------------------------------------|---------------------------------------------------------------------|----------------------------|---|---|----|----|-----------------------------------|------|--------------------|----|
|                 |                                         |                                                                     | L                          | T | P | CH | C  | Comp<br>onent                     | Mark | Min for<br>Passing |    |
| BSC             | 2601UFYEBSC110                          | Engineering Chemistry                                               | 3                          | - | - | 3  | 3  | IE                                | 20   | 8                  | 40 |
|                 |                                         |                                                                     |                            |   |   |    |    | MSE                               | 50   | -                  |    |
|                 |                                         |                                                                     |                            |   |   |    |    | ESE                               | 60   | 24                 |    |
|                 | 2601UFYEBSC110T                         | Engineering Chemistry Lab                                           | -                          | - | 1 | 2  | 1  | ISA                               | 25   | 10                 |    |
|                 | 2601UFYEBSC201                          | Engineering Mathematics-II                                          | 3                          | - | - | 3  | 3  | IE                                | 20   | 8                  | 40 |
|                 |                                         |                                                                     |                            |   |   |    |    | MSE                               | 50   | -                  |    |
|                 |                                         |                                                                     |                            |   |   |    |    | ESE                               | 60   | 24                 |    |
|                 | 2601UFYEBSC201T                         | Engineering Mathematics- II<br>Tutorial                             | -                          | 1 | - | 1  | 1  | ISA                               | 25   | 10                 |    |
| PCC             | 2601UFYEPCC111                          | Computer Programming in C                                           | 2                          | - | - | 2  | 2  | IE                                | 20   | 8                  | 40 |
|                 |                                         |                                                                     |                            |   |   |    |    | MSE                               | 50   | -                  |    |
|                 |                                         |                                                                     |                            |   |   |    |    | ESE                               | 60   | 24                 |    |
|                 | 2601UFYEPCC111T                         | Computer Programming in C<br>Lab                                    | -                          | - | 1 | 2  | 1  | ISA                               | 25   | 10                 |    |
| ESC             | 2601UFYEEESC112                         | Engineering Mechanics                                               | 2                          | - | - | 2  | 2  | IE                                | 20   | 8                  | 40 |
|                 |                                         |                                                                     |                            |   |   |    |    | MSE                               | 20   | -                  |    |
|                 |                                         |                                                                     |                            |   |   |    |    | ESE                               | 60   | 24                 |    |
|                 | 2601UFYEEESC112T                        | Engineering Mechanics Lab                                           | -                          | - | 1 | 2  | 1  | ISA                               | 25   | 10                 |    |
|                 | 2601UFYEEESC113                         | Basic Mechanical Engineering                                        | 2                          | - | - | 2  | 2  | IE                                | 20   | 8                  | 40 |
|                 |                                         |                                                                     |                            |   |   |    |    | MSE                               | 50   | -                  |    |
|                 |                                         |                                                                     |                            |   |   |    |    | ESE                               | 60   | 24                 |    |
|                 | 2601UFYEEESC113T                        | Basic Mechanical Engineering<br>Lab                                 | -                          | - | 1 | 2  | 1  | ISA                               | 25   | 10                 |    |
| IKS             | 2601UFYEIKS114T                         | Indian Knowledge System                                             | 1                          | - | - | 1  | 1  | ISA                               | 25   | 10                 |    |
| HSSM            | 2601UFYEHSSM2021/<br>2601UFYEHSSM2022   | Employability Enhancement<br>Skills / German Language II            | 1                          | - | - | 1  | 1  | IE                                | 15   | 6                  | 30 |
|                 |                                         |                                                                     |                            |   |   |    |    | MSE                               | 20   | -                  |    |
|                 |                                         |                                                                     |                            |   |   |    |    | ESE                               | 40   | 16                 |    |
|                 | 2601UFYEHSSM2021T/<br>2601UFYEHSSM2022T | Employability Enhancement<br>Skills Lab / German Language<br>II Lab | -                          | - | 1 | 2  | 1  | ISA                               | 25   | 10                 |    |
| CC              | 2601UFYECC115T                          | Inquisitive Learning                                                | -                          | - | 1 | 2  | 1  | ISA                               | 25   | 10                 |    |
|                 |                                         |                                                                     |                            |   |   |    |    | OE                                | 25   | 10                 |    |
| Total           |                                         |                                                                     | 14                         | 1 | 6 | 27 | 21 |                                   | 800  |                    |    |

## First Year B. Tech

### Curriculum Structure and Evaluation Scheme of Semester-I for Group B

| Course Category | Course Code                             | Course Title                                     | Teaching and Credit Scheme |   |   |    |    | Examination and Evaluation Scheme |       |                         |    |
|-----------------|-----------------------------------------|--------------------------------------------------|----------------------------|---|---|----|----|-----------------------------------|-------|-------------------------|----|
|                 |                                         |                                                  | L                          | T | P | CH | C  | Comp<br>onent                     | Marks | Min %<br>for<br>Passing |    |
| BSC             | 2601UFYEBSC110                          | Engineering Chemistry                            | 3                          | - | - | 3  | 3  | IE                                | 20    | 8                       | 40 |
|                 |                                         |                                                  |                            |   |   |    |    | MSE                               | 20    | -                       |    |
|                 |                                         |                                                  |                            |   |   |    |    | ESE                               | 60    | 24                      |    |
|                 | 2601UFYEBSC110T                         | Engineering Chemistry Lab                        | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10                      |    |
|                 | 2601UFYEBSC102                          | Engineering Mathematics-I                        | 3                          | - | - | 3  | 3  | IE                                | 20    | 8                       | 40 |
|                 |                                         |                                                  |                            |   |   |    |    | MSE                               | 20    | -                       |    |
|                 |                                         |                                                  |                            |   |   |    |    | ESE                               | 60    | 24                      |    |
|                 | 2601UFYEBSC102T                         | Engineering Mathematics- I Tutorial              | -                          | 1 | - | 1  | 1  | ISA                               | 25    | 10                      |    |
| PCC             | 2601UFYEPCC111                          | Computer Programming in C                        | 2                          | - | - | 2  | 2  | IE                                | 20    | 8                       | 40 |
|                 |                                         |                                                  |                            |   |   |    |    | MSE                               | 20    | -                       |    |
|                 |                                         |                                                  |                            |   |   |    |    | ESE                               | 60    | 24                      |    |
|                 | 2601UFYEPCC111T                         | Computer Programming in C Lab                    | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10                      |    |
| ESC             | 2601UFYEESC112                          | Engineering Mechanics                            | 2                          | - | - | 2  | 2  | IE                                | 20    | 8                       | 40 |
|                 |                                         |                                                  |                            |   |   |    |    | MSE                               | 20    | -                       |    |
|                 |                                         |                                                  |                            |   |   |    |    | ESE                               | 60    | 24                      |    |
|                 | 2601UFYEESC112T                         | Engineering Mechanics Lab                        | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10                      |    |
|                 | 2601UFYEESC113                          | Basic Mechanical Engineering                     | 2                          | - | - | 2  | 2  | IE                                | 20    | 8                       | 40 |
|                 |                                         |                                                  |                            |   |   |    |    | MSE                               | 20    | -                       |    |
|                 |                                         |                                                  |                            |   |   |    |    | ESE                               | 60    | 24                      |    |
|                 | 2601UFYEESC113T                         | Basic Mechanical Engineering Lab                 | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10                      |    |
| HSSM            | 2601UFYEHSSM1061/<br>2601UFYEHSSM1062   | Communication Skills / German Language I         | 1                          | - | - | 1  | 1  | IE                                | 15    | 6                       | 30 |
|                 |                                         |                                                  |                            |   |   |    |    | MSE                               | 20    | -                       |    |
|                 |                                         |                                                  |                            |   |   |    |    | ESE                               | 40    | 16                      |    |
|                 | 2601UFYEHSSM1061T/<br>2601UFYEHSSM1062T | Communication Skills lab / German Language I Lab | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10                      |    |
| IKS             | 2601UFYEIKS114T                         | Indian Knowledge System                          | 1                          | - | - | 1  | 1  | ISA                               | 25    | 10                      |    |
| CC              | 2601UFYECC115T                          | Inquisitive Learning                             | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10                      |    |
|                 |                                         |                                                  |                            |   |   |    |    | OE                                | 25    | 10                      |    |
| MAC             | 2601UFYEMAC109A                         | Democracy, Elections and Good Governance*        | -                          | - | - | -  | -  | -                                 | -     | -                       |    |
| Total           |                                         |                                                  | 14                         | 1 | 6 | 27 | 21 | --                                | 800   | --                      |    |

## First Year B. Tech

### Curriculum Structure and Evaluation Scheme of Semester-II for Group B

| Course Category | Course Code                             | Course Title                                                  | Teaching and Credit Scheme |   |   |    |    | Examination and Evaluation Scheme |       |                 |    |
|-----------------|-----------------------------------------|---------------------------------------------------------------|----------------------------|---|---|----|----|-----------------------------------|-------|-----------------|----|
|                 |                                         |                                                               | L                          | T | P | CH | C  | Component                         | Marks | Min for Passing |    |
| BSC             | 2601UFYEBSC101                          | Engineering Physics                                           | 3                          | - | - | 3  | 3  | IE                                | 20    | 8               | 40 |
|                 |                                         |                                                               |                            |   |   |    |    | MSE                               | 20    | -               |    |
|                 |                                         |                                                               |                            |   |   |    |    | ESE                               | 60    | 24              |    |
|                 | 2601UFYEBSC101T                         | Engineering Physics Lab                                       | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10              |    |
|                 | 2601UFYEBSC201                          | Engineering Mathematics-II                                    | 3                          | - | - | 3  | 3  | IE                                | 20    | 8               | 40 |
|                 |                                         |                                                               |                            |   |   |    |    | MSE                               | 20    | -               |    |
|                 |                                         |                                                               |                            |   |   |    |    | ESE                               | 60    | 24              |    |
|                 | 2601UFYEBSC201T                         | Engineering Mathematics-II Tutorial                           | -                          | 1 | - | 1  | 1  | ISA                               | 25    | 10              |    |
| ESC             | 2601UFYEEESC103                         | Basic Electrical and Electronics Engineering                  | 2                          | - | - | 2  | 2  | IE                                | 20    | 8               | 40 |
|                 |                                         |                                                               |                            |   |   |    |    | MSE                               | 20    | -               |    |
|                 |                                         |                                                               |                            |   |   |    |    | ESE                               | 60    | 24              |    |
|                 | 2601UFYEEESC103T                        | Basic Electrical & Electronics Engineering Lab                | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10              |    |
|                 | 2601UFYEEESC104                         | Basic Civil Engineering                                       | 2                          | - | - | 2  | 2  | IE                                | 20    | 8               | 40 |
|                 |                                         |                                                               |                            |   |   |    |    | MSE                               | 20    | -               |    |
|                 |                                         |                                                               |                            |   |   |    |    | ESE                               | 60    | 24              |    |
|                 | 2601UFYEEESC104T                        | Basic Civil Engineering Lab                                   | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10              |    |
|                 | 2601UFYEEESC105                         | Computer Aided Engineering Drawing                            | 2                          | - | - | 2  | 2  | IE                                | 20    | 8               | 40 |
|                 |                                         |                                                               |                            |   |   |    |    | MSE                               | 20    | -               |    |
|                 |                                         |                                                               |                            |   |   |    |    | ESE                               | 60    | 24              |    |
|                 | 2601UFYEEESC105T                        | Computer Aided Engineering Drawing Lab                        | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10              |    |
| HSSM            | 2601UFYEHSSM2021/<br>2601UFYEHSSM2022   | Employability Enhancement Skills / German Language II         | 1                          | - | - | 1  | 1  | IE                                | 15    | 6               | 30 |
|                 |                                         |                                                               |                            |   |   |    |    | MSE                               | 20    | -               |    |
|                 |                                         |                                                               |                            |   |   |    |    | ESE                               | 40    | 16              |    |
|                 | 2601UFYEHSSM2021T/<br>2601UFYEHSSM2022T | Employability Enhancement Skills Lab / German Language II Lab | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10              |    |
| CC              | 2601UFYECC107T                          | Artificial Intelligence & Cyber Security Lab                  | -                          | - | 1 | 2  | 1  | ISA                               | 25    | 10              |    |
| VSEC            | 2601UFYEVSEC108T                        | Manufacturing Techniques Lab                                  | -                          | - | 1 | 2  | 1  | ISA                               | 50    | 20              |    |
| Total           |                                         |                                                               | 13                         | 1 | 7 | 28 | 21 |                                   | 800   |                 |    |