# K. S. INSTITUTE OF TECHNOLOGY, BENGALURU

An Autonomous Institute under VTU, Approved by AICTE
Scheme of Teaching and examinations-2025
Outcome-Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2025-26)

**II Semester** **(For students attending under Physics Group)**

| Sl No | Course and course code | | Course title | Course category | TD/PSB | Teaching Hours/Week | | | | Examination | | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory Lecture | Tutorial | Practical/ Drawing | SDA | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| | | | | | | L | T | P | S | | | | | |
| 1 | *ASC | 25BMAXX201 | Applied Mathematics -II | CORE | Maths Dept. | 3 | 2 | 0 | 0 | 03 | 50 | 50 | 100 | 04 |
| 2 | #ASC( IC) | 25BPHXX202 | Applied Physics | IPCC | Physics Dept. | 3 | 0 | 2 | 0 | 03 | 50 | 50 | 100 | 04 |
| 3 | ESC | 25BCED203X | Computer-Aided Engineering Drawing | IPCC | Mechanical Engg. Dept. | 2 | 0 | 2 | 0 | 03 | 50 | 50 | 100 | 03 |
| 4 | ESC-II | 25BESC204X | Engineering Science Course-II | CORE | Respective Engg. Dept. | 3 | 0 | 0 | 0 | 03 | 50 | 50 | 100 | 03 |
| 5 | PSC | 25BPSC205X | Program Specific Courses | CORE | Any Dept. | 3 | 0 | 0 | 0 | 03 | 50 | 50 | 100 | 03 |
| 6 | AEC (NCMC) | 25BSDAK206 | Soft Skills | AEC | Humanities Dept. | 0 | 0 | 0 | 2 | 02 | 100 | -- | 100 | PP |
| 7 | PSC | 25BPSL207X | Program Specific Course Lab | PSC-Lab | Respective Engg. Dept. | 0 | 0 | 2 | 0 | 02 | 50 | 50 | 100 | 01 |
| 8 | AEC/SDC | 25BIDPK208 | Interdisciplinary Project-Based Learning | AEC | Any Dept. | 0 | 0 | 0 | 2 | 01 | 50 | 50 | 100 | 01 |
| 9 | HSMS | 25BKSKK209/ 25BKBKK209 | Samskrutika Kannada/ Balake Kannada | HSMC | Humanities Dept. | 1 | 0 | 0 | 0 | 01 | 50 | 50 | 100 | 01 |
| | | | | | **TOTAL** | **16** | **2** | **6** | **2** | **21** | **500** | **400** | **900** | **20** |

**10. AICTE Activity Points: Students have to must earn 100 activity points between 1st to 8th Semester for the Award of Degree**.

SDA stands for Skill Development Activities, while TD/PSB refers to the Teaching Department or Paper Setting Board. ASC denotes Applied Science Courses, and

ESC represents Engineering Science Courses. ETC stands for Emerging Technology Courses, and AEC refers to Ability Enhancement Courses. HSMS includes Humanity and Social Science and Management Courses, whereas SDC stands for Skill Development Courses. CIE means Continuous Internal Evaluation, and SEE is the abbreviation for Semester End Examination. IC refers to an Integrated Course, which is a theory course integrated with a practical component. NCMC: Non Credit mandatory course, PP: Pass/Pass for NCMC if student have successfully completed the CIE requirement, otherwise NP (not Pass) shall be awarded. PP is essential for the award of the degree. IDP: Interdisciplinary Project.

| **Credit Definition:** | 04-Credits courses are to be designed for 50 hours of Teaching-Learning Session 04-Credits (IC) are to be designed for 40 hours' theory and 12-14 hours of practical sessions<br>03-Credits courses are to be designed for 40 hours of Teaching-Learning Session<br>02- Credits courses are to be designed for 25 hours of Teaching-Learning Session<br>01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions |
|---|---|
| 1-hour Lecture **(L)** per week=**1Credit**.<br>2-hours Tutorial**(T)** per week=**1Credit**<br>2-hours Practical / Drawing (**P**) per week=**1Credit**<br>**2-**hous Skill Development Actives **(SDA)** per week = **1 Credit** | |

**Student's Induction Program:** Motivating (Inspiring) Activities under the Induction program – The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students' character needs to be nurtured as an essential quality by which he/she would understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc.

**AICTE Activity Points** to be earned by Students admitted to the BE/B.Tech./B.Plan day college programs are required to earn AICTE Activity Points in addition to fulfilling academic requirements, as outlined in Chapter 6 of the AICTE Model Internship Guidelines. Every regular student enrolled in the 4-year degree program must earn **100 Activity Points**, while students entering through lateral entry into the second year must earn **75 Activity Points** for the award of the degree. Students who transfer from other universities into the fifth semester are required to earn **50 Activity Points**, starting from the year of their entry into VTU. The earned Activity Points will be reflected in the student's **8th Semester Grade Card**. These activities may be undertaken at any time during the semester, including weekends and holidays, and can be spread out over the course of the program according to the student's convenience. However, the **minimum hours required for each activity must be fulfilled**. Activity Points are **non-credit**, do **not affect the SGPA or CGPA**, and are **not required for vertical progression**. In case a student fails to earn the prescribed number of Activity Points, the **8th Semester Grade Card will be issued only after the required points are earned.**

* The mathematics subject should be taught by a single faculty member per division, with no sharing of the course (subject) module-wise by different faculty members.

#- 25BPHXX202 SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination. ESC or ETC of 03 credits Courses shall have only a theory component (L: T: P: S=3:0:0:0) or if the nature then, of course, required practical learning syllabus shall be designed as an Integrated course (L: T: P: S= 2:0:2:0). All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ.

| **Applied Mathematics-II** | | | | | **ESC-II: Engineering Science Courses-II** | | | | | **PSC: Program Specific Courses** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | Title | L | T | P | Code | Title | L | T | P | Code | Title | L | T | P |
| **25BMACS201** | Numerical Methods | 3 | 2 | 0 | **25BESC204A** | Building Sciences & Mechanic | 3 | 0 | 0 | **25BPSC205A** | Engineering Mechanics | 3 | 0 | 0 |
| **25BMAEC201** | Calculus, Laplace Transform and Numerical Techniques | 3 | 2 | 0 | **25BESC 204B** | Introduction to Electrical Engineering | 3 | 0 | 0 | **25BPSC205B** | Elements of Mechanical Engineering | 3 | 0 | 0 |
| **25BMAME201** | Multivariable Calculus and Numerical Methods | 3 | 2 | 0 | **25BESC 204C** | Introduction to Electronics & Communication Engineering | 3 | 0 | 0 | **25BPSC205C** | Basics of Electrical Engineering | 3 | 0 | 0 |
| **Applied Physics** | | | | | **25BESC 204D** | Introduction to Mechanical Engineering | 3 | 0 | 0 | **25BPSC205D** | Fundamentals of Electronics & Communication Engineering | 3 | 0 | 0 |
| 25BPHCS202 | Quantum Physics and Applications | 3 | 0 | 2 | | | | | | | | | | |
| 25BPHEC202 | Quantum Physics and Electronic Sensors | 3 | 0 | 2 | **25BESC 204E** | Essentials of Information Technology | 3 | 0 | 0 | **25BPSC205E** | Principles of Programming Using C | 3 | 0 | 0 |
| 25BPHME202 | Physics of Materials | 3 | 0 | 2 | **25BESC 204F** | Introduction to Linux | 3 | 0 | 0 | **PSC Lab: Program Specific Courses Lab** | | | | |
| **CAED: Computer-Aided Engineering Drawing** | | | | | **25BESC 204G** | Introduction to Engineering Mechanics | 3 | 0 | 0 | **25BPSL207A** | Mechanics & Material Lab | 0 | 0 | 2 |
| **25BCED203A** | Computer-Aided Engineering Drawing for CSE stream | 2 | 0 | 2 | **25BESC 204H** | Introduction to Cyber Security | 3 | 0 | 0 | **25BPSL207B** | Elements of Mechanical Engineering Lab | 0 | 0 | 2 |
| **25BCED203B** | Computer-Aided Engineering Drawing for ECE stream | 2 | 0 | 2 | | | | | | **25BPSL207C** | Basics of Electrical Engineering Lab | 0 | 0 | 2 |
| **25BCED203C** | Computer-Aided Engineering Drawing for ME stream | 2 | 0 | 2 | | | | | | **25BPSL207D** | Fundamentals of Electronics & Communication Engineering Lab | 0 | 0 | 2 |
| | | | | | | | | | | **25BPSL207E** | C-Programming Lab | 0 | 0 | 2 |

# K. S. INSTITUTE OF TECHNOLOGY, BENGALURU

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**Scheme of Teachingandexaminations-2025**

Outcome-Based Education (OBE)and Choice Based Credit System (CBCS)

(Effective from the academic year2025-26)

**II Semester** **(For students attended 1st semester under Physics Group)**

| Sl. No | Course and Course Code | | Course Title | Course category | TD/PSB | Teaching Hours/Week | | | | Examination | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory Lecture | Tutorial | Practical/ Drawing | SDA | Duration in hours | CIE Marks | SEE Marks | Total Marks | |
| | | | | | | L | T | P | S | | | | | |
| 1 | *ASC | 25BMAXX201 | Applied Mathematics -II | CORE | Maths Dept. | 3 | 2 | 0 | 0 | 03 | 50 | 50 | 100 | 04 |
| 2 | #ASC(IC) | 25BCHXX202 | Applied Chemistry | IPCC | Chemistry Dept. | 3 | 0 | 2 | 0 | 03 | 50 | 50 | 100 | 04 |
| 3 | ETC | 25BETCK203 | Introduction to AI and Applications | CORE | Any Dept. | 3 | 0 | 0 | 0 | 03 | 50 | 50 | 100 | 03 |
| 4 | ESC-II | 25BESC204X | Engineering Science Course-II | CORE | Respective Engg. Dept. | 3 | 0 | 0 | 0 | 03 | 50 | 50 | 100 | 03 |
| 5 | PLC | 25BPLC205X | Programming Language Course | CORE | CSE & allied Dept. | 3 | 0 | 0 | 0 | 03 | 50 | 50 | 100 | 03 |
| 6 | HSMS | 25BCPSK206 | Communicative & Professional Writing Skills in English | HSMS | Humanities Dept. | 1 | 0 | 1 | 0 | 01 | 50 | 50 | 100 | 01 |
| 7 | AEC (NCMC) | 25BICOK207 | Indian Constitution | HSMS | Humanities Dept. | 1 | 0 | 0 | 0 | 01 | 100 | -- | 100 | PP |
| 8 | AEC | 25BPBLK208 | Innovation and Design Thinking Lab (Project-Based Learning) | AEC | Respective Dept. | 0 | 0 | 0 | 2 | 02 | 50 | 50 | 100 | 01 |
| 9 | PLC | 25BPLL209X | Programming Language Course Lab | LAB | CSE & allied Dept. | 0 | 0 | 2 | 0 | 02 | 50 | 50 | 100 | 01 |
| **TOTAL** | | | | | | | | | | | **500** | **400** | **900** | **20** |

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ESC of 03 credits Courses shall have only a theory component (L: T: P: S=3:0:0:0) or if the nature then, of course, required practical learning syllabus shall be designed as an Integrated course (L: T: P: S=2:0:2:0).

All 01Credit-courses shall have the SEE of 01hours duration and the pattern of the question paper shall be MCQ.

| **Credit Definition:** | 04-Creditscourses are to be designed for 50hours of Teaching-Learning Session |
|---|---|
| 1-hour Lecture**(L)**per week=**1Credit** | 04-Credits (IC) are to be designed for 40 hours' theory and 2-4hours of practical sessions |
| 2-hoursTutorial**(T)**per week=**1Credit** | 03-Credits courses are to be designed for 40hours of Teaching-Learning Session |
| 3-hours Practical/Drawing(**P**)per week=**1Credit** | 02-Credits courses are to be designed for 25hours of Teaching-Learning Session |
| **2-**hous Skill Development Actives **(SDA)**per week=**1Credit** | 01-Credit courses are to be designed for12-15hoursofTeaching-Learning Session |

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| **Applied Mathematics-II** | | | | | **ESC-II: Engineering Science Courses-II** | | | | | **PLC: Programming Language Courses** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Code** | | **L** | **T** | **P** | **Code** | **Title** | **L** | **T** | **P** | **Code** | **Title** | **L** | **T** | **P** |
| **25BMACS201** | Numerical Methods | 3 | 2 | 0 | **25BESC204A** | Building Sciences & Mechanic | 3 | 0 | 0 | **25BPLC205A** | Introduction to Python Programming | 3 | 0 | 0 |
| **25BMAEC201** | Calculus, Laplace Transform and Numerical Techniques | 3 | 2 | 0 | **25BESC 204B** | Introduction to Electrical Engineering | 3 | 0 | 0 | **25BPLC205B** | Introduction to C++ Programming | 3 | 0 | 0 |
| **25BMAME201** | Multivariable Calculus and Numerical Methods | 3 | 2 | 0 | **25BESC 204C** | Introduction to Electronics & Communication Engineering | 3 | 0 | 0 | **25BPLC205C** | Introduction to Web Programming | 3 | 0 | 0 |
| **Applied Chemistry** | | | | | **25BESC 204D** | Introduction to Mechanical Engineering | 3 | 0 | 0 | **PLL: Programming Language Courses Labs** | | | | |
| **25BCHCS202** | Applied Chemistry for Smart Systems | 3 | 0 | 2 | **25BESC 204E** | Essentials of Information Technology | 3 | 0 | 0 | **25BPLL209A** | Introduction to Python Programming Lab | 0 | 0 | 2 |
| **25BCHEC202** | Applied Chemistry for Emerging Electronics and Futuristic Devices | 3 | 0 | 2 | **25BESC 204F** | Introduction to Linux | 3 | 0 | 0 | **25BPLL209B** | Introduction to C++ Programming Lab | 0 | 0 | 2 |
| **25BCHME202** | Applied Chemistry for Advanced Metal Protection and Sustainable Energy Systems | 3 | 0 | 2 | **25BESC 204G** | Introduction to Engineering Mechanics | 3 | 0 | 0 | **25BPLL209C** | Introduction to Web Programming Lab | 0 | 0 | 2 |
| | | | | | **25BESC204H** | Introduction to Cyber Security | 3 | 0 | 0 | | | | | |

- **All courses under PLC and ETC groups can be taught by ANY DEPARTMENT**
- The student must select **one course from the ESC-I group**.
- Students must opt for courses from the **ESC group** without repeating any course taken in the **1st or 2nd semester**.
- The student must select **one course each from the ETC and PLC groups**.
- If a student studies a subject from the **PSC group in the 1st semester**, they must select a course from the **PLC group in the 2nd semester**, and **vice versa**.