



ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
ವಿಟಿಯು ಅಧಿನಿಯಮಗಳ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ
VISVESVARAYA TECHNOLOGICAL UNIVERSITY

State University of Government of Karnataka Established as per the VTU Act, 1994 "JnanaSangama"
Belagavi-590018, Karnataka, India



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REGISTRAR

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REF: VTU/BGM/Syllabus/001/2026/ 3188

DATE: 17 SEP 2020

CIRCULAR

SUBJECT: Inclusion of new courses under PSC and PSCL category in 1st and 2nd Semesters, 2025 scheme - reg.

Reference: The Honorable Vice-Chancellor's approval Dated: 16/09/2026

This is to inform you that the 1st-year scheme (2025) has been updated to include the B.Tech Civil and Town Planning courses, specifically **"Introduction to Planning" (Course Code: 1BCTP05)** and **"Planning Communication" (Course Code: 1BCTP107)**.

The Principals of all Constituent, Affiliated Institutions, Autonomous Engineering Colleges are hereby informed to note the above information and forward the same to the concerned Heads of Departments, faculty members, and students for information.

Encl: Scheme and Syllabus

Prasad B. Rampure
17/09/26

REGISTRAR

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To,

1. The Principals of all Affiliated (Constituent, Autonomous, Non-Autonomous) Engineering Colleges under VTU, Belagavi.

Copy:

1. Hon'ble Vice-Chancellor, through the Secretary to VC, for kind information.
2. The Dean Faculty of Engineering, for kind information.
3. The Registrar (Evaluation), for kind information and necessary action.
4. The Director (I/c), ITISMU, with a request to upload the circular and the updated scheme on the University website.
5. The Academic for records.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI



Syllabus of
B. Tech in Civil and Town Planning (CVTP)
(PHYSICS)

PROGRAMME SPECIFIC COURSE

INTRODUCTION TO PLANNING		Semester	1
Course Code	1BCTP105/205	CIE Marks	50
Teaching Hours/Week (L:T:P:S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40Hours (Theory)	Total Marks	100
Credits	03	Exam Hours	3 Hours
Examination type (SEE)	Theory		
Course Outcomes (Course Skill Set)			
Appreciate land as the nucleus of spatial planning, explain the principles of spatial planning			
Appreciate various planning concepts developed in post industrial revolution periods			
Define different types of spatial plan			
Module-1: Definitions and Rationales of Planning			
Various definitions of town and country planning; Goals and objectives of planning; Components of planning; Benefits of planning, Arguments for and against planning.			
Module-2: Evolution of Planning			
A brief history of human settlements from the Stone Age and milestones, in prehistoric to the historic period. Evolution of physical forms as a result of geographical, geological, climatic, social, economic, political, and technological aspects of human settlements. Ancient river valley civilizations (Egyptian and Indus valley). Types of plans described in Vedic Scripts (Swastika, Karmukha, Dandaka, Padmaka, etc.)			
Module-3: Town Planning after 18th Century			
The industrial revolution : Overview of Garden City (Ebenezer Howard), Contemporary City (Le Corbusier); Ekistics (Doxiadis); Planning thought of Patrick Geddes			
Evolution of towns as per the functions of the towns, Constraints on city form, Elements of urban structure – Networks, Buildings, open spaces, etc. The form of the modern city in the age of automobile – Inner-city & Suburban area			

Module-4: Foundations of Planning and Types of Spatial Plans
Orthodoxies of planning including the Lamps of Planning; Sustainability and rationality in planning; Components of sustainable urban and regional development; Defining what counts as planning knowledge: various sources of planning knowledge, Reasoning and its various forms in planning; Space, place and location. Overview of Regional (District) plan, Master plan, Zonal plan, Local area plan.
Module-5: Governance of Planning
Local government in India; District Planning Committees and Metropolitan Planning Committees; Introduction to Internationalization and globalization of planning: meanings and forms of globalization; Characteristics of a global city; Principles for planning for a global city.
Suggested Learning Resources: (Textbook/ Reference Book): Textbooks/ Reference book: 1. Spatial Planning: Key Instruments for Development and Effective Governance, United Nations, New York and Geneva, 2008 · 2. Conceptions of Space and Place in Strategic Spatial Planning, Simin Davoudi and Others, Routledge · 3. Spatial Planning and Urban Development: Critical Perspectives, Palermo, Pier Carlo, Springer, 2010 · 4. Fundamentals of Town Planning , G.K. Hiraskar, Dhanpat Rai Publications, 2012 The Cities of Tomorrow : An Intellectual History of Urban Planning and Design Since 1880 ,Peter Hall, John Wiley & Sons, 2014 5. EKISTICS: An Introduction to the Science of Human Settlements, Constantinos A. Doxiadis, Oxford University Press, 1968 · 6. URDPFI Guidelines (Volume I and II), Ministry of Urban Development, Government of India, 2015
Web links and Video Lectures (e-Resources): • https://onlinecourses.nptel.ac.in/e-learning/preview/noc26_ar24 • https://nptel.ac.in/courses/124107158 • https://nptel.ac.in/courses/105105202 • https://www.classcentral.com/course/swayam-inclusive-planning-and-universal-design-452106

Teaching-Learning Process (Innovative Delivery Methods):

The following are sample strategies that educators may adopt to enhance the effectiveness of the teaching-learning process and facilitate the achievement of course outcomes.

- . In addition to the traditional lecture method, different types of innovative teaching methods may be adopted so that the delivered lessons shall develop students' theoretical and applied mathematical skills.
- . State the need for Mathematics with Engineering Studies and Provide real-life examples.
- . Support and guide the students for self-study.
- . You will also be responsible for assigning homework, grading assignments and quizzes, and documenting students' progress.
- . Encourage the students to group learning to improve their creative and analytical skills.
- . Show short related video lectures in the following ways:
 - As an introduction to new topics (pre-lecture activity).
 - As a revision of topics (post-lecture activity).
 - As additional examples (post-lecture activity).
 - As an additional material of challenging topics (pre-and post-lecture activity).
 - As a model solution of some exercises (post-lecture activity).

Assessment Structure:

The assessment in each course is divided equally between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each carrying 50% weightage.

The CIE Theory component consists of average of TWO IA tests for 25 marks and Continuous Comprehensive Assessments (CCA) for 25 marks.

- To qualify and become eligible to appear for SEE, in the **CIE**, a student must score at least **40% of 50 marks, i.e., 20 marks**.
- To pass the **SEE**, a student must score at least **35% of 50 marks, i.e., 18 marks**.
- Notwithstanding the above, a student is considered to have **passed the course**,

provided the combined total of **CIE and SEE is at least 40 out of 100 marks**.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Explain the definitions, rationale, objectives and significance of planning and its role in spatial development.	L2
CO2	Analyse the evolution of planning concepts and practices from ancient settlements to the emergence of modern planning.	L3
CO3	Analyse major town planning movements, concepts and theories developed after the 18th century and their influence on urban development.	L4
CO4	Apply the principles of spatial planning to distinguish and understand different types and levels of spatial plans.	L4
CO5	Evaluate the institutional, legal and governance mechanisms involved in planning, implementation and public participation.	L6

Planning Communication			
Course Code	1BCTP107/207	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0 :2 : 0	Viva Marks	50
Total Hours of Pedagogy	24	Total Marks	100
Credits	1		
Course Learning objectives: Course Outcomes At the end of the course, the student will be able to: CO1: Interpret physical and cultural features represented in Survey of India (SOI) toposheets for planning purposes. CO2: Apply graphical methods and socio-economic data for analysis and interpretation in planning. CO3: Prepare and present site-level base maps using appropriate mapping techniques, scales, symbols and conventional representation			
Module-1			
The students are required to undertake practical exercises as follows: Grade of lines, free hand sketching of solids, cones, cubes, cylinders, spheres; Free hand sketch of various settlement elements – electric poles, street features, trees, shrubs, bus stop physical and natural features. Number of Hours: 08			
Module-2			
Interpretation of Toposheet: Conventional Signs and Colours, Scale and Measurements, Grid References, Relief and Slopes, Drainage and Settlement Patterns, Land Use and Transportation, Toposheet Analysis for Planning. Practical: Interpretation and analysis of a selected Survey of India (SOI) Toposheet Number of Hours: 08			
Module-3			

Use of Graphical methods in Planning:

Introduction, Basic of Microsoft Excel, Features of Microsoft Excel, Understanding Microsoft Excel Basic Function, Preparation of tables and charts; Interpreting statistical, qualitative; Understanding various graph and area of application in Planning, Principles and importance of graphical representation in planning.

Case Study: Bar graphs, line graphs, pie charts, histograms and frequency diagrams; representation of population, demographic, land-use and transportation data; flow and movement diagrams; population pyramids; comparative and proportional diagrams; and preparation and interpretation of graphical methods for planning analysis.

Hours: 06

Number of

Module-4

Introduction to Maps: Definition, purpose, types and classification of maps and their applications in planning.

Essentials of Map Making: Scale, direction, projection, coordinates, grid, legend, symbols, title, north arrow, source and map layout.

Contents of Base Maps: Administrative boundaries, transportation networks, settlements, buildings, drainage, water bodies, contours, vegetation, landmarks, public facilities and existing land use.

Base Maps at Various Levels: Preparation and application of base maps at regional, district, city/town, neighbourhood and site levels with appropriate scale, detail and content

Number of Hours: 06

Module-5

Preparation of Base Map at Site Level: Selection of scale; collection and compilation of site data; representation of site and plot boundaries, buildings, roads, circulation, drainage, vegetation, open spaces and landmarks; preparation and presentation of site-level base maps using appropriate symbols, scale, north arrow, grid and legend.

Hours: 12

Number of

Suggested Learning Resources: (Textbook/ Reference Book/ Manuals):**Reference books:**

1. Site Analysis, T. Q. Edward, Architectural Media, 1983
2. Site Analysis, A. James and La Gro Jr., Jon Wiley and Sons, 2013
3. Key Concepts in Planning, Gavin Parker, Sage, New Delhi, 2012
4. Concept Mapping for Planning and Evaluation, Mary Kane and William M. K. Trochim, Oxford University Press

Assessment Structure:

The assessment in each course is divided equally between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each carrying 50% weightage.

- To qualify and become eligible to appear for SEE, in the CIE, a student must score at least **40% of 50 marks, i.e., 20 marks.**

- To pass the **SEE**, a student must score at least **35% of 50 marks, i.e., 18 marks**. Notwithstanding the above, a student is considered to have **passed the course**, provided the combined total of **CIE and SEE is at least 40 out of 100 marks**.

Semester End Examination (Viva voce):

1. The student needs to submit his/her report done for Planning Studio 1, including the data collection for the Viva examination, at least one day prior to the Viva examination to the PG/UG course coordinator/HOD/Special officer.
2. The Viva-voce will be evaluated by one external examiner appointed by the University along with one internal examiner appointed by the Department.
3. The viva-voce marks list generated is to be signed by both internal and external examiners and submitted to VTU in the sealed cover through the principal of the institution.
4. The viva-voce marks awarded for Planning Studio, shall be based on the evaluation of report submission, presentation skill and performance in question-and-answer session in the ratio 30:10:10

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Analyse and interpret physical and cultural features represented in Survey of India (SOI) toposheets for planning purposes	L4
CO2	Apply scale, conventional signs, colours, grid references and other map elements for interpretation and preparation of planning maps.	L3
CO3	Analyse and evaluate socio-economic and planning data using appropriate graphical methods for planning interpretation..	L4
CO4	Apply the principles and essentials of map making to prepare maps at different levels of planning.	L3
CO5	Create and present site-level base maps incorporating physical, cultural, land-use, transportation and other relevant planning features.	L6

Bachelor of Engineering Scheme of Teaching and Examinations-2025 Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2025-26) Common to All Engineering Programmes													
I Semester					(Chemistry Group)								
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SAAE	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	ASC	1BMATx101	Applied Mathematics-I (Stream Specific)	Maths Dept	3	2	0		03	50	50	100	04
2	ASC(IC)	1BCHEx102	Applied Chemistry (Stream Specific)	CHE Dept	3	0	2		03	50	50	100	04
3	ETC	1BAIA103	Introduction to AI and Applications	Any Dept	3	0	0		03	50	50	100	03
4	ESC	1BESC104x	Engineering Science Course- I	Respective Engg Dept	3	0	0		03	50	50	100	03
5	PLC(IC)	1BPLC105x	Programming Language Course	CSE & allied Dept	3	0	2		03	50	50	100	04
6	AEC	1BENG106	Communication Skills	Humanities Dept	1	0	0		02	50	50	100	01
7	AEC (NCMC)	1BICO107	Indian Constitution & Engineering Ethics	Humanities Dept	1	0	0		--	100	--	100	PP
8	AEC/SDC	1BIDTL158	Innovation and Design Thinking Lab (Project-based learning)	Any Dept	0	0	2		03	50	50	100	01
	TOTAL				17	02	07		20	450	350	800	20
9	AICTE Activity Points (students have to earn 100 activity points between 01 to 08 semesters)				Compulsory requirement for the award of a degree								
ASC-Applied Science Course, ESC- Engineering Science Courses, IC – Integrated Course (Practical Course Integrated with Theory Course), PLC(IC)- Programming Language Course (Integrated Course), AEC- Ability Enhancement Course, NCMC: Non Credit Mandatory Course, AEC/SDC- Ability Enhancement Course/Skill Development course, TD/PSB- Teaching Department / Paper Setting Board, S- (SAAE)-Students' Academic Activity Engagement Hours, CIE –Continuous Internal Evaluation, SEE- Semester End Examination, PP : (Pass/Pass) is assigned to a noncredit course. “PP” represents pass in a course provided students have successfully completed the CIE requirements. Otherwise, “NP-not pass shall be awarded. “PP” is essential for the award of the degree													
Credit Definition: 1-hour Lecture (L) per week=1Credit 2-hoursTutorial(T) per week=1Credit 2-hours Practical / Drawing (P) per week=1Credit				04-Credit courses are designed for 50 hours of Teaching-Learning sessions 04-Credit (IC) courses are designed for 40 hours' theory and 10-12 hours of practical sessions 03-Credit courses are designed for 40 hours of Teaching-Learning Session 02- Credit courses are designed for 25 hours of Teaching-Learning Session 01-Credit courses are designed for 12 hours of Teaching-Learning sessions									

Applied Mathematics-I Courses					Applied Chemistry Courses				
Code	Title	L	T	P	Code	Title	L	T	P
1BMATC101	Differential Calculus and Linear Algebra: CV Stream	3	2	0	1BCHEC102	Applied Chemistry for Sustainable Structure & Material Design (CV)	3	0	2
1BMATM101	Differential Calculus and Linear Algebra: ME Stream	3	2	0	1BCHEM102	Applied Chemistry for Advanced Metal Protection and Sustainable Energy Systems (ME)	3	0	2
1BMATE101	Differential Calculus and Linear Algebra; EEE stream	3	2	0	1BCHEE102	Applied Chemistry for Emerging Electronics and Futuristic Devices (EEE, ECE)	3	0	2
1BMATS101	Calculus And Linear Algebra: CSE stream	3	2	0	1BCHEC102	Applied Chemistry for Smart Systems (CSE)	3	0	2
Engineering Science Courses-I (ESC-I)					Programming Language Courses (PLC)				
Code	Title	L	T	P	Code	Title	L	T	P
1BESC104A	Building Sciences & Mechanics	3	0	0	1BPLC105E	Introduction to C Programming (For none IT programmes)	3	0	0
1BESC104B	Introduction to Electrical Engineering	3	0	0	1BPLC105B	Python Programming (for CSE and allied programmes)	3	0	0
1BESC104C	Introduction to Electronics and Communication Engineering	3	0	0					
1BESC104D	Introduction to Mechanical Engineering	3	0	0					
1BESC104E	Essentials of Information Technology	3	0	0					
Integrated courses (IC), combining theory with practical components. (i) Theory sessions shall be conducted for 3 hours per week, while the practical sessions shall be conducted for 2 hours per week. (ii) Theory components shall be evaluated through both Continuous Internal Evaluation (CIE) and Semester End Examination (SEE). (iii) The practical component shall be assessed only through CIE.									
The Mathematics/Chemistry courses shall be taught by a single faculty member per session, with no sharing of the course (subject) modules. The tutorial sessions for the mathematics course shall be conducted in the laboratory environment using Maxima/Mathematica/ Python/Scilab/MATLAB software to enhance computational understanding and application skills.									
All students admitted to the engineering program have to complete Applied Mathematics-I and Applied Mathematics-II in I and II semesters by selecting the subjects prescribed for their stream, viz. CV, ME, EEE or CSE, under the heading Mathematics-I and Mathematics-II. Those who have completed the chemistry course under the heading Applied Chemistry in I semester have to select the prescribed stream wise physics course under the heading Applied physics during II semester.									
Engineering Sciences Courses-I (ESC-I): These courses are designed to broaden students' technical knowledge beyond their core area of study. These courses enable students to gain a foundational understanding of engineering principles from other stream courses. Students are required to select and complete two courses that are not belong to their admitted program/or stream. For example, a student admitted to the any programme of the Civil Engineering / Civil Engineering stream should not select Introduction to Building Sciences but any other two. One course shall be selected under ESC-I and another course under ESC-II. The two courses must be different from the other.									
Communication Skills: This course shall be conducted in a laboratory environment									

The **Student Induction Programme** (SIP), initiated by the All India Council for Technical Education (AICTE), is designed to help newly admitted students in technical institutions transition smoothly into the higher education environment. It aims to familiarize students with the institutional culture, foster connections with peers and faculty, and provide a foundation for holistic learning. Activities under SIP may include Physical Activities, Creative Arts, Universal Human Values, Literary Events, and Proficiency Modules. Lectures shall be by Eminent Personalities, Local

Area Visits, Department/Branch Familiarization, and Innovation-related sessions.

The first year of the Engineering programmes is composed of I semester, II semester and Summer Semester. SIP activities shall be scheduled in the afternoon sessions during the first week of class commencement of I and II semesters only.

The specific programmes to be conducted will be notified separately by the University via the academic calendar or through a separate notification.

Sl. No	Stream	UG Programmes under the stream with code
1	Civil Engineering Stream (CV)	(1) Civil engineering (CV), (2) Mining Engineering (MI)
2	Mechanical Engineering Stream ME	(1)Aeronautical Engineering (AE), (2)Aerospace Engineering (AS),(3) Agreecultural Engineering (AG),(4)Automation and Robotics (AR), (5)Automobile Engineering (AU), (6)Chemical Engineering (CH), (7) Industrial & Production Engineering (IP), (8)Industrial Engineering & Management (IM), (9) Manufacturing Science and Engineering (MS), (10) Marine Engineering (MR), (11) Mechanical & Smart Manufacturing (MM), (12) Mechanical Engineering (ME), (13)Mechatronics (MT), (14) Petrochem Engineering (PC), (15)Robotics & Automation (RA),(16) Robotics and Artificial Intelligence (RI),(17)Silk Technology (ST), (18) Textile Technology (TX),(19)Energy Engineering (ER),(20) Smart Agritech (SA).
3	Electrical and Electronics Engineering Stream (EEE)	(1)Electronics & Communication Engineering (EC), (2)Biomedical Engineering (BM), (3)Electrical & Electronics Engineering (EE), (4) Electronics & Instrumentation Engineering (EI),(5) Electronics & Telecommunication Engineering (ET),(6) Industrial IoT (IO), (7) Medical Electronics Engineering (ML),(8) Electronics Engineering (VLSI Design and Technology) (VL),(9) Electronics & Communication(Advanced Communication Technology) (EA),(10) Electronics & Computer Engineering (UE).Electronics and Computer Sciences,
4	Computer Science and Engineering Stream (CSE)	(1) Computer Science and Engineering (CS), (2)Computer Engineering (CE), (3) Artificial Intelligence and Data Science (AD), (4)Artificial Intelligence and Machine Learning (AI),(5)Biotechnology (BT),(6)Computer & Communication Engineering (CM), (7) Computer Science and Business System (CB),(8)Computer Science and Design (CG),(9)Computer Science and Engineering (IoT) (CO), (10)CSE(Artificial Intelligence and Machine Learning) (CI),(11) CSE(Artificial Intelligence) (CA),(12) CSE(Cyber Security) (CY), (13)CSE(Data Science) (CD),(14) CSE(IoT and Cyber Security including Block Chain Technology) (IC), (15) Data Science (DS), (16) Information Science & Engineering (IS),(17) Computer Science (CR). Computer science & Technology(CN), CSE(AI & DS),

AICTE Activity Points Requirement for BE/B.Tech. Programmes

As per AICTE guidelines (refer Chapter 6 – *AICTE Activity Point Program, Model Internship Guidelines*), in addition to academic requirements, students must earn a specified number of **Activity Points** to be eligible for the award of the degree. The points to be earned is:

1. **Regular students** admitted to a 4-year degree program must earn **100 Activity Points**.
2. **Lateral entry students** (joining from the second year) must earn **75 Activity Points**.
3. **Students transferred** from other universities directly into the fifth semester must earn **50 Activity Points** from the date of entry into VTU.

These Activity Points are **non-credit** and will not be considered for **the SGPA/CGPA** or be used for **vertical progression**. However, earning Activity Points is mandatory for the **award of the degree**, and the points earned will be reflected on the **eighth semester Grade Card**.

If a student completes all the semesters (eight or six) at the end of the programme but fails to earn the required Activity Points, the eighth-semester Grade Card will be withheld until the requirement is fulfilled. Also, the degree will be awarded only after the Grade Card has been released.

The hours spent earning the activity points will not be counted for regular attendance requirements. Students can accumulate these points at any time during their program period, including weekends, holidays, and vacations, starting from the year of admission, provided they meet the minimum hours of engagement prescribed for each activity by AICTE.

Mandatory Completion of Additional Skill Labs for Award of Degree

Apart from the skill-enhancement or ability enhancement courses prescribed in the Scheme of Teaching and Examinations, students admitted to the four-year B.E./B.Tech. programme shall complete five (5) additional offline Skill Labs, before the commencement of 7th semester to become eligible for the award of the Degree. Each Skill Lab shall carry one (01) credit and shall have a duration of 30 hours.

Bachelor of Engineering Scheme of Teaching and Examinations-2025 Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2025-26) Common to All Engineering Programmes													
II Semester (For the students who have studied the Chemistry group in I semester)													
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SAAE	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	ASC	1BMATx201	Applied Mathematics -II (Stream Specific)	Maths Dept	3	2	0		03	50	50	100	04
2	ASC(IC)	1BPHYx202	Applied Physics (Stream Specific)	PHY Dept	3	0	2		03	50	50	100	04
3	ESC	1BCEDx203	Computer-Aided Engineering Drawing (Stream Specific)	ME dept	2	0	2		03	50	50	100	03
4	ESC	1Bxxx204x	Engineering Science Course-II	Respective Engg Dept	3	0	0		03	50	50	100	03
5	PSC	1Bxxx205x	Programme Specific Course	Respective Engg Dept	3	0	0		03	50	50	100	03
6	AEC (NCMC)	1BSKS206	Soft Skills	Humanities Dept	1	0	0		--	100	---	100	PP
7	PSC	1BxxxL207x	Programme-Specific Course Lab	Respective dept	0	0	2		03	50	50	100	01
8	AEC/SDC	1BPRJ258	Interdisciplinary Project-Based Learning	Combination of Departments	0	0	0	02	02	50	50	100	01
9	HSMC	1BKSK209(BKSK107)/ 1BKBK209(BKKBK107)	Sanskrutika Kannada/ Balake Kannada	Humanities Dept	1	0	0		01	50	50	100	01
	TOTAL				16	02	06		21	500	400	900	20
ASC-Applied Science Course, IC – Integrated Course (Practical Course Integrated with Theory Course), ESC- Engineering Science Courses, PSC-Programme Specific Course, ESC- Engineering Science Courses,ETC- Emerging Technology Course, AEC- Ability Enhancement Course,NCMC: Non Credit Mandatory Course, PP : (Pass/Pass) is assigned to a non credit course. “PP” represents pass in course provided students have successfully completed the CIE requirements. Otherwise, “NP-not pass shall be awarded. “PP” is essential for the award of the degree HSMC-Humanity, Social Science and management Course, AEC/SDC- Ability Enhancement Course/Skill Development course, TD/PSB-Teaching Department / Paper Setting Board, CIE –Continuous Internal Evaluation, SEE- Semester End Examination, S- (SAAE)-Students’ Academic Activity Engagement Hours,													

Applied Mathematics-II Courses					Applied Physics Courses				
Code	Title	L	T	P	Code	Title	L	T	P
1BMATC201	Differential Calculus and Numerical Methods: CV stream	3	2	0	1BPHYC202	Physics for Sustainable Structural Systems (CV stream)	3	0	2
1BMATM201	Multivariable Calculus and Numerical Methods: ME stream	3	2	0	1BPHYM202	Physics of Materials (Mech stream)	3	0	2
1BMATE201	Calculus, Laplace Transform, and Numerical Techniques: EEE stream	3	2	0	1BPHEC202	Quantum Physics and Electronic Sensors (ECE stream)	3	0	2
1BMATS201	Numerical Methods: CSE Stream	3	2	0	1BPHEE202	Physics of Electrical Engineering Materials (EEE Stream –only for EEE Students)	3	0	2
					1BPHYS202	Quantum Physics and Applications (CSE stream)	3	0	2
Programme Specific Courses (PSC)					Programme Specific Course Labs (PSCL)				
1BCIV205	Engineering Mechanics	3	0	0	1BMEML207	Mechanics and Materials Lab	0	0	2
1BEME205	Elements of Mechanical Engineering	3	0	0	1BEMEL207	Elements of Mechanical Engineering Lab	0	0	2
1BBEE205	Basics of Electrical Engineering	3	0	0	1BBEEL207	Basic Electrical Lab	0	0	2
1BECE205	Fundamentals of Electronics & Communication Engineering	3	0	0	1BECEL207	Fundamentals of Electronics & Communication Engineering Lab	0	0	2
1BEIT205	Programming in C	3	0	0	1BPOPL207	C Programming Lab	0	0	2
1BEBT205	Elements of Biotechnology and Biomimetics	3	0	0	1BSSAL207	Soil Science and Agronomy Field Lab	0	0	2
1BSSA205	Principles of Soil Science and Agronomy	3	0	0	1BEBTL207	Elements of Biotechnology Lab	0	0	2
1BEAE205	Elements of Aeronautical Engineering	3	0	0	1BEAEL207	Elements of Aeronautical Engineering Lab	0	0	2
1BECHE205	Elements of Chemical Engineering	3	0	0	1BECHEL207	Elements of Chemical Engineering Lab	0	0	2
1BETX205	Technology of Textile	3	0	0	1BETXL207	Technology of Textile Lab	0	0	2
1BCTP205	Introduction to Town Planning	3	0	0	1BCTP207	Planning Communication	0	0	2
Engineering Science Courses-II (ESC-II)					Computer-Aided Engineering Drawing Courses				
1BESC204A	Building Sciences & Mechanics	3	0	0	Code	Title	L	T	P
1BESC204B	Introduction to Electrical Engineering	3	0	0	1BCEDC203	Computer-Aided Engineering Drawing for CV Stream	2	0	2
1BESC204C	Introduction to Electronics & Communication Engineering	3	0	0	1BCEDM203	Computer-Aided Engineering Drawing for ME stream	2	0	2
1BESC204D	Introduction to Mechanical Engineering	3	0	0	1BCEDEEC203	Computer-Aided Engineering Drawing for ECE stream	2	0	2
1BESC204E	Essentials of Information Technology	3	0	0	1BCEDE203	Computer-Aided Engineering Drawing for EEE stream (Only for EEE Students)	2	0	2
					1BCEDS203	Computer-Aided Engineering Drawing for CSE stream	2	0	2
Integrated courses (IC), combining theory with practical components. (i) Theory sessions will be conducted for 3 hours per week, while the practical sessions will be conducted for 2 hours per week. (ii) Theory component shall be evaluated through both Continuous Internal Evaluation (CIE) and Semester End Examination (SEE). (iii) The practical component will be assessed only through CIE.									

The Mathematics/Physics courses shall be taught by a single faculty member per session, with no sharing of the course (subject) modules. The tutorial sessions for the **mathematics course** shall be conducted in a laboratory environment using **Maxima/Mathematica/ Python/Scilab/MATLAB software** to enhance computational understanding and application skills.

Students admitted to a specific engineering stream are required to select and successfully complete **Applied Mathematics-I** and **Applied Physics courses** that are aligned to their program stream.

Programme Specific Courses (PSC): Programme Specific Courses (PSC) are a set of core courses tailored to a specific branch or discipline of engineering in which a student is enrolled (e.g., Mechanical Engineering, Computer Science, Civil Engineering, etc.). These courses are intended to provide students with in-depth knowledge and specialized skills essential for professional competence in the chosen field.

Students must select and complete the course from this group that **corresponds to their admitted program stream.**

Similarly, students are also required to choose and pass laboratory courses that are specific to their stream from the **Programme Specific Courses Laboratory (PSCL)** group.

Interdisciplinary Programmes – PSC, PSCL Selection:

Students of Interdisciplinary Programmes may choose Programme Specific Courses (PSC) and Programme Specific Course Laboratories (PSCL) from the relevant engineering streams, namely Mechanical Engineering, Electronics and Communication Engineering, and/or Computer Science and Engineering, as applicable to their programme. The selection shall be as per the approved scheme and curriculum of the respective programme and subject to the availability of courses/laboratories in the concerned department.

Computer-Aided Engineering Drawing: The courses under this category are stream-specific. Students must select and complete the course that corresponds to their admitted engineering stream.

Engineering Sciences Courses-II (ESC-II): These courses are designed to broaden the technical knowledge of students beyond their core area of study. These courses enable students to gain a foundational understanding of engineering principles from other disciplines. Students are required to select and complete a course that does not belong to their admitted program /stream. Students should select a course other than that was selected under ESC-I and other than course not belonging to their stream.

For the course **Interdisciplinary Project (BPRJ259)**, it is mandatory to form a team comprising students from multiple engineering disciplines. For example, a project team may include students from Mechanical Engineering, Electronics and Communication Engineering (ECE), and Computer Science and Engineering (CSE), working collaboratively to design and implement the project.



Bachelor of Engineering Scheme of Teaching and Examinations (2025) Outcome-Based Education (OBE)and Choice-Based Credit System (CBCS) (Effective from the academic year 2025-26) Common to all Engineering Programmes													
I Semester					(Physic Group)								
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SAAE	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	ASC	1BMATx101	Applied Mathematics -I (Stream Specific Course)	Maths Dept	3	2	0		03	50	50	100	04
2	ASC(IC)	1BPHYx102	Applied Physics (Stream Specific Course)	PHY Dept	3	0	2		03	50	50	100	04
3	ESC	1BCEDx103	Computer-Aided Engineering Drawing (Stream Specific Course)	ME Dept	2	0	2		03	50	50	100	03
4	ESC	1BXXX104x	Engineering Science Course-I	Respective Engg Dept	3	0	0		03	50	50	100	03
5	PSC	1Bxxx105x	Programme Specific Course	Respective Engg dept	3	0	0		03	50	50	100	03
6	AEC (NCMC)	1BSKS106	Soft Skills	Humanities Dept	1	0	0		-	100	---	100	PP
7	PSC	1BxxxL107x	Programme-Specific Course Lab	Respective Engg Dept	0	0	2		03	50	50	100	01
8	AEC/SDC	1BIDTL158	Innovation and Design Thinking Lab (Project-based learning)	Respective Dept	0	0	2		03	50	50	100	01
9	HSMS	1BKSK109(BKSK107)/ 1BKBK109(BKKBK107)	Sanskrutika Kannada/ Balake Kannada	Humanities Dept	1	0	0		01	50	50	100	01
	TOTAL				16	02	08		20	500	400	900	20
10	AICTE Activity Points (students have to earn 100 activity points between 01 to 08 semester)				Compulsory requirement for the award of a degree								
Credit Definition: 1-hour Lecture (L) per week=1Credit 2-hoursTutorial(T) per week=1Credit 2-hours Practical / Drawing (P) per week=1Credit				04-Credit courses are designed for 50 hours of Teaching-Learning Session 04-Credit (IC) is designed for 40 hours’ theory and 10-12 hours of practical sessions 03-Credit courses are designed for 40 hours of Teaching-Learning Session 02- Credit courses are designed for 25 hours of Teaching-Learning Session 01-Credit courses are to be designed for 12 hours of Teaching-Learning sessions									
				ASC-Applied Science Course, IC – Integrated Course (Practical Course Integrated with Theory Course), PSC-Programme Specific Course, ESC- Engineering Science Courses, ETC- Emerging Technology Course, AEC- Ability Enhancement Course, NCMC: Non Credit Mandatory Course, PP : (Pass/Pass) is assigned to a noncredit course. “PP” represents pass in course provided students have successfully completed the CIE requirements. Otherwise, “NP-not pass shall be awarded. “PP” is essential for the award of the degree. PLC(IC)- Programming Language Course (Integrated Course), AEC/SDC- Ability Enhancement Course/Skill Development course, TD/PSB- Teaching Department / Paper Setting Board, HSMS-Humanity, Social Science and management Course, S- (SAAE) Students’ Academic Activity Engagement Hours, CIE –Continuous Internal Evaluation, SEE- Semester End Examination,									

Applied Mathematics-I Courses					Applied Physics Courses				
Code	Title	L	T	P	Code	Title	L	T	P
1BMATC101	Differential Calculus and Linear Algebra: CV Stream	3	2	0	1BPHYC102	Physics for Sustainable Structural Systems (CV stream)	3	0	2
1BMATM101	Differential Calculus and Linear Algebra: ME Stream	3	2	0	1BPHYM102	Physics of Materials (Mech stream)	3	0	2
1BMATE101	Differential Calculus and Linear Algebra: EEE stream	3	2	0	1BPHEC102	Quantum Physics and Electronics Sensors (ECE stream)	3	0	2
1BMATS101	Calculus and Linear Algebra: CSE Stream	3	2	0	1BPHEE102	Physics of Electrical Engineering Materials (EEE stream-only for EEE students)	3	0	2
					1BPHYS102	Quantum Physics and Applications (CSE stream)	3	0	2
Computer-Aided Engineering Drawing Courses					Engineering Science Courses-I(ESC-I)				
1BCEDC103	Computer-Aided Engineering Drawing for CV Stream	2	0	2	1BESC104A	Building Sciences and Mechanics	3	0	0
1BCEDM103	Computer-Aided Engineering Drawing for ME stream	2	0	2	1BESC104B	Introduction to Electrical Engineering	3	0	0
1BCEDEC103	Computer-Aided Engineering Drawing for ECE stream	2	0	2	1BESC104C	Introduction to Electronics & Communication Engineering	3	0	0
1BCEDE103	Computer-Aided Engineering Drawing for EEE stream (only for EEE students)	2	0	2	1BESC104D	Introduction to Mechanical Engineering	3	0	0
1BCEDS103	Computer-Aided Engineering Drawing for CSE stream				1BESC104E	Essentials of Information Technology	3	0	0
Programme Specific Courses (PSC)					Programme-Specific Course Labs (PSCL)				
1BCIV105	Engineering Mechanics	3	0	0	1BMEML107	Mechanics and Materials Lab	0	0	2
1BBEE105	Basics of Electrical Engineering	3	0	0	1BBEEL107	Basic Electrical Lab	0	0	2
1BECE105	Fundamentals of Electronics & Communication Engineering	3	0	0	1BECCEL107	Fundamentals of Electronics & Communication Engineering Lab	0	0	2
1BEME105	Elements of Mechanical Engineering	3	0	0	1BEMEL107	Elements of Mechanical Engineering Lab	0	0	2
1BEIT105	Programming in C	3	0	0	1BPOPL107	C Programming Lab	0	0	2
1BEBT105	Elements of Biotechnology and Biomimetics	3	0	0	1BEBTL107	Elements of Biotechnology Lab	0	0	2
1BSSA105	Principles of Soil Science and Agronomy	3	0	0	1BSSAL107	Soil Science and Agronomy Field Lab	0	0	2
1BEAE105	Elements of Aeronautical Engineering	3	0	0	1BEAEL107	Elements of Aeronautica Engineering Lab	0	0	2
1BECHE105	Elements of Chemical Engineering	3	0	0	1BECHEL107	Elements of Chemical Engineering Lab	0	0	2
1BETX105	Technology of Textile	3	0	0	1BETEXL107	Technology of Textile Lab	0	0	2
1BCTP105	Introduction to Town Planning	3	0	0	1BCTP107	Planning Communication	0	0	2
Integrated courses (IC), combining theory with practical components. (i) Theory sessions shall be conducted for 3 hours per week, while the practical sessions shall be conducted for 2 hours per week. (ii) Theory components shall be evaluated through both Continuous Internal Evaluation (CIE) and Semester End Examination (SEE). (iii) The practical component shall be assessed only through CIE.									
The Mathematics/Physics courses shall be taught by a single faculty member per session, with no sharing of the course (subject) modules.									

The **tutorial sessions** for the **mathematics course** shall be conducted in the laboratory environment using **Maxima/Mathematica/ Python/Scilab/MATLAB software** to enhance computational understanding and application skills (one hour for problem solving and one hour laboratory session).

All students admitted to the engineering program have to complete **Applied Mathematics-I and Applied Mathematics-II** in I and II semesters by selecting the courses prescribed for their stream, viz. CV, ME, EEE or CSE, under the heading Mathematics –I and Mathematics-II.

Those who have completed the physics course under the heading Applied Physics in I semester have to select the prescribed stream wise chemistry course under the heading Applied chemistry during II semester.

Programme Specific Courses (PSC): Programme Specific Courses (PSC) are a set of core courses tailored to a specific branch or discipline of engineering in which a student is enrolled (e.g., Mechanical Engineering, Computer Science, Civil Engineering, etc.). These courses are intended to provide students with in-depth knowledge and specialized skills essential for professional competence in the chosen field. Students must select and complete the course from this group that **corresponds to their admitted program stream**. Similarly, students are also required to choose and pass laboratory courses that are specific to their stream from the **Programme Specific Courses Laboratory (PSCL) group**.

Interdisciplinary Programmes – PSC, PSCL Selection:

Students of Interdisciplinary Programmes may choose Programme Specific Courses (PSC) and Programme Specific Course Laboratories (PSCL) from the relevant engineering streams, namely Mechanical Engineering, Electronics and Communication Engineering, and/or Computer Science and Engineering, as applicable to their programme. The selection shall be as per the approved scheme and curriculum of the respective programme and subject to the availability of courses/laboratories in the concerned department.

Engineering Sciences Courses-I(ESC-I): These courses are designed to broaden the technical knowledge of students beyond their core area of study. These courses enable students to gain a foundational understanding of engineering principles from other stream courses. Students are required to select and complete two courses that are not belong to their admitted program /stream. For example, a student admitted to the any programme of the Civil Engineering /Civil Engineering stream should not select Introduction to Building Sciences but any other two. One course shall be selected under ESC-I and another course under ESC-II. The two courses must be different from the other.

Computer-Aided Engineering Drawing: The courses under this category are stream-specific. Students must select and complete the course that corresponds to their admitted engineering stream.

The **Student Induction Programme (SIP)**, initiated by the All India Council for Technical Education (AICTE), is designed to help newly admitted students in technical institutions transition smoothly into the higher education environment. It aims to familiarize students with the institutional culture, foster connections with peers and faculty, and provide a foundation for holistic learning. Activities under SIP may include Physical Activities, Creative Arts, Universal Human Values, Literary Events, Proficiency Modules. Lectures shall be by Eminent Personalities, Local Area Visits, Department/Branch Familiarization, and Innovation-related sessions.

The first year of the Engineering programmes is composed of I semester, II semester and Summer Semester. SIP activities shall be scheduled in the afternoon sessions during the first week of class commencement of I and II semesters only.

The specific programmes to be conducted will be notified separately by the University via the academic calendar or through a separate notification.

Sl No	Stream	UG Programmes under the stream with code
1	Civil Engineering Stream (CV)	(1) Civil engineering (CV), (2) Mining Engineering (MI)
2	Mechanical Engineering Stream (ME)	(1)Aeronautical Engineering (AE), (2)Aerospace Engineering (AS),(3) Agricultural Engineering (AG),(4)Automation and Robotics (AR), (5)Automobile Engineering (AU), (6)Chemical Engineering (CH), (7) Industrial & Production Engineering (IP), (8)Industrial Engineering & Management (IM), (9) Manufacturing Science and Engineering (MS), (10) Marine Engineering (MR), (11) Mechanical & Smart Manufacturing (MM), (12) Mechanical Engineering (ME), (13)Mechatronics (MT), (14) Petrochem Engineering (PC), (15)Robotics & Automation (RA),(16) Robotics and Artificial Intelligence (RI),(17)Silk Technology (ST), (18) Textile Technology (TX),(19)Energy Engineering (ER),(20) Smart Agritech (SA).

3	Electrical and Electronics Engineering Stream (EEE)	(1)Electronics & Communication Engineering (EC), (2)Biomedical Engineering (BM), (3)Electrical & Electronics Engineering (EE), (4) Electronics & Instrumentation Engineering (EI),(5) Electronics & Telecommunication Engineering (ET),(6) Industrial IoT (IO), (7) Medical Electronics Engineering (ML),(8) Electronics Engineering (VLSI Design and Technology) (VL),(9) Electronics & Communication(Advanced Communication Technology) (EA),(10) Electronics & Computer Engineering (UE).
4	Computer Science and Engineering Stream (CSE)	(1) Computer Science and Engineering (CS), (2) Computer Engineering (CE), (3)Artificial Intelligence and Data Science (AD), (4) Artificial Intelligence and Machine Learning (AI),(5) Biotechnology (BT),(6)Computer & Communication Engineering (CM), (7) Computer Science and Business System (CB),(8) Computer Science and Design (CG),(9) Computer Science and Engineering (IoT) (CO), (10)CSE(Artificial Intelligence and Machine Learning) (CI),(11) CSE(Artificial Intelligence) (CA),(12) CSE(Cyber Security) (CY), (13)CSE(Data Science) (CD),(14) CSE(IoT and Cyber Security including Block Chain Technology) (IC), (15) Data Science (DS), (16) Information Science & Engineering (IS),(17) Computer Science (CR).
AICTE Activity Points Requirement for BE/B.Tech. Programmes As per AICTE guidelines (refer Chapter 6 – <i>AICTE Activity Point Program, Model Internship Guidelines</i>), in addition to academic requirements, students must earn a specified number of Activity Points to be eligible for the award of the degree. The points to be earned is: • Regular students admitted to a 4-year degree program must earn 100 Activity Points. • Lateral entry students (joining from the second year) must earn 75 Activity Points. • Students transferred from other universities directly into the fifth semester must earn 50 Activity Points from the date of entry into VTU. These Activity Points are non-credit and will not be considered for the SGPA/CGPA or be used for vertical progression. However, earning Activity Points is mandatory for the award of the degree, and the points earned will be reflected on the eighth semester Grade Card. If a student completes all the semesters (eight or six) at the end of the programme but fails to earn the required Activity Points, the eighth-semester Grade Card will be withheld until the requirement is fulfilled. Also, the degree will be awarded only after the Grade Card has been released. The hours spent earning the activity points will not be counted for regular attendance requirements. Students can accumulate these points at any time during their program period, including weekends, holidays, and vacations, starting from the year of admission, provided they meet the minimum hours of engagement prescribed for each activity by AICTE. Mandatory Completion of Additional Skill Labs for Award of Degree Apart from the skill-enhancement or ability enhancement courses prescribed in the Scheme of Teaching and Examinations, students admitted to the four-year B.E./B.Tech. programme shall complete five (5) additional offline Skill Labs, before the commencement of 7th semester to become eligible for the award of the Degree. Each Skill Lab shall carry one (01) credit and shall have a duration of 28 to 30 hours.		

Bachelor of Engineering Scheme of Teaching and Examinations (2025) Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2025-26) Common to all Engineering Programmes													
II Semester (For the students who have studied Physics group in I semester)													
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SAAE	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	ASC	1BMATx201	Applied Mathematics -II (Stream Specific Course)	Maths Dept	3	2	0		03	50	50	100	04
2	ASC(IC)	1BCHEx202	Applied Chemistry (Stream Specific Course)	CHE Dept	3	0	2		03	50	50	100	04
3	ETC	1BAIA203	Introduction to AI and Applications	Any Dept	3	0	0		03	50	50	100	03
4	ESC	1BESC204x	Engineering Science Course-II	Respective Engg Dept	3	0	0		03	50	50	100	03
5	PLC(IC)	1BPLC205x	Programming Language Course	CSE & allied Dept	3	0	2		03	50	50	100	04
6	AEC	1BENG206	Communication Skills	Humanities Dept	1	0	0		02	50	50	100	01
7	AEC (NCMC)	1BICO207	Indian Constitution & Engineering Ethics	Humanities Dept	1	0	0		01	100	0	100	PP
8	AEC/SDC	1BPRJ258	Interdisciplinary Project-Based Learning	Respective Dept (Multiple Dept)	0	0	0	2	02	50	50	100	01
TOTAL					17	02	05	02	20	450	350	800	20
ASC-Applied Science Course, IC – Integrated Course (Practical Course Integrated with Theory Course), ESC- Engineering Science Courses, PLC(IC)- Programming Language Course (Integrated Course), AEC- Ability Enhancement Course, NCMC: Non Credit Mandatory Course, TD/PSB- Teaching Department / Paper Setting Board, HSMC- Humanity, Social Science and management Course, S- (SAAE)- Students’ Academic Activity Engagement Hours, AEC/SDC- Ability Enhancement Course/Skill Development course, CIE –Continuous Internal Evaluation, SEE- Semester End Examination, PP : (Pass/Pass) is assigned to a noncredit course. “PP” represents pass in course provided students have successfully completed the CIE requirements. Otherwise, “NP-not pass shall be awarded. “PP” is essential for the award of the degree													
Integrated courses (IC), combining theory with practical components. The theory sessions shall be conducted for 3 hours per week, while the practical sessions shall be conducted for 2 hours per week. - The theory component will be evaluated through both Continuous Internal Evaluation (CIE) and Semester End Examination (SEE). - The practical component will be assessed only through CIE.													
Communication Skills: This course shall be conducted in a laboratory environment													

Applied Mathematics-II Courses					Applied Chemistry Courses				
Code	Title	L	T	P	Code	Title	L	T	P
1BMATC201	Differential Calculus and Numerical Methods: CV Stream	3	2	0	1BCHC202	Applied Chemistry for Sustainable Structure & Material Design (CV)	3	0	2
1BMATM201	Multivariable Calculus and Numerical Methods: ME Stream	3	2	0	1BCHEM202	Applied Chemistry for Advanced Metal Protection and Sustainable Energy Systems (ME)	3	0	2
1BMATE201	Calculus, Laplace Transform And Numerical Techniques: EEE stream	3	2	0	1BCHEE202	Applied Chemistry for Emerging Electronics and Futuristic Devices (EEE, ECE)	3	0	2
1BMATS201	Numerical Methods: CSE Stream	3	2	0	1BCHES202	Applied Chemistry for Smart Systems (CSE)	3	0	2
Engineering Sciences Courses II(ESC-II)					Programming Language Courses (PLC)				
1BESC204A	Building Sciences & Mechanics	3	0	0	1BPLC205E	Introduction to C Programming (for non-IT programmes)	3	0	2
1BESC204B	Introduction to Electrical Engineering	3	0	0	1BPLC205B	Python Programming (For CSE and allied programmes)	3	0	2
1BESC204C	Introduction to Electronics & Communication Engineering	3	0	0					
1BESC204D	Introduction to Mechanical Engineering	3	0	0					
1BESC204E	Essentials of Information Technology	3	0	0					
The Mathematics/Chemistry courses shall be taught by a single faculty member per session, with no sharing of the course (subject) modules. The tutorial sessions for the mathematics course shall be conducted in the laboratory environment using Maxima/Mathematica/ Python/Scilab/MATLAB software to enhance computational understanding and application skills. Students admitted to a specific engineering stream are required to select and successfully complete Applied Mathematics-II and Applied Chemistry courses that are aligned to their program stream. Engineering Sciences Courses-II(ESC-II): These courses are designed to broaden the technical knowledge of students beyond their core area of study. These courses enable students to gain a foundational understanding of engineering principles from other disciplines. Students are required to select and complete a course under ESC-II that does not belong to their admitted program stream. Students should select a course other than that was selected under ESC-I and other than course not belonging to their branch/stream.									
For the course Interdisciplinary Project (BPRJ259), it is mandatory to form a team comprising students from multiple engineering disciplines. For example, a project team may include students from Mechanical Engineering, Electronics and Communication Engineering (ECE), and Computer Science and Engineering (CSE), working collaboratively to design and implement the project.									

