

Dr. Ambedkar Institute of Technology, Bengaluru - 560056
Outcome Based Education(OBE) and Choice Based Credit System
B. E. Name of the programme: Civil Engineering
Scheme of Teaching and Examination effective from the Academic Year: 2023 - 2024

III SEMESTER

Sl. No	Course	Course Code	Course Title	Teaching Department	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	Self-study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PCC	22CVT301	Building Materials & Construction	Civil	3	0	0	-	03	50	50	100	3
2	IPCC	22CVU302	Engineering Survey	Civil	3	0	2	-	03	50	50	100	4
3	IPCC	22CVU303	Strength of Materials	Civil	3	0	2	-	03	50	50	100	4
4	PCC	22CVT304	Fluid Mechanics & Machinery	Civil	3	0	0	-	03	50	50	100	3
5	PCCL	22CVL305	Computer Aided Building Planning and Drawing	Civil	0	0	2	-	03	50	50	100	1
6	ETC	22CVT306X	ESC / ETC / PLC	Civil	3	0	0	-	03	50	50	100	3
7	UHV	22HST307	Social Connect and Responsibility	Civil	0	0	2	-	01	100	-	100	1
8	AEC/ SEC	22CVT308X or 22CVL308X	Ability Enhancement Course / Skill Enhancement Course – III	Civil	If the course is a Theory				01	50	50	100	1
					1	0	0	-					
					If a course is a laboratory				02				
9	HS	22CDN309	Aptitude and Verbal Ability Skill - I	Placement Cell	2	0	0	-	-	50	-	50	PP/NP
10	MC	22NSN310	National Service Scheme (NSS)	NSS coordinator	0	0	2	-	-	100	-	100	PP/NP
		22PEN310	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		22YON310	Yoga	Yoga Teacher									
Total:									600	350	950	20	

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **UHV:** Universal Human Value Course, **MC:** Mandatory Course (Non-credit), **AEC:** Ability Enhancement Course, **SEC:** Skill Enhancement Course, **L:** Lecture, **T:** Tutorial, **P:** Practical, **S=** Self-Study, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **K:** This letter in the course code indicates common to all the streams of Engineering. **ESC:** Engineering Science Course, **ETC:** Emerging Technology Course, **PLC:** Programming Language Course

Emerging Technology Course (ETC) 22CVT306X			
22CVT306A	Green Buildings.	22CVT306C	Pavement Materials & Construction.
22CVT306B	Environmental Protection & Management.	22CVT306D	Basics of Structural Analysis.
Ability Enhancement Course (AEC) – III 22CVT308X OR 22CVL308X			
22CVT308A	Engineering Geology.	22CVT308C	Subsurface Exploration.
22CVT308B	Economics for Civil Engineers.	22CVT308D	Fire safety in Buildings.

Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practical of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper.

National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first Week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the Degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of Degree.

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Outcome Based Education(OBE) and Choice Based Credit System
B. E. Name of the Programme: Civil Engineering
Tentative Scheme of Teaching and Examination effective from the Academic Year 2023-24

IV SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department & Question Paper Setting Board	Teaching Hours /Week				Examination				Credits
					Theory Lect	Tutorial	Practical/Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PCC	22CVT401	Structural Analysis	Civil	3	0	0	-	03	50	50	100	3
2	IPCC	22CVU402	Highway Engineering	Civil	3	0	2	-	03	50	50	100	4
3	IPCC	22CVU403	Concrete Technology	Civil	3	0	2	-	03	50	50	100	4
4	PCCL	22CVL404	Fluid Mechanics & Machinery Lab	Civil	0	0	2	-	03	50	50	100	1
5	ETC	22CVT405X	ESC / ETC / PLC	Civil	3	0	0	-	03	50	50	100	3
6	AEC/ SEC	22CVT406X or 22CVL406X	Ability Enhancement Course / Skill Enhancement Course - IV	Civil	If the course is Theory				01	50	50	100	1
					1	0	0	-					
					If the course is a lab				02				
0	0	2	-										
7	BSC	22BIT407	Biology For Engineers	TD / PSB: BT, CHE.	3	0	0	-	03	50	50	100	3
8	UHV	22HST408	Universal Human Values	Any Department	1	0	0	-	01	50	50	100	1
9	HS	22CDN409	Aptitude and Verbal Ability Skill - II	Placement Cell	2	0	0	-	-	50	-	50	PP/NP
10	MC	22NSN410	National Service Scheme (NSS)	NSS coordinator	0	0	2	-	-	100	-	100	PP/NP
		22PEN410	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		22YON410	Yoga	Yoga Teacher									
Total									550	400	950	20	

PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical, S= Self-Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation. TD: Teaching Department , PSB: Paper Setting Board.

Emerging Technology Course (ETC) 22CVT405X OR 22CVL405X			
22CVT405A	Advanced Surveying.	22CVT405C	Applied Hydraulics.
22CVT405B	Road Safety & Engineering.	22CVT405D	Ground Improvement Techniques.
Ability Enhancement Course (AEC) - IV 22CVT406X OR 22CVL406X			
22CVT406A	Construction Methods and Equipment.	22CVT406C	Codal Provisions in Civil Engineering.
22CVT406B	Civil Engineering Entrepreneurship and Development.	22CVT406D	Metro & Seaport Engineering.
<p>Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practical of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper.</p> <p>National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE) (Sports and Athletics), and Yoga (YOG) with the concerned coordinator of the course during the first Week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the Degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses is mandatory for the award of Degree.</p>			

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Outcome Based Education(OBE) and Choice Based Credit System
B.E. Name of the programme: Civil Engineering
Tentative Scheme of Teaching and Examination effective from the Academic Year 2023-24

V SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self - Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	HSMS	22CVT501	Construction Project and Management	Civil	3	0	0	-	03	50	50	100	3
2	IPCC	22CVU502	Water and wastewater Treatment	Civil	3	0	2	-	03	50	50	100	4
3	IPCC	22CVU503	Design and drawing of RC Structural Elements	Civil	3	0	2	-	03	50	50	100	4
4	PCCL	22CVL504	Advanced Surveying lab (Total Station)	Civil	0	0	2	-	03	50	50	100	1
5	PEC	22CVT505X	Professional Elective Course	Civil	3	0	0	-	03	50	50	100	3
6	PROJ	22CVM506	Mini Project / Extensive Survey Project	Civil	0	0	4	-	03	100	-	100	2
7	AEC	22RMT507	Research Methodology and IPR	TD: CV PSB: EEE	3	0	0	-	03	50	50	100	3
8	MC	22CVT508	Environmental Studies	TD: CV PSB: CV	2	0	0	-	02	50	50	100	2
9	HS	22CDN509	Aptitude and Verbal Ability Skills	Placement Cell	2	0	0	-	-	50	-	50	PP/NP
10	MC	22NSN510	National Service Scheme (NSS)	NSS coordinator	0	0	2	-	-	100	-	100	PP/NP
		22PEN510	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		22YON510	Yoga	Yoga Teacher									
Total									600	350	950	22	

PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical, S= Self-Study CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation. K: The letter in the course code indicates common to all the stream of Engineering. PROJ: Project /Mini Project. PEC: Professional Elective Course

Professional Elective Course 22CVT505X

22CVT505A	Solid Waste Management.	22CVT505C	Pavement Design.
22CVT505B	Advanced Concrete Technology.	22CVT505D	Masonry Structures.

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National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE) (Sports and Athletics), and Yoga (YOG) with the concerned coordinator of the course during the first Week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the Degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of Degree.

Mini-project work: Mini Project is a laboratory-oriented/hands-on course that will provide a platform to students to enhance their practical knowledge and skills by the development of small systems/applications etc. Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary Mini- project can be assigned to an individual student or to a group having not more than 4 students.

CIE procedure for Mini-project:

(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two faculty members of the Department, one of them being the Guide. The CIE marks awarded for the Mini-project work shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio of 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(ii) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all the guides of the project.

The CIE marks awarded for the Mini-project, shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

No SEE component for Mini-Project.

Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of Engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering a professional elective is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

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Outcome Based Education(OBE) and Choice Based Credit System
B.E. Name of the Programme: Civil Engineering
Tentative Scheme of Teaching and Examination effective from the Academic Year 2023-24

VI SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self - Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	IPCC	22CVU601	Geotechnical Engineering	Civil	3	0	2	-	03	50	50	100	4
2	PCC	22CVT602	Hydrology & Water Resources Engineering	Civil	4	0	0	-	03	50	50	100	4
3	PEC	22CVT603X	Professional Elective Course	Civil	3	0	0	-	03	50	50	100	3
4	OEC	22CVT604X	Open Elective Course	Civil	3	0	0	-	03	50	50	100	3
5	PROJ	22CVP605	Major Project Phase I	Civil	0	0	4	-	03	100	--	100	2
6	PCCL	22CVL606	Software Application Lab	Civil	0	0	2	-	03	50	50	100	1
7	AEC / SDC	22CVT607X OR 22CVL607X	Ability Enhancement Course / Skill Development Course - V	Civil	If the course is offered as a Theory				01	50	50	100	1
					1	0	0	-					
					If course is offered as a practical								
					0	0	2	-					
8	HS	22CDN608	Analytical and Reasoning Skills	Placement	2	0	0	-	-	50	-	50	PP/NP
9	MC	22NSN609	National Service Scheme (NSS)	NSS									
		22PEN609	Physical Education (PE) (Sports and Athletics)	Physical Education Director	0	0	2	-	-	100	-	100	PP/NP
		22YON609	Yoga	Yoga Teacher									
Total									550	300	850	18	

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **UHV:** Universal Human Value Course, **MC:** Mandatory Course (Non-credit), **AEC:** Ability Enhancement Course, **SEC:** Skill Enhancement Course, **L:** Lecture, **T:** Tutorial, **P:** Practical, **S=** Self-Study, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **PROJ:** Project /Mini Project. **PEC:** Professional Elective Course. **PROJ:** Project Phase -I, **OEC:** Open Elective Course.

Professional Elective Course 22CVT603X

22CVT603A	Air Pollution and Control.	22CVT603C	Railways, Airport, Tunnel and Harbour Engineering.
22CVT603B	Structural Health Monitoring.	22CVT603D	Pre Stressed Concrete.

Open Elective Course 22CVT604X			
22CVT604A	Integrated Solid Waste Management.	22CVT604C	Urban Transport System.
22CVT604B	Air Pollution and Control Methods.	22CVT604D	Natural Disaster Mitigation and Management.

Ability Enhancement Course / Skill Enhancement Course – V 22CVT607X OR 22CVL607X			
22CVT607A	Introduction to Technical Paper Writing.	22CVT607C	Industrial Visit.
22CVT607B	Introduction to Real Estate Management.	22CVT607D	Microsoft Office for Civil Engineers.

Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practicals of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-23

National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first Week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the Degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of Degree.

Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of Engineering. Each group will provide an option to select one course. The minimum number of students’ strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

Open Elective Courses:

Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum number of students’ strength for offering an Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.

Project Phase-I : Students have to discuss with the mentor /guide and with their help he/she has to complete the literature survey and prepare the report and finally define the problem statement for the project work.

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Outcome Based Education(OBE) and Choice Based Credit System
B.E. Name of the programme: Civil Engineering

Tentative Scheme of Teaching and Examination effective from the Academic Year 2023-24

VII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical / Drawing	Self – Study	Duration hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	IPCC	22CVU701	Design & Drawing of Steel Structural Elements	Civil	3	0	2	-	03	50	50	100	4
2	IPCC	22CVU702	Design & Drawing of Irrigation & Hydraulic Structures	Civil	3	0	2	-	03	50	50	100	4
3	PCC	22CVT703	Estimation & Costing	Civil	4	0	0	-	03	50	50	100	4
4	PEC	22CVT704X	Professional Elective Course	Civil	3	0	0	-	03	50	50	100	3
5	OEC	22CVT705X	Open Elective Course	Civil	3	0	0	-	03	50	50	100	3
6	PROJ	22CVP706	Major Project Phase – II	Civil	0	0	12	-	03	100	100	200	6
Total:									350	350	700	24	

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **PEC:** Professional Elective Course, **OEC:** Open Elective Course **PR:** Project Work, **L:** Lecture, **T:** Tutorial, **P:** Practical **S=** Self-Study, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work

Professional Elective Course 22CVT704X

22CVT704A	Environmental Impact Assessment.	22CVT704C	Natural Disaster Mitigation and Management.
22CVT704B	Reinforced Soil Structures and Geo-synthetics.	22CVT704D	Traffic Engineering.

Open Elective Course 22CVT705X

22CVT705A	Ecology and Environmental Impact Assessment.	22CVT705C	Intelligent Transport System.
22CVT705B	Occupational Safety and Health Administration.	22CVT705D	Conservation of Natural Resources.

Note: VII and VIII semesters of IV years of the program

- (1) Institutions can swap the VII and VIII Semester Schemes of Teaching and Examinations to accommodate research internships/ industry internships after the VI semester.
- (2) Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether the VII or VIII semesters are completed during the beginning of the IV year or the later part of IV years of the program.

Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of Engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

Open Elective Courses:

Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum number of students' strength for offering an Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.

PROJECT WORK (21CVP75): The objective of the Project work is

- (i) To encourage independent learning and the innovative attitude of the students.
- (ii) To develop interactive attitude, communication skills, organization, time management, and presentation skills.
- (iii) To impart flexibility and adaptability.
- (iv) To inspire team working.
- (v) To expand intellectual capacity, credibility, judgment and intuition.
- (vi) To adhere to punctuality, setting and meeting deadlines. To install responsibilities to oneself and others.
- (vii) To train students to present the topic of project work in a seminar without any fear, face the audience confidently, enhance communication skills, involve in group discussion to present and exchange ideas.

CIE procedure for Project Work:

(1) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the project work shall be based on the evaluation of the project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(2) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable. The CIE marks awarded for the project work shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

SEE procedure for Project Work: SEE for project work will be conducted by the two examiners appointed by the University. The SEE marks awarded for the project work shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25.

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Tentative Scheme of Teaching and Examination effective from the Academic Year 2023-24

VIII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	Self - Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PEC	22CVT801X	Professional Elective (Online Courses)	--	3	0	0	-	-	-	-	-	3
2	OEC	22CVT802X	Open Elective (Online Courses)	--	3	0	0	-	-	-	-	-	3
3	INT	22CVI803	Internship (Industry/Research) (14 - 20 Weeks)	--	0	0	12	-	03	100	100	200	10
Total:									100	100	200	16	

L: Lecture, **T:** Tutorial, **P:** Practical **S=** Self-Study, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work, **INT:** Industry Internship / Research Internship / Rural Internship.

Professional Elective Course (Online courses) 22CVT801X

22CVT801A		22CVT801C	
22CVT801B		22CVT801D	

Open Elective Courses (Online Courses) 22CVT802X

22CVT802A		22CVT802C	
22CVT802B		22CVT802D	

Note: VII and VIII semesters of IV years of the program Swapping Facility

- Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate **research internships/ industry internships/Rural Internship** after the VI semester.
- Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether VII or VIII semester is completed during the beginning of IV year or later part of IV year of the program.

Elucidation:

At the beginning of IV years of the program i.e., after VI semester, VII semester classwork and VIII semester **Research Internship /Industrial Internship / Rural Internship** shall be permitted to be operated simultaneously by the University so that students have ample opportunity for an internship. In other words, a good percentage of the class shall attend VII semester classwork and a similar percentage of others shall attend Research Internship or Industrial Internship or Rural Internship.

Research/Industrial /Rural Internship shall be carried out at an Industry, NGO, MSME, Innovation center, Incubation center, Start-up, center of Excellence (CoE), Study Centre established in the parent institute and /or at reputed research organizations/institutes.

The mandatory Research internship /Industry internship / Rural Internship is for 14 to 20 Weeks. The internship shall be considered as a head of passing and shall be considered for the award of a Degree. Those who do not take up/complete the internship shall be declared to fail and shall have to complete it during the subsequent University examination after satisfying the internship requirements.

Research internship: A research internship is intended to offer the flavor of current research going on in the research field. It helps students get familiarized with the field and imparts the skill required for carrying out research.

Industry internship: Is an extended period of work experience undertaken by students to supplement their Degree for professional development. It also helps them learn to overcome unexpected obstacles and successfully navigate organizations, perspectives, and cultures. Dealing with contingencies helps students recognize, appreciate, and adapt to organizational realities by tempering their knowledge with practical constraints.

Rural Internship: Rural development internship is an initiative of Unnat Bharat Abhiyan Cell, RGIT in association with AICTE to involve students of all departments studying in different academic years for exploring various opportunities in techno-social fields, to connect and work with Rural India for their upliftment.

The faculty coordinator or mentor has to monitor the student's internship progress and interact with them to guide for the successful completion of the internship. The students are permitted to carry out the internship anywhere in India or abroad. University shall not bear any expenses incurred in respect of the internship.

- With the consent of the internal guide and Principal of the Institution, students shall be allowed to carry out the internship at their home town (**within or outside the state or abroad**), provided favorable facilities are available for the internship and the student remains regularly in contact with the internal guide.
University/Institute shall not bear any cost involved in carrying out the internship by students. However, students can receive any financial assistance extended by the organization

Dr. Ambedkar Institute of Technology, Bengaluru-560056
Scheme of Teaching and Examination for I/II Semester B.E. CBCS, Academic Year-2022-23
2022 Scheme: CIVIL ENGINEERING

Physics Cycle										SEMESTER: I				
Sl. No.	Course Category	Course Code	Course Title	Teaching Department	Teaching Hours/Week					Examination			Credits	
					L	T	P	S	Total	Duration(Hrs)	CIE Marks	SEE Marks		Total Marks
1	ASC(IC)	22MAU101A	Mathematics - 1	Maths	2	2	2	0	4+2	03	50	50	100	04
2	ASC(IC)	22PHU102A	Applied Physics	Physics	3	0	2	0	3+2	03	50	50	100	04
3	ESC	22CVT103	Engineering Mechanics	Civil	3	0	0	0	3	03	50	50	100	03
4	ESC-1	22ESX104X	Engineering Science Course	Respective Engg. dept	3	0	0	0	3	03	50	50	100	03
5	ETC-1	22ETT105X	Emerging Technology Course - I	Any Engg. Dept.	3	0	0	0	3	03	50	50	100	03
6	AEC	22ENT106	Communicative English	Humanities	1	0	0	0	1	02	50	50	100	01
7	HSS	22SKT107 / 22BKT107	Sanskritika Kannada / Balake Kannada	Humanities	1	0	0	0	1	02	50	50	100	01
8	HSS	22IDT108	Innovation and Design Thinking	Any dept.	1	0	0	0	1	02	50	50	100	01
9	MC	22CDN109	Career Development Skills - I	Placement Cell	2	0	0	0	2	-	50	---	---	NP/PP
Total									26		450	400	800	20

TD/PSB- Teaching Department / Paper Setting Board, **SS**-Self Study, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSS**-Humanity and Social Science Course, **CIE** –Continuous Internal Evaluation, **SEE**- Semester End Examination,

IC – Integrated Course (Theory Course Integrated with Practical Course)

Credit Definition:

1-hour Lecture (**L**) per week=**1Credit**

2-hours Tutorial(**T**) per week=**1Credit**

2-hours Practical / Drawing (**P**) per week=**1Credit**

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

03- Credits courses are to be designed for 40 hours of Teaching-Learning Session

02- Credits courses are to be designed for 25 hours of Teaching-Learning Session

01- Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions

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. For details, refer to the ANNEXURE I of Induction Programs notification of the University published at the beginning of the 1st semester.

AICTE Activity Points to be earned by students admitted to B.E. day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines): Over and above the academic grades, every regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, any time during the semester, weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hour's requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

***22MAU101A** Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers

#- **22PHU102A** SEE shall have the 03 hours of theory examination), however, practical sessions question shall be included in the theory question papers.

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 the of course required practical learning then the syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0). **All PLC courses are Integrated courses.**

All 01 Credit - courses shall have the SEE of **02 hours duration and the pattern of the question paper shall be MCQ**

(ESC - I) Engineering Science Courses - I					(ETC-I) Emerging Technology Courses -I				
Code 22ESX104X	Title	L	T	P	Code 22ETT105X	Title	L	T	P
22EST104A	Introduction to Civil Engineering	3	0	0	22ETT1051	Introduction to Cyber Security	3	0	0
22EST104B	Introduction to Electrical Engineering	3	0	0	22ETT1052	Introduction to Internet of Things (IOT)	3	0	0
22EST104C	Introduction to Electronics Engineering	3	0	0	22ETT1053	Renewable Energy Sources	3	0	0
22EST104D	Introduction to Mechanical Engineering	3	0	0	22ETT1054	Basics of Waste Management	3	0	0
22ESU104E	Introduction to C Programming	2	0	2	22ETT1055	Green Buildings	3	0	0
					22ETT1056	Smart Materials and Systems	3	0	0
					22ETT1057	Introduction to Nanotechnology	3	0	0
					22ETT1058	Introduction to Sustainable Engineering	3	0	0
					22ETT1059	Introduction to Embedded System	3	0	0
(PLC-I) Programming Language Courses-I					Applied Science Course (IC)				
Code 22PLU105X	Title	L	T	P	Code	Title	L	T	P
22PLU105A	Introduction to Web Programming	2	0	2	22MAU101A	Mathematics – 1 for CV stream	3	0	2
22PLU105B	Introduction to Python Programming	2	0	2	22PHU102A	Applied Physics for CV stream	3	0	2
22PLU105C	Basics of JAVA programming	2	0	2					
22PLU105D	Introduction to C++ Programming	2	0	2					
The course 22ESU104E:									
Introduction to C Programming, and all courses under PLC and ETC groups can be taught by faculty of ANY DEPARTMENT									

- The student has to select one course from the ESC-I group.
- Civil Engineering Students shall opt for any one of the courses from the ESC-I group except, **22EST104A - Introduction to Civil Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-I or PLC-I group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa

Dr.Ambedkar Institute of Technology, Bengaluru-560056
Scheme of Teaching and Examination for I/II Semester B.E. CBCS, Academic Year-2022-23
2022 Scheme: CIVIL ENGINEERING

Chemistry Cycle					SEMESTER: II									
Sl. No.	Course Category	Course Code	Course Title	Teaching Department	Teaching Hours/Week					Examination				Credits
					L	T	P	S S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	ASC(IC)	22MAU201A	Mathematics - II	Maths	2	2	2	0	4+2	3	50	50	100	4
2	ASC(IC)	22CHU202C	Applied Chemistry	Chemistry	3	0	2	0	3+2	3	50	50	100	4
3	ESC	22MED203	Computer Aided Engg. drawing	Civil/Mech.	2	0	2	0	2+2	3	50	50	100	3
4	ESC-II	22ESX204X	Engineering Science Course - II	Respective Engg. dept	3	0	0	0	3	3	50	50	100	3
5	ETC-II	22PLU205X	Programming Language Course	Any Engg. Dept	2	0	2	0	3	3	50	50	100	3
6	AEC	22ENT206	Professional writing skill	Humanities	1	0	0	0	1	2	50	50	100	1
7	HSS	22CIT207	Constitution of India	Humanities	1	0	0	0	1	2	50	50	100	1
8	HSS	22SFT208	Scientific Foundation of Health	Humanities	1	0	0	0	1	2	50	50	100	1
9	MC	22CDN209	Career Development Skills - II	Placement Cell	2	0	0	0	2	-	50	---	---	NP/PP
Total									26		500	450	800	20

TD/PSB- Teaching Department / Paper Setting Board, **SS**-Self Study, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSS**-Humanity and Social Science Course, **CIE** –Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

<p>Credit Definition: 1-hour Lecture (L) per week=1Credit 2-hours Tutorial(T) per week=1Credit 2-hours Practical / Drawing (P) per week=1Credit</p>	<p>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 03-Credits courses are to be designed for 40 hours of Teaching-Learning Session 02- Credits courses are to be designed for 25 hours of Teaching-Learning Session 01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions</p>
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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. For details, refer to the ANNEXURE I of Induction Programs notification of the University published at the beginning of the 1st semester.

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*-**22MAU201A** Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers
 #- **22CHU202C** SEE shall have the 03 hours of theory examination however, practical sessions question shall be included in the theory question papers
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 the of course required practical learning then the syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0). All **PLC** courses are Integrated courses.
All 01 Credit- courses shall have the SEE of **02 hours duration and the pattern of the question paper shall be MCQ**

(ESC-II) Engineering Science Courses II					(ETC-II) Emerging Technology Courses - II				
Code 22ESX204X	Title	L	T	P	Code 22ETT205X	Title	L	T	P
22EST204A	Introduction to Civil Engineering	3	0	0	22ETT2051	Introduction to Cyber Security	3	0	0
22EST204B	Introduction to Electrical Engineering	3	0	0	22ETT2052	Introduction to Internet of Things (IOT)	3	0	0
22EST204C	Introduction to Electronics Engineering	3	0	0	22ETT2053	Renewable Energy Sources	3	0	0
22EST204D	Introduction to Mechanical Engineering	3	0	0	22ETT2054	Basics of Waste Management	3	0	0
22ESU204E	Introduction to C Programming	2	0	2	22ETT2055	Green Buildings	3	0	0
					22ETT2056	Smart Materials and Systems	3	0	0
					22ETT2057	Introduction to Nanotechnology	3	0	0
					22ETT2058	Introduction to Sustainable Engineering	3	0	0
					22ETT2059	Introduction to Embedded System	3	0	0
(PLC-II) Programming Language Courses-II					Applied Science Course (ASC)				
Code 22PLU205X	Title	L	T	P	Code	Title	L	T	P
22PLU205A	Introduction to Web Programming	2	0	2	22MAU201A	Mathematics – II for CV	3	0	2
22PLU205B	Introduction to Python Programming	2	0	2	22CHU202C	Applied Chemistry for CV	3	0	2
22PLU205C	Basics of JAVA programming	2	0	2					
22PLU205D	Introduction to C++ Programming	2	0	2					
The course 22ESU204E:									
Introduction to C Programming, and all courses under PLC and ETC groups can be taught by faculty of ANY DEPARTMENT									

- The student has to select one course from the ESC-II group.
- Civil Engineering Students shall opt for any one of the courses from the ESC-II group except, **22EST204A - Introduction to Civil Engineering.**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-II or PLC-II group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa