

Dr. Ambedkar Institute of Technology, Bengaluru-560056

Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP2020)

Scheme of Teaching and Examination for I /II Semester B.E., (Common to all B.E. Programmes) Academic Year: 2021-22

Physics Cycle : I/II Semester														
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	BS	21MAT101	Calculus and Linear Algebra	Mathematics	3	2	0	0	5	3	50	50	100	4
		21MAT201	Advanced Calculus and Numerical methods											
2	BS	21PHT102/ 21PHT202	Engineering Physics	Physics	3	0	0	0	3	3	50	50	100	3
3	ES	21EET103/ 21EET203	Basic Electrical Engineering	Electrical	2	2	0	0	4	3	50	50	100	3
4	ES	21CVT104/ 21CVT204	Civil Engineering & Mechanics	Civil	3	0	0	0	3	3	50	50	100	3
5	ES	21MED105/ 21MED205	Computer aided Engineering Drawing	Mechanical	2	0	2	0	4	3	50	50	100	3
6	BS	21PHL106/ 21PHL206	Engineering Physics Lab	Physics	0	0	2	0	2	3	50	50	100	1
7	ES	21EEL107/ 21EEL207	Basic Electrical lab	Electrical	0	0	2	0	2	3	50	50	100	1
8	HS	21HST108	Communicative English	Humanities	1	0	1*	0	2	2	50	50	100	1
		21HST208	Professional writing skills in English											
9	AE	21HST109	Health and Wellness	Humanities	1	0	1*	0	2	2	50	50	100	1
		21CVT209	Rural Development Engineering	Civil										
10	MC	21HSN110	Career Development skill-I	Humanities	1	0	1*	0	2	--	50	-	PP/NP	0
		21HSN210	Career Development skill-II											
Total									29		500	450	900	20
<p>Note: BS: Basic Science Course, ES: Engineering Science Course, HS: Humanities & Social Science Course, AE: Ability Enhancement Course, MC: Mandatory Course, * No practical evaluation, L: Lecture, T:Tutorial, P:Practical/drawing, S: Self-study, CIE: Continuous Internal Evaluation, SEE: Semester End Examination</p>														

Dr. Ambedkar Institute of Technology, Bengaluru-560056

Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP2020)

Scheme of Teaching and Examination for I/II Semester B.E., (Common to all B.E. Programmes) Academic Year: 2021-22

Chemistry Cycle: I/II Semester														
Sl. No.	Course Category	Course Code	Course Title	Teaching Department	Teaching Hrs/ Week					Examination				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	BS	21MAT101	Calculus and Linear Algebra	Mathematics	3	2	0	0	5	3	50	50	100	4
		21MAT201	Advanced Calculus and Numerical methods											
2	BS	21CHT102/ 21CHT202	Engineering Chemistry	Chemistry	3	0	0	0	3	3	50	50	100	3
3	ES	21CST103/ 21CST203	Problem solving through Programming	Computer Science	2	2	0	0	4	3	50	50	100	3
4	ES	21ECT104/ 21ECT204	Basic Electronics and Communication Engineering	Electronics	2	2	0	0	4	3	50	50	100	3
5	ES	21MET105/ 21MET205	Elements of Mechanical Engineering	Mechanical	2	2	0	0	4	3	50	50	100	3
6	BS	21CHL106/ 21CHL206	Engineering Chemistry Laboratory	Chemistry	0	0	2	0	2	3	50	50	100	1
7	ES	21CSL107/ 21CSL207	Computer Programming Laboratory	Computer Science	0	0	2	0	2	3	50	50	100	1
8	HS	21HST108	Communicative English	Humanities	1	0	1*	0	2	2	50	50	100	1
		21HST208	Professional writing skills in English											
9	AE	21CVT109	Rural Development	Civil	1	0	1*	0	2	2	50	50	100	1
		21HST209	Health and Wellness	Humanities										
10	MC	21HSN110	Career Development skill-I	Humanities	1	0	1*	0	2	---	50	--	PP/NP	0
		21HSN210	Career Development skill-II											
Total									30		500	450	900	20

Note –At the end of the second-semester summer internship shall be carried out – based on inter/intra institutional activities credited in the third semester. University /Institutions may swap few courses between a FIRST and SECOND semester to balance the workload teaching and laboratory schedule

Summer Internship - I: All the students admitted shall have to undergo a mandatory summer internship of 03 weeks during the vacation of II semesters. Summer Internship shall include Inter / Intra Institutional activities. Internship A University Viva-voce examination shall be conducted during III semesters and the prescribed credit shall be included in III semesters. The internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements

Dr. Ambedkar Institute of Technology, Bangalore-56
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP 2020)

Name of the Programme: **B E (CIVIL ENGINEERING)**

Tentative Scheme of Teaching and Examination Effective from the Academic Year 2021-22

III Semester

Sl No	Course Category	Course Code	Course Title	Teaching Department	Teaching Hours / Week					Examinations			Credits	
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks		Total Marks
1	BSC	21MAT301 CV	Mathematics Course	Mathematics	3	0	0	0	3	3	50	50	100	3
2	IPCC	21CVT302	Strength of Materials	Civil	3	0	2	0	5	3	50	50	100	4
3	IPCC	21CVT303	Surveying	Civil	3	0	2	0	5	3	50	50	100	4
4	PCC	21CVT304	Engineering Geology and Building Materials	Civil	3	0	0	0	3	3	50	50	100	3
5	PCC	21CVL305	Construction Materials Lab	Civil	0	0	2	0	2	3	50	50	100	1
6	UHV	21HST306	Social Connect and Responsibility	Civil	0	0	1	0	1	1	50	50	100	1
7	HSSC	21HST3S07/ 21HST3B07	Samskritika / Balake Kannada		1	0	0	1	2	1	50	50	100	1
		OR												
		21HST307	Constitution of India & Professional Ethics (CIP)											
8	AEC	21CVT308X	Ability Enhancement Course – III	Civil	If offered as Theory Course				1	1	50	50	100	1
					1	0	0	0						
					If offered as Lab Course				2	2				
0	0	2	0											
9	HSSC	21HSN309	Professional Skills	HSS	1	0	1	0		2	50		PP/NP	0
										Total	450	400	800	18
10	Scheduled	21HSNS803	National Service Scheme (NSS)	NSS	All students have to register for any one of the courses namely National Service Scheme, Physical Education (PE) (Sports and Athletics), and Yoga									

activities for III to VIII Semester	21HSN803	Physical Education (PE) (Sports and Athletics)	PE	with the concerned coordinator of the course during the first week of III semester. The activities shall be carried out between III semesters to VIII semester (for 5 semesters). SEE in the above courses shall be conducted during VIII semester examinations and the accumulated CIE marks shall be added to the SEE marks. Successful completion of the registered course 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.
	21HSN803	Yoga	Yoga	

Course prescribed to lateral entry Diploma holders admitted to III semester B.E. programs

11	21MAN311	Additional Mathematics - I	Mathematics	2	2				50	50	PP/NP
----	----------	----------------------------	-------------	---	---	--	--	--	----	----	-------

Note:
BSC: Basic Science Course, **IPCC:** Integrated Professional Core Course, **PCC:** Professional Core Course, **INT :** Internship, **HSSC:** Humanity and Social Science Courses,
AEC: Ability Enhancement Courses, **UHV:** Universal Human Value Course.
L–Lecture, **T–**Tutorial, **P–**Practical/Drawing, **S–**Self Study Component, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Examination.
TD–Teaching Department, **PSB:** Paper Setting department.

21HST307/407 Samskrutika Kannada is for students who speak, read and write Kannada/Balake Kannada is for non-Kannada speaking, reading, and writing students.

Integrated Professional Core Course (IPCC):
Refers to Professional Theory Core Course 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 these question paper.

21XXI413 Inter/Intra Institutional Internship:
All the students admitted to engineering programs under the lateral entry category shall have to undergo a mandatory **21XXI413** Inter/Intra Institutional Internship of **03 weeks** during the intervening period of III and IV semesters. The internship shall be slated for CIE only and will not have SEE. The letter grade earned through CIE shall be included in the IV semester grade card. The internship shall be considered as a head of passing and shall be considered for vertical progression and for the award of degree. Those, who do not take up /complete the internship shall be declared fail and shall have to complete subsequently after satisfying the internship requirements. The faculty coordinator or mentor shall monitor the students 'internship progress and interact with them for the successful completion of the internship.

Non–credit mandatory courses (NCCM):
(A) Additional Mathematics I and II:
(1) These courses are prescribed for III and IV semesters respectively to lateral entry Diploma holders admitted to III semester of B.E./B.Tech. programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to

have secured an F grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

(2) Additional Mathematics I and II shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.

(3) Successful completion of the courses Additional Mathematics I and II shall be indicated as **NP/PP** in the grade card. Non-completion of the courses Additional Mathematics I and II shall be indicated as unsatisfactory.

(B) Placement Training: These courses are prescribed for I and VI semesters respectively to the students of B.E. programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have secured an **NP (not pass)** grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

National Service Scheme / Physical Education (Sport and Athletics) / Yoga:

(1) Securing 40% or more in CIE, 35% or more marks in SEE and 40% or more in the sum total of CIE + SEE leads to successful completion of the registered course.

(2) In case, students fail to secure 35% marks in SEE, they have to appear for SEE during the subsequent examinations conducted by the University.

(3) In case, any student fails to register for NSS, PE or Yoga/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks.

(4) Successful completion of the course shall be indicated as satisfactory in the grade card. Non-completion of the course shall be indicated as Unsatisfactory.

(5) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of a degree.

Ability Enhancement Course - III	
21CVT3081	Photogrammetry and Remote Sensing
21CVT3082	Sustainable Materials and Green Buildings
21CVT3083	Fire safety in Buildings
21CVT3084	Pavement Materials and Construction

Dr. Ambedkar Institute of Technology, Bangalore-56
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP 2020)

Name of the Programme: **B E (CIVIL ENGINEERING)**

Tentative Scheme of Teaching and Examination Effective from the Academic Year 2021-22

IV Semester															
Sl No	Course Category	Course Code	Course Title	Teaching Department	Teaching Hours / Week					Examinations				Credits	
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks		
1	BSC	21MAT401	Mathematics Course	Mathematics							3	50	50	100	3
2	IPCC	21CVT402	Water Supply and Sanitary Engineering	Civil	3	0	2	0	5		3	50	50	100	4
3	IPCC	21CVT403	Fluid Mechanics and Machinery	Civil	3	0	2	0	5		3	50	50	100	4
4	PCC	21CVT404	Structural Analysis	Civil	3	0	0	0	3		3	50	50	100	3
5	PCC	21CVL405	Computer Aided Building Planning and Drawing	Civil	0	0	2	0	2		3	50	50	100	1
6	AEC	21HST406	Biology for Engineering	CHE/PHY/ML	2	0	0	0	2		2	50	50	100	2
7	HSSC	21HST4S07/ 21HST4B07	Sanskritika Kannada / Balake Kannada		1	0	0	0	2	1	50	50	100	1	
		OR													
		21HST407	Constitution of India & Professional Ethics (CIP)												
8	AEC	21CVT408X	Ability Enhancement Course - IV	Civil	If offered as Theory Course				1	1	50	50	100	1	
					1	0	0	0							
					If offered as Lab Course				2	2					
					0	0	2	0							
9	HSSC	21HSN409	Professional Skills	HSS	1	0	1	0			2	50		PP/NP	0
10	UHV	21HST410	Universal Human Values	Any Department							1	50	50	100	1

11	INT	21CVI411	Inter / Intra Institutional Internship	Evaluation by the appropriate authorities	Completed during the intervening period of II and III semesters by students admitted to first year of BE / B Tech and during the intervening period III and IV semesters by Lateral entry students admitted to III Semester.	3	50		100	2	
Total							550	450	1000	22	
Course prescribed to lateral entry Diploma holders admitted to III semester B.E programs											
12		21MAN412	Additional Mathematics - I	Mathematics	2	2			100	100	0
Note:											
BSC: Basic Science Course, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, AEC: Ability Enhancement Courses HSSC: Humanity and Social Science Courses, UHV: Universal Human Value Courses. L– Lecture, T– Tutorial, P - Practical/Drawing, S– Self Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination.											
21HST307/407 Samskrutika Kannada is for students who speak, read and write Kannada and 21KBK37/47 Balake Kannada is for non-Kannada speaking, reading, and writing students.											
Integrated Professional Core Course (IPCC):											
Refers to Professional Theory Core Course 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.											
Non–credit mandatory course(NCMC):											
(A)Additional Mathematics –II:											
1) Lateral entry Diploma holders admitted to III semester of B.E./B.Tech..., shall attend the classes during the IV semester to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40% of the prescribed CIE marks, he/she shall be deemed to have secured an F grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.											
2) Additional Mathematics I and II shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.											
(3) Successful completion of the course Additional Mathematics-II shall be indicated as satisfactory in the grade card. Non-completion of the courses Additional Mathematics-II shall be indicated as Unsatisfactory.											

(B)Placement Training: These courses are prescribed for I and VI semesters respectively to the students of all B.E. programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have secured an **NP (not pass)** grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and have no SEE.

Internship of 04 weeks during the intervening period of IV and V semesters; 21XXI413 Innovation/Entrepreneurship/Societal based Internship.

- 1) All the students shall have to undergo a mandatory internship of **04 weeks** during the intervening period of IV and V semesters. The internship shall be slated for CIE only and will not have SEE. The letter grade earned through CIE shall be included in the VI semester grade card. The internship shall be considered as a head of passing and shall be considered for vertical progression and for the award of degree. Those, who do not take up /complete the internship shall be considered under F (fail) grade and shall have to complete during subsequently after satisfying the internship requirements
- 2) Innovation/ Entrepreneurship Internship shall be carried out at industry, State and Central Government /Non-government organizations (NGOs), micro, small and medium enterprises (MSME), Innovation centers, or Incubation centers. Innovation need not be a single major breakthrough; it can also be a series of small or incremental changes. Innovation of any kind can also happen outside of the business world.
Entrepreneurship internships offer a chance to gain hands-on experience in the world of entrepreneurship and help to learn what it takes to run a small entrepreneurial business by performing intern duties with an established company. This experience can then be applied to future business endeavors. Start-ups and small companies are a preferred place to learn the business tactics for future entrepreneurs as learning how a small business operates will serve the intern well when he/she manages his/her own company. Entrepreneurship acts as a catalyst to open the minds to creativity and innovation. Entrepreneurship internships can be from several sectors, including technology, small and medium-sized, and the service sector.
- 3) **Societal or social internship:** Urbanization is increasing on a global scale; and yet, half the world’s population still resides in rural areas and is devoid of many things that urban population enjoys. The rural internship is a work-based activity in which students will have a chance to solve/reduce the problems of the rural place for better living.

Ability Enhancement Course – IV	
21CVT4081	Construction Methods and Equipment
21CVT4082	Soil and Water Conservation Engineering
21CVT4083	Ecology and Environment
21CVT4084	Cartography and GIS Concepts

Dr. Ambedkar Institute of Technology, Bangalore-56
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP 2020)

Name of the Programme: **BE (CIVIL ENGINEERING)**

Tentative Scheme of Teaching and Examination Effective from the Academic Year 2021-22

V Semester														
Sl No .	Course Category	Course Code	Course Title	Teaching Department	Teaching Hours / Week					Examinations				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	PCC	21CVT501	Design of RCC Structural Elements	Civil	3	0	0	0	3	3	50	50	100	3
2	IPCC	21CVT502	Concrete Technology	Civil	3	0	2	0	5	3	50	50	100	4
3	PCC	21CVT503	Highway Engineering	Civil	3	0	0	0	3	3	50	50	100	3
4	PCC	21CVT504	Hydrology & Irrigation Engineering	Civil	3	0	0	0	3	3	50	50	100	3
5	PCCL	21CVL505	Software Application Laboratory	Civil	0	0	2	0	2	3	50	50	100	1
6	AEC	21CVT506	Research Methodology & Intellectual property rights	TD: Any Department. PSB: As identified by the institute	2	0	0	0	2	2	50	50	100	2
7	HSSC	21CVT507	Environmental Studies	TD: Civil / Chemistry PSB: Civil	1	0	0	0	1	1	50	50	100	1
8	AEC	21CVT508X	Ability Enhancement Course - V	Civil	If offered as Theory Course				1	1	50	50	100	1
					1	0	0	0						
					If offered as Lab Course				2	2				
1	0	2	0											
9	HSSC	21HSN509	Aptitude and Verbal ability skills	Placement Cell	1	0	1	0	-	2	50	-	PP/NP	0
Total											450	400	800	18
Note:														

BSC: Basic Science Course, **PCC:** Professional Core Course, **IPCC:** Integrated Professional Core Course, **AEC:** Ability Enhancement Course **INT:** Internship, **HSSC:** Humanity and Social Science Courses.

L–Lecture, **T** –Tutorial, **P**-Practical/Drawing, **S**–Self Study Component, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Examination.

Integrated Professional Core Course (IPCC):

Refers to Professional Theory Core Course 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 CIE only and there shall be no SEE.

Ability Enhancement Course - V	
21CVT5081	Extensive Survey Project
21CVT5082	Detailing of Reinforced Structures
21CVT5083	Hazardous Waste Management
21CVT5084	Highway Geometric Design

Dr. Ambedkar Institute of Technology, Bangalore-56
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP 2020)

Name of the Programme: **B E (CIVIL ENGINEERING)**

Tentative Scheme of Teaching and Examination Effective from the Academic Year 2021-22

VI Semester														
Sl No	Course Category	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Examinations				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	HSSC	21CVT601	Construction Management Project	Civil	3	0	0	0	3	3	50	50	100	3
2	IPCC	21CVT602	Geotechnical Engineering	Civil	3	0	2	0	5	3	50	50	100	4
3	PCC	21CVT603	Design of Steel Structures	Civil	3	0	0	0	3	3	50	50	100	3
4	PEC	21CVT604X	Professional Elective Course - I	Civil	3	0	0	0	3	3	50	50	100	3
5	OEC	21CVT605X	Open Elective Course – I	Civil	3	0	0	0	3	3	50	50	100	3
6	PCCL	21CVL606	Computer Aided Drawing of RC & Steel Structures	Civil	0	0	2	0	2	3	50	50	100	1
7	MP	21CVM607	Mini Project	2 Contact Hours / Week interaction between faculty and students					-	100	-	100	2	
8	INT	21CVI608	Innovation / Entrepreneurship / Societal Internship	Completed during the intervening period of IV & V Semesters (Extensive Survey)					-	100	-	100	3	
9	HSSC	21HSN609	Analytical and Reasoning Skills	Placemnt Cell	2	0	0	0	2	-	50	-	PP/NP	0
Total										550	300	800	22	

Note:
BSC: Basic Science Course, **PCC:** Professional Core Course, **IPCC:** Integrated Professional Core Course, **AEC:** Ability Enhancement Course **INT:** Internship, **HSSC:** Humanity and Social Science Courses.
L–Lecture, **T** –Tutorial, **P**-Practical/Drawing, **S**–Self Study Component, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Examination.

Integrated Professional Core Course (IPCC):
Refers to Professional Theory Core Course 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 CIE only and there shall be no SEE.

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 out of five courses. The minimum student's strength for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the programme is less than 10.

Open Elective Courses:

Students belonging to a particular stream of Engineering and Technology are noted. Title for the open electives offered by their parent Department. However, they can opt 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.

Selection of an open elective shall **not be allowed** if,

- (i) The candidate has studied the same course during the previous semesters of the program.
- (ii) The syllabus content of open electives is similar to that of the Departmental core courses or professional electives.
- (iii) A similar course under any category, is prescribed in the higher semester of the program.

In case, any college is desirous of offering a course (not included in the Open Elective List of the University) from streams such as Law, Business (MBA), Medicine, Arts, Commerce, etc., can seek permission, at least one month before the commencement of the semester, from the University by submitting a copy of the syllabus along with the details of expertise available to teach the same in the college.

The minimum students' strength for offering open electives is 10. However, this conditional shall not be applicable to cases where the admission to The programme is less than 10.

Mini-project work:

Mini Project is a laboratory-oriented course which will provide a platform to students to enhance the practical knowledge and skills by the development of small systems/applications.

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 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 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 - I	
Course Code	Course Title
21CVTE6041	Matrix Method of Structural Analysis
21CVTE6042	Solid Waste Management
21CVTE6043	Alternate Building Materials and Technology
21CVTE6044	Traffic Engineering
21CVTE6045	Structural Dynamics

Open Elective Courses - I	
Course Code	Course Title
21CVTE6051	Urban Transport Planning
21CVTE6052	Air Pollution and Control Methods
21CVTE6053	Integrated Solid Waste Management
21CVTE6054	Natural Disaster Mitigation and Management



Dr. Ambedkar Institute of Technology, Bangalore-56
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (As per NEP 2020)

Name of the Programme: **B E (CIVIL ENGINEERING)**

Tentative Scheme of Teaching and Examination Effective from the Academic Year 2021-22

VII Semester														
Sl No .	Course Category	Course Code	Course Title	Teaching Department	Teaching Hours / Week					Examinations				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	PCC	21CVT701	Estimation and Valuation	Civil	3	0	0	0	3	3	50	50	100	3
2	PCC	21CVT702	Pre-stressed Concrete	Civil	3	0	0	0	3	3	50	50	100	3
3	PEC	21CVTE703X	Professional Elective Course - II	Civil	3	0	0	0	3	3	50	50	100	3
4	PEC	21CVTE704X	Professional Elective Course – III	Civil	3	0	0	0	3	3	50	50	100	3
5	OEC	21CVTE705X	Open Elective - II	Concern Department	3	0	0	0	3	3	50	50	100	3
6	PROJECT	21CVP706	Project Work	Civil	2 Contact Hours / Week interaction between faculty and students					3	100	100	200	10
Total										-	350	350	700	25

Note:

PCC: Professional Core Course, **PEC:** Professional Elective Courses, **OEC:** Open Elective Course, **AEC:** Ability Enhancement Courses.

L – Lecture, **T** – Tutorial, **P** - Practical / Drawing, **S** – Self Study Component, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Examination.

PROJECT WORK (21CVP706): The objective of the Project work is

- 1) To encourage independent learning and the innovative attitude of the students.
- 2) To develop interactive attitude, communication skills, organization, time management, and presentation skills.
- 3) To impart flexibility and adaptability.
- 4) To inspire team working.
- 5) To expand intellectual capacity, credibility, judgment and intuition.
- 6) To adhere to punctuality, setting and meeting deadlines.

7) To install responsibilities to oneself and others.

8) 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.
- 2) 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.
- 3) 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.
- 4) 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.

Note:

VII and VIII semesters of IV year of the programme

- (1) Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate research internship/ industry internship 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 VII or VIII semester is completed during the beginning of IV year or later part of IV year of the program.

Professional Elective Courses - II	
Course Code	Course Title
21CVTE7031	Applied Geotechnical Engineering
21CVTE7032	Earthquake Resistant Design of Structures
21CVTE7033	Environmental Impact Assessment
21CVTE7034	Railways, Airport, Tunnel and Harbour Engineering
21CVTE7035	Design of Hydraulic Structures

Professional Elective Courses - III	
Course Code	Course Title
21CVTE7041	Pavement Design
21CVTE7042	Design of Concrete bridge Structures
21CVTE7043	Air Pollution and Control Technologies
21CVTE7044	Reinforced Soil Structures and Geo-synthetics
21CVTE7045	Green Building

Open Elective Courses - II	
Course Code	Course Title
21CVTE7051	Intelligence Transport System
21CVTE7052	Occupational Safety and Health Administration
21CVTE7053	Ecology and Environmental Impact Assessment
21CVTE7054	Conservation of Natural Resources
21CVTE7055	Sustainable Building Materials



VIII Semester														
Sl No	Course Category	Course Code	Course Title	Teaching Department (TD)/ Paper setting Board (PSB)	Teaching Hours / Week					Examinations				Credits
					L	T	P	S	Total	Duration (Hrs)	CIE Marks	SEE Marks	Total Marks	
1	SEMINAR	21CVS801	Technical Seminar	Civil	One Contact hour/ week for interaction between the faculty and students					-	100	-	100	1
2	INTERNSHIP	21CVI802	Research Internship/ Industry Internship	Civil	Two contact hours /week for interaction between the Faculty and students.					03 (Batchwise)	100	100	200	15
3	NCMC	21XX803	National Service Scheme (NSS)	NSS	Completed during the intervening period of III semester to VIII semester.					-	50	50	100	-
		21XX803	Physical Education (PE) (Sports And Athletics)	PE										
		21XX803	Yoga	Yoga										
Total									-	250	150	400	16	

TECHNICAL SEMINAR (21CVS801):

The objective of the seminar is to inculcate self-learning, present the seminar topic confidently, enhance communication skill, involve in group discussion for exchange of ideas. Each student, under the guidance of a Faculty, shall choose, preferably, a recent topic of his/her interest relevant to the programme of Specialization.

- (i) Carry out literature surveys, systematically organize the content.
- (ii) Prepare the report with your own sentences, avoiding a cut and paste act.
- (iii) Type the matter to acquaint yourself with the use of Microsoft equation and drawing tools or any such facilities.
- (iv) Present the seminar topic orally and/or through PowerPoint slides.
- (v) Answer the queries and involve in debate/discussion.

(vi) Submit a typed report with a list of references.

(vii) The participants shall take part in the discussion to foster a friendly and stimulating environment in which the students are motivated to reach high standards and become self-confident.

Evaluation Procedure:

The CIE marks for the seminar shall be awarded (based on the relevance of the topic, presentation skill, participation in the question and answer session, and quality of report) by the committee constituted for the purpose by the Head of the Department. The committee shall consist of three teachers from the department with the senior-most acting as the Chairman.

Marks distribution for CIE of the course:

Seminar Report: 50 marks Presentation skill: 25 marks

Question and Answer: 25 marks. No SEE component for Technical Seminar

Non – credit mandatory courses (NCCM):

National Service Scheme/Physical Education (Sport and Athletics) / Yoga:

- 1) Securing 40% or more in CIE, 35 % or more marks in SEE and 40 % or more in the sum total of CIE + SEE leads to successful completion of the registered course.
- 2) In case, students fail to secure 35 % marks in SEE, they have to appear for SEE during the subsequent examinations conducted by the University.
- 3) In case, any student fails to register for NSS, PE or Yoga/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements subsequently to earn the qualifying CIE marks subject to the maximum program period.
- 4) Successful completion of the course shall be indicated as pass (PP) in the grade card. Non-completion of the course (NP) shall be indicated as Unsatisfactory.
- 5) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.