

**Scheme of Teaching and Examination from the Academic Year 2020-21
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)**

I SEMESTER B.E (PHYSICS GROUP)

Sl. No	Course and Course Code		Course Title	Teaching Department	Paper Setting Board	Teaching Hours /Week		Examination					Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
						L	T						
1	BC	18MA11	Calculus and Linear Algebra	Mathematics	Science	3	2	--	03	50	50	100	4
2	BC	18PH12	Engineering Physics	Physics	Science	4	--	--	03	50	50	100	4
3	ES	18EE13	Basic Electrical Engineering	E and E Engineering	E and E Engineering	2	2	--	03	50	50	100	3
4	ES	18CV14	Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	2	2	--	03	50	50	100	3
5	ES	18MEL15	Engineering Graphics and Design	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	--	2	03	50	50	100	3
6	BC	18PHL16	Engineering Physics Laboratory	Physics	Science	--	--	2	03	50	50	100	1
7	ES	18EEL17	Basic Electrical Engineering Laboratory	E and E Engineering	E and E Engineering	--	--	2	03	50	50	100	1
8	Hu	18HS11/ 18HS12	English/ Kannada	Humanities	Humanities	1	--	2	02	50	50	100	1
TOTAL						13	06	08	21	350	350	700	20

II SEMESTER B.E (CHEMISTRY GROUP)

Sl. No	Course and Course Code		Course Title	Teaching Department	Paper Setting Board	Teaching Hours /Week		Examination					Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
						L	T						
1	BC	18MA21	Advanced Calculus and Numerical Methods	Mathematics	Science	3	2	--	03	50	50	100	4
2	BC	18CH22	Engineering Chemistry	Chemistry	Science	4	--	--	03	50	50	100	4
3	ES	18CS23	C Programming for Problem Solving	Computer Science and	Computer Science and	2	2	--	03	50	50	100	3
4	ES	18ELN24	Basic Electronics	ECE/E and I/ TC	E and C Engineering	2	2	--	03	50	50	100	3
5	ES	18ME25	Elements of Mechanical Engineering	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	2	--	03	50	50	100	3
6	BC	18CHL26	Engineering Chemistry Laboratory	Chemistry	Science	--	--	2	03	50	50	100	1
7	ES	18CSL27	Computer Programming Laboratory	Computer Science and Engineering	Computer Science and Engineering	--	--	2	03	50	50	100	1
8	Hu	18HS21/ 18HS22	English /Kannada	Humanities	Humanities	1	--	2	02	50	50	100	1
TOTAL						13	08	06	23	400	400	800	20

Note: BC: Science Course, ES: Engineering Science, Hu: Humanity and Social Science.

Definition of Credit:

1 hour Lecture (L) per week per semester =1 Credit

2 hour Tutorial (T) per week per semester =1 Credit

2 hour Practical/Laboratory/Drawing (P) per week per semester =1 Credit.

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

I SEMESTER B.E (CHEMISTRY GROUP)

Sl. No	Course and Course Code		Course Title	Teaching Department	Paper Setting Board	Teaching Hours /Week		Examination					Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
						L	T						
1	BC	18MA11	Calculus and Linear Algebra	Mathematics	Science	3	2	--	03	50	50	100	4
2	BC	18CH12	Engineering Chemistry	Chemistry	Science	4	--	--	03	50	50	100	4
3	ES	18CS13	C Programming for Problem Solving	Computer Science and Engineering	Computer Science and Engineering	2	2	--	03	50	50	100	3
4	ES	18EC14	Basic Electronics	ECE/E and I/ TC	E and C Engineering	2	2	--	03	50	50	100	3
5	ES	18ME15	Elements of Mechanical Engineering	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	2		03	50	50	100	3
6	BC	18CHL16	Engineering Chemistry Laboratory	Chemistry	Science	--	--	2	03	50	50	100	1
7	ES	18CSL17	Computer Programming Laboratory	Computer Science and Engineering	Computer Science and Engineering	--	--	2	03	50	50	100	1
8	HS	18HS11/ 18HS12	English/ Kannada	Humanities	Humanities	1	--	2	02	50	50	100	1
TOTAL						13	08	06	23	350	350	700	20

II SEMESTER B.E (PHYSICS GROUP)

Sl. No	Course and Course Code		Course Title	Teaching Department	Paper Setting Board	Teaching Hours /Week		Examination					Credits
						Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
						L	T						
1	BC	18MA21	Advanced Calculus and Numerical Methods	Mathematics	Science	3	2	--	03	50	50	100	4
2	BC	18PH22	Engineering Physics	Physics	Science	4	--	--	03	50	50	100	4
3	ES	18EE23	Basic Electrical Engineering	E and E Engineering	E and E Engineering	2	2	--	03	50	50	100	3
4	ES	18CV24	Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	2	2	--	03	50	50	100	3
5	ES	18MEL25	Engineering Graphics and Design	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	--	2	03	50	50	100	3
6	BC	18PHL26	Engineering Physics Laboratory	Physics	Science	--	--	2	03	50	50	100	1
7	ES	18EEL27	Basic Electrical Engineering Laboratory	E and E Engineering	E and E Engineering	--		2	03	50	50	100	1
8	HS	18HS21/ 18HS22	English/ Kannada	Humanities	Humanities	1		2	02	50	50	100	1
TOTAL						13	06	08	23	400	400	800	20

Note: BS: Science Course, ES: Engineering Science, Hu: Humanity and Social Science.

Definition of Credit:

1 hour Lecture (L) per week per semester =1 Credit

2 hour Tutorial (T) per week per semester =1 Credit

2 hour Practical/Laboratory/Drawing (P) per week per semester =1 Credit.

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
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B.E (Civil Engineering)
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III SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical / Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	BC	18MA31	Transform calculus and Special functions	Mathematics	2	2	--	03	50	50	100	3
2	PC	18CV31	Building Materials and Construction	CV	3	---	---	03	50	50	100	3
3	PC	18CV32	Strength of Materials	CV	4	---	---	03	50	50	100	4
4	PC	18CV33	Surveying	CV	4	---	---	03	50	50	100	4
5	PC	18CV34	Fluid Mechanics	CV	4	---	---	03	50	50	100	4
6	PC	18CV35	Applied Engineering Geology	CV	3	---	---	03	50	50	100	3
7	PC	18CVL36	Civil Engg. Material Testing Laboratory	CV	---	---	2	03	50	50	100	1
8	PC	18CVL37	Surveying Practice	CV	---	---	3	03	50	50	100	1
9	HS	18HS31/32	Constitution of India Professional Ethics and Human Rights/ Environmental Science	HS/CV	1	--	--	02	50	50	100	1
10	MC	18HS33	Soft skills (MC)	Humanities	04	-	--	03	50	-	50	0
TOTAL					19	02	05	29	500	450	950	24

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

11	MC	18MAD31	Basic Engg Mathematics - I	Mathematics	02	01	--	03	50		50	0
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Note: BC: Science Course, PC: Professional Core. Hu: Humanities, MC: Mandatory Course.

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IV SEMESTER

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	BC	18MA41	Numerical methods and Probability	Mathematics	2	2	--	03	50	50	100	3
2	PC	18CV41	Water Supply Engineering	CV	3	---	---	03	50	50	100	3
3	PC	18CV42	Analysis of Determinate Structures	CV	4	---	---	03	50	50	100	4
4	PC	18CV43	Hydraulics and Hydraulic Machines	CV	4	---	---	03	50	50	100	4
5	PC	18CV44	Hydrology and Irrigation Engineering	CV	3	---	---	03	50	50	100	3
6	PC	18CV45	Concrete Technology	CV	4	---	---	03	50	50	100	4
7	PC	18CVL46	Computer Aided Building Planning and Drawing	CV	---	1	3	03	50	50	100	1
8	PC	18CVL47	Concrete & Highway materials Lab	CV	---	---	2	03	50	50	100	1
9	HS	18HS41/42	Constitution of India Professional Ethics and Human Rights/ Environmental Science	HS/CV	1	--	--	02	50	50	100	1
10	MC	18HS43	Employability skills (MC)	Humanities	04	-	--	03	50	-	50	0
TOTAL					25	03	05	29	500	450	950	24
Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs												
	MC	18MAD41	Basic Engg Mathematics - II	Mathematics	02	01	--	03	50		50	0

**Note: BC: Science Course, PC: Professional Core. Hu: Humanities, NCMC: Non-Credit Mandatory Course.
 ENV: Environmental Studies, CIP: Constitution of India Professional Ethics and Human Rights**

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V SEMESTER

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P					
1	HS	18HS51/52	M&E / IPR (title as per BOS decision)	Hu	3	--	--	03	50	50	100	3
2	PC	18CV51	Wastewater Treatment and Disposal	CV	3	--	--	03	50	50	100	3
3	PC	18CV52	Design of RCC Structural Elements	CV	4	--	--	03	50	50	100	4
4	PC	18CV53	Analysis of Indeterminate Structures	CV	4	--	--	03	50	50	100	4
5	PC	18CV54	Geotechnical Engineering	CV	2	2	--	03	50	50	100	3
6	PE	18CV55X	Professional Elective - 1	CV	3	--	--	03	50	50	100	3
7	OE	18CV56X	Open Elective - A	CV	3	--	--	03	50	50	100	3
8	PC	18CVL57	Hydraulics and Hydraulic Machinery Laboratory	CV	--	--	2	03	50	50	100	1
9	PC	18CVL58	Computer Aided Design Laboratory	CV	--	--	2	03	50	50	100	1
10	HS	18HS55	Placement Training	Hu	2	--	--	03	50	--	50	PP/NP
TOTAL					25	--	4	30	500	450	950	25

Electives

Course code	Professional Electives - 1	<p>Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department.</p> <p>Selection of an open elective is not allowed provided:</p> <ul style="list-style-type: none"> The candidate has studied the same course during the previous semesters of the programme. The syllabus content of open elective is similar to that of Departmental core courses or professional electives. A similar course, under any category, is prescribed in the higher semesters of the programme. <p>Registration to electives shall be documented under the guidance of Programme Coordinator/Mentor.</p>
18CV551	Transportation Engineering	
18CV552	Theory of Elasticity	
18CV553	Ground Improvement Techniques	
18CV554	Advanced Surveying	
18CV555	Ground Water Hydrology	
OPEN ELECTIVE - A		
18CV561	Air Pollution and Control	
18CV562	Integrated Solid Waste Management	

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VI SEMESTER

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/Drawings	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	HS	18HS61/62	M&E/IPR	Hu	3	--	--	03	50	50	100	3
2	PC	18CV61	Design of Steel Structures	CV	3	2	--	03	50	50	100	4
3	PC	18CV62	Railways, Airport, Tunnel and Harbour Engineering	CV	3	--	--	03	50	50	100	3
4	PC	18CV63	Foundation Engineering	CV	2	2	--	03	50	50	100	3
5	PE	18CV64X	Professional Elective - 2	CV	3	--	--	03	50	50	100	3
6	OE	18CV65X	Open Elective – B	CV	3	--	--	03	50	50	100	3
7	PC	18CVL66	Computer Aided Drawing of RC and Steel structures	CV	--	--	2	03	50	50	100	1
8	PC	18CVL67	Geotechnical Engineering Laboratory	CV	--	--	2	03	50	50	100	1
9	M	18CVM68	Mini-Project					03	50	50	100	2
10	PC	18CVL69	Extensive Survey Project	CV	--	--	2	03	50	50	100	1
11	HS	18HS66	Placement Training	Hu	2	--	--	03	50	--	50	PP/NP
TOTAL					20	2	6	33	550	500	1050	24

Note: PC: Professional Core, PE: Professional Elective, OE: Open Elective, MP: Mini-Project, INT: Internship.

Internship: All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters.

A University examination will be conducted during VIII semester and prescribed credit are added to VIII semester.

Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

Electives

Course code	Professional Electives - 2	Open Elective - B
18CV641	Pre-Stressed Concrete	Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department. Selection of an open elective is not allowed provided,
18CV642	Alternate Building Materials and Technologies	
18CV643	Traffic Engineering	

18CV644	Open Channel Hydraulics	<ul style="list-style-type: none"> • The candidate has studied the same course during the previous semesters of the programme. • The syllabus content of open elective is similar to that of Departmental core courses or professional electives. • A similar course, under any category, is prescribed in the higher semesters of the programme. <p>Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor.</p>
18CV645	Earth and Earth Retaining Structures	
Open Elective - B		
18CV651	Integrated Solid Waste Management	
18CV652	Photogrammetry and Remote Sensing	

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VII SEMESTER

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical / Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	MC	18HS71/72	CMEP / OSHA	IM/CV	2	--	--	03	50	50	100	2
2	PC	18CV71	Design of RC & Steel Structures	CV	4	---	---	03	50	50	100	4
3	PC	18CV72	Estimation and Valuation	CV	4	---	---	03	50	50	100	4
4	PE	18CV73X	Professional Elective - 3	CV	3	---	---	03	50	50	100	3
5	PE	18CV74X	Professional Elective - 4	CV	3	--	--	03	50	50	100	3
6	OE	18CV75X	Open Elective - C	CV	3	--	--	03	50	50	100	3
7	PC	18CVL76	Environmental Engg. Laboratory	CV	---	---	2	03	50	50	100	1
8	PC	18CVL77	Advanced Civil Engg. Laboratory	CV	---	---	2	03	50	50	100	1
8	Project	18CVP78	Project Work Phase - I	CV	--	--	2	03	50	50	100	2
9	INT	18CVI79	Internship	(If not completed after VI semester examinations, it has to be carried out during the intervening vacations of VII and VIII semesters)								--
TOTAL					19	--	6	27	450	450	900	23

Note:

PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
 CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:

All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters. A SEE examination will be conducted during VIII semester and prescribed credits shall be added to VIII semester. Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent SEE examination after satisfy the internship requirements.

Electives		
Course code	Professional Electives - 3	Open Elective - B
18CV731	Pavement Materials and Construction	Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT for open electives) offered by any Department. Selection of an open elective is not allowed provided, ✓ The candidate has studied the same course during the previous semesters of the programme. ✓ The syllabus content of open elective is similar to that of Departmental core courses or professional electives. ✓ A similar course, under any category, is prescribed in the higher semesters of the programme. ✓ Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor.
18CV732	Photogrammetry and Remote Sensing	
18CV733	Environmental Impact Assessment	
18CV734	Design of Bridges	
18CV735	Structural Dynamics	
18CV736	Construction Project Management	
18CV737	Reinforced Earth Structures	

Electives : 4

Course code	Professional Elective
18CV741	Water Resources Engineering
18CV742	Advanced Foundation Design
18CV743	Pavement Design
18CV744	Earthquake Resistant Design of Structures
18CV745	Solid Waste Management
18CV746	Quality Management System in Civil Engineering
18CV747	Hydraulic Structures & Irrigation drawing

Electives : B

Course code	Open Elective - C
18CV751	Ecology and Environmental Impact Assessment
18CV752	Urban Transport Planning
18CV753	Photo Geology and Remote Sensing

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VIII SEMESTER

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination			Credits	
					Theory Lecture	Tutorial	Practical / Drawing	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P					
1	MC	18HS81/82	CMEP / OSHA	IM /CV	2	--	--	03	50	50	100	2
2	Project	18CVP81	Project Work Phase - II	CV	--	--	2	03	50	50	100	10
3	Seminar	18CVS82	Technical Seminar	CV	--	--	2	03	50	--	50	1
4	INT	18CVI83	Internship	(Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters.)			03	50	50	100	2	
TOTAL					02	--	4	12	200	150	350	15

Note:

PC: Professional Core, PE: Professional Elective, OE: Open Elective, INT: Internship, MC: Mandatory Course
 CMEP: Cost Management of Engineering Projects, OSHA: Occupational Safety and Health Administration

Internship:

Those, who have not pursued /completed the internship will be declared as failed and have to complete during subsequent SEE examination after they satisfy the internship requirements.

Total 175 Credit Distributions for all semester B.E. (Civil Engineering) Programme.

Semester	I	II	III	IV	V	VI	VII	VIII	Total Credits
Credits	20	20	24	24	25	24	23	15	175