VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI



Scheme of Teaching and Examination and Syllabus B.E. CIVIL ENGINEERING (Effective from Academic year 2018-19)

General Notes:

- 1. Question Paper Pattern for Theory Courses:
 - The question paper will have TEN questions, Each full question carries 20 marks, There will be two full questions (with a maximum of four subquestions) from each module.Each full question will have sub questions covering all the topicsunder a module.
 - Students will have to answer 5 full questions, selecting one fullquestion from each module.
- 2. The teaching learning process should be as per the Choice Based CreditSystem
- 3. All Civil Engineering Departments should have a "CIVIL ENGINEERINGMUSEUM" with collections like models, charts, material samples, fixtures and fittings etc. which assist effective teaching learning process.
- 4. The teaching learning process may be planned to develop capabilities, competencies and skills required for career development based on coursebeginning and course end surveys.
- 5. Course objectives, course outcomes and RBT levels given under eachcourse in the syllabus are indicative/suggestive. The facultycan set them appropriately according to their lesson/ course plan.
- 6. The course coordinators/teachers/instructors are informed to deliberate in the faculty meeting with module coordinator, program coordinatoralong with the stake holders to develop the respective lesson/ courseplans.
- 7. The department advisory board may make suitable changes to thecourse objectives, course outcomes according to their finalized course plans.
- 8. The faculty should complement the teaching with case studies and fieldvisits wherever required.
- 9. At least one faculty development program to be conducted to complimentteaching learning process by the department in a year

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19)

Programme: CIVIL ENGINEERING

III SEMESTER

III SEMES	SIEK			1	Teaching	Hours /Weel	7		Fyom	ination		
Sl. No		urse and rse Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р					
1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18CV32	Strength of Materials	Civil Engg.	3	2		03	40	60	100	4
3	PCC	18CV33	Fluid Mechanics	Civil Engg.	3	0		03	40	60	100	3
4	PCC	18CV34	Building Materials and Construction	Civil Engg.	3	0		03	40	60		3
5	PCC	18CV35	Basic Surveying	Civil Engg.	3	0		03	40	60		3
6	PCC	18CV36	Engineering Geology	Geology	3	0		03	40	60	100	3
7	PCC	18CVL37	Computer Aided Building Planning & Drawing	Civil Engg.		2	2	03	40	60		2
8	PCC	18CVL38	Building Materials Testing Laboratory	Civil Engg.		2	2	03	40	60	100	2
		18KVK39 Vyavaharika Kannada (Kannada for communication)/			2			100				
9	HSMC	18KAK39	Aadalitha Kannada (Kannada for Administration)	HSMC		2			100		100 100 100 100 100 100 100 900	1
-	1151110		OR	lisiire								-
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	 Examinatio	 1 is by obi	02 ective type	40 questions	60		
					17	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					18	10		26	360	540		
Note: BSC:	Basic Scien	ce. PCC: Profes	ssional Core, HSMC: Humanity and Social Science, NCMC: Non-c	redit mandatory	course.							
			ada for communication) is for non-Kannada speaking, reading and			39 Aadalith	a Kannad	a (Kannada	for Admi	nistration)	is for stude	nts who
speak, read a				C								
			Course prescribed to lateral entry Diploma holders a	admitted to III	semester	of Engine	ering pr	ograms				
10	NCMC	18MATDIP3	Additional Mathematics - I	Mathematics	02	01		03	40	60	100	0
			Additional Mathematics I and II prescribed for III and IV semester									
			bective semesters to complete all the formalities of the course and a									
secure the m	ninimum 40	% of the presci	ribed CIE marks, he/she shall be deemed to have secured F grade. I	n such a case, th	e students l	have to fulfi	ll the requ	irements du	iring subs	equent ser	nester/s to a	ppear for

SEE.

(b)These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

Courses prescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs

Lateral entrant students from B.Sc. Stream, shall clear the non-credit courses Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTE Activity Points to be earned by students admitted to BE/B. Tech/B. Plan day college programme (For more details refer to Chapter 6,AICTE Activity Point Programme, Model Internship Guidelines):

Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other Universities to 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 can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

	rommo	CIVIL ENGIN	NFFDINC									
U	EMESTI											
					Teach	ing Hours /\	Veek		Exam	ination		Т
SI. No	-	Course and Course code Course Title	T eaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
					L	Т	Р				-	
1	BSC	18MAT41	Complex Analysis, Probability And Statistical Methods	Mathematics	2	2		03	40	60	100	3
2	PCC	18CV42	Analysis of Determinate Structures	Civil Engg.	3	2		03	40	60	100	4
3	PCC	18CV43	Applied Hydraulics	Civil Engg.	3	0		03	40	60	100	3
4	PCC	18CV44	Concrete Technology	Civil Engg.	3	0		03	40	60	100	3
5	PCC	18CV45	Advanced Surveying	Civil Engg.	3	0		03	40	60	100	3
6	PCC	18CV46	Water Supply & Treatment Engineering	Civil Engg.	3	0		03	40	60	100	3
7	PCC	18CVL47	Engineering Geology Laboratory	Geology		2	2	03	40	60	100	2
8	PCC	18CVL48	Fluid Mechanics and Hydraulic Machines Laboratory	Civil Engg.		2	2	03	40	60	100	2
9		18KVK39/49	Vyavaharika Kannada (Kannada for Communication)/									
			OR	HSMC		2			100			
	HSMC	18KAK39/49	Aadalitha Kannada (Kannada for Administration)								100	1
	nome		OR								100	1
		18CPC39/49	PC39/49 Constitution of India, Professional Ethics and Cyber Law		1	1		02	40	60		
		1001 037/47	Constitution of mula, i foressional Eules and Cyber Eaw			Examinatio	n is by obj					_
				TOTAL	17	08		24	420	480		
				-	OR	OR	04	OR	OR	OR	900	24
					18	10		26	360	540		<u> </u>
Joto	BSC · Basi	Science PCC P	rofessional Core, HSMC: Humanity and Social Science, NCMC	. Non credit mandat	ory course							
			(Kannada for communication) is for non-Kannada speaking, re			18KAK39/	49Aadalith	a Kannada	(Kannada	for Admin	istration) i	is fo
		ak, read and write		adding and writing st	udents and	1010111057	-77 Iuduittii	a Rumada	(Ituiniada	101 / Kullin	istration) i	5 10
		,	Course prescribed to lateral entry Diploma holde	rs admitted to H	I semester	of Engin	eering pr	ograms				
10	NCMC	18MATDIP41	Additional Mathematics - II	Mathematics	02	01		03	40	60	100	(

(b)These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

Courses prescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs

Lateral entrant students from B.Sc. Stream, shall clear the non-credit courses Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19)

Programme: CIVIL ENGINEERING

					Teachin	g Hours	/Week	Examination					
51. No	Course and Course code		Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
					L	Т	Р	ſ		61			
1	HSMC	18CV51	Construction Management & Entrepreneurship	Civil Engg.	2	2		03	40	60	100	3	
2	PCC	18CV52	Analysis of Indeterminate Structures	Civil Engg.	3	2		03	40	60	100	4	
3	PCC	18CV53	Design of RC Structural Elements	Civil Engg.	3	2		03	40	60	100	4	
4	PCC	18CV54	Basic Geotechnical Engineering	Civil Engg.	3			03	40	60	100	3	
5	PCC	18CV55	Municipal Wastewater Engineering	Civil Engg.	3			03	40	60	100	3	
6	PCC	18CV56	Highway Engineering	Civil Engg.	3			03	40	60	100	3	
7	PCC	18CVL57	Surveying Practice	Civil Engg.		2	2	03	40	60	100	2	
8	PCC	18CVL58	Concrete and Highway Materials Laboratory	Civil Engg.		2	2	03	40	60	100	2	
				Civil/Environmental									
9	HSMC	18CIV59	Environmental Studies	[Paper setting Board:	1			02	40	60	100	1	
				Civil Engineering]									
				TOTAL	18	10	04	26	360	540	900	25	

			VISVESVARAYA TECHN Scheme of Teach					VI				
			Outcome Based Education(OB (Effective fron	E) and Choice	Based (Credit S		CBCS)				
Progra	amme: CIV	IL ENGIN			v	/						
0	MESTER											
					Teac	Teaching Hours /Week			Exami	nation		
Sl. No		rse and rse code	Course Title	Teaching Department	Theory Lecture Tutorial		Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р		0	01	T	
1	PCC	18CV61	Design of Steel Structural Elements	Civil Engg.	3	2		03	40	60	100	4
2	PCC	18CV62	Applied Geotechnical Engineering	Civil Engg.	3	2		03	40	60	100	4
3	PCC	18CV63	Hydrology and Irrigation Engineering	Civil Engg.	3	2		03	40	60	100	4
4	PEC	18CV64X	Professional Elective -1	Civil Engg.	3			03	40	60	100	3
5	OEC	18CV65X	Open Elective -A	Civil Engg.	3			03	40	60	100	3
6	PCC	18CVL66	Software Application Laboratory	Civil Engg.		2	2	03	40	60	100	2
7	PCC	18CVL67	Environmental Engineering Laboratory	Civil Engg.		2	2	03	40	60	100	2
8	EP	18CVEP68	Extensive Survey project	Civil Engg.		2	2	03	40	60	100	2
9	Internship		Internship	To be carried of	0		1	1	1			
				TOTAL	15	12	06	24	320	480	800	24
	~~ ~ ~											
Note: P	CC: Professio	onal core, PEC	: Professional Elective, OE: Open Elective,	MP: Mini-project	•							
			n		. 1							
Car	rse code		PI	rofessional Elective	e -1							
	18CV64X											
	CV641	Matrix Metho	od of Structural Analysis									
	CV642	Solid Waste N										
	CV643		lding Materials									
	CV644		ovement Techniques									
	CV645		bours, Tunnelling & Airports									
				Open Elective -A								
	rse code 18CV65X											
	CV651	Remote Sensi	ing & GIS									
	CV652	Traffic Engin										
18	CV032	Traine Engin	leening									

18CV654 Sustainability Concepts in Civil Engineering

Students can select any one of the open electives offered by other Departments expect those that are offered by the parent Department (Please refer to the list of open electives under 18XX65X).

Selection of an open elective shall not be allowed if,

- 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 the 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/ Advisor/Mentor.

Internship: All the students admitted to III year of BE/B. Tech shall have to undergo mandatory internship of 4 weeks during the vacation of VI and VII semesters and /or VII and VIII semesters. A University examination shall be conducted during VIII semester and the prescribed credit shall be included in VIII semester. 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.

			VISVESVARAYA TECHN Scheme of Teachi Outcome Based Education(OBE	ing and Exam	nination	2018 -	19					
			(Effective from	,			<i></i>	(0200)				
Progr	amme: CIV	IL ENGIN			<u>j • « </u>							
	EMESTER											
				Teachi	ng Hours /	Week		Exa	mination			
Sl. No		Course and Course code Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
					L	Т	Р		0	0 1	E	
1	PCC	18CV71	Quality Surveying and Contract Management	Civil Engg.	3			03	40	60	100	3
2	PCC	18CV72	Design of RCC and Steel Structures	Civil Engg.	3			03	40	60	100	3
3	PEC	18CV73X	Professional Elective - 2	Civil Engg.	3			03	40	60	100	3
4	PEC	18CV74X	Professional Elective - 3	Civil Engg.	3			03	40	60	100	3
5	OEC	18CV75X	Open Elective -B	Civil Engg.	3			03	40	60	100	3
6	PCC	18CVL76	Computer Aided Detailing of Structures	Civil Engg.		2	2	03	40	60	100	2
7	PCC	18CVL77	Geotechnical Engineering Laboratory	Civil Engg.		2	2	03	40	60	100	2
8	Project	18CVP78	Project Work Phase - 1				2		100		100	1
9	Internship		Internship	(If not complete vacation of VII			on of VI	and VII se	mesters, i	t shall be	carried out d	uring the
				TOTAL	15	04	06	21	380	420	00	20
Note: Po	CC: Professiona	al core, PEC:	Professional Elective.									
0	1 1 10	CI FOX		fessional Elective	e - 2							
18CV73	code under 18	CV/3X	Course Title Theory of Elasticity									
18CV73 18CV73			Air Pollution and Control									
18CV733 Pavement Materials & Construction												
18CV734 Ground Water Hydraulics			Ground Water Hydraulics									
18CV73	5		Masonry Structures									
				fessional Elective	s - 3							
	code under 18		Course Title									
18CV74			Earthquake Engineering									
18CV74			Design Concepts of Building Services									
18CV74	-3		Reinforced Earth Structures									

18CV744	Design of Hydraulic Structures					
18CV745	Urban Transport Planning					
Open Elective -B						
Course code under 18CV75X	Course Title					
18CV751	Finite Element Method					
18CV752	Numerical Methods and Applications					
18CV753	Environmental Protection and Management					

Students can select any one of the open electives offered by other Departments expect those that are offered by the parent Department (Please refer to the list of open electives under 18XX75X).

Selection of an open elective shall not be allowed if,

- 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 the 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/ Advisor/Mentor.

Project work:

Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary project can be assigned to an individual student or to a group having not more than 4 students. In extraordinary cases, like the funded projects requiring students from different disciplines, the project student strength can be 5 or 6.

CIE procedure for Project Work Phase - 1:

(i) 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 phase -1, shall be based on the evaluation of the project work phase -1 Report (covering Literature Survey, Problem identification, Objectives and Methodology), 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.

(ii) 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 phase -1, shall be based on the evaluation of project work phase -1 Report (covering Literature Survey, Problem identification, Objectives and Methodology), 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.

Internship: All the students admitted to III year of BE/B. Tech shall have to undergo mandatory internship of 4 weeks during the vacation of VI and VII semesters and /or VII and VIII semesters. A University examination shall be conducted during VIII semester and the prescribed credit shall be included in VIII semester. 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.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2018 – 19
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2018 – 19)

Programme: CIVIL ENGINEERING

					Teachi	ng Hours	s /Week		Ex	amination		
Sl. No		urse and ırse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
		-			L	Т	Р					
1	PCC	18CV81	Design of Pre-stressed Concrete	Civil Engg.	3			03	40	60	100	3
2	PEC	18CV82X	Professional Elective - 4	Civil Engg.	3			03	40	60	100	3
3	Project	18CVP83	Project Work Phase - 2	Civil Engg.			16	03	40	60	100	8
4	Seminar	18CVS84	Technical Seminar	Civil Engg.			2	03	100		100	1
5	Internship	18CVI85	Internship	Completed during the vacation/s of VI and VII semesters and /or VII and VIII semesters.) 03				03	40	60	100	3
	•	÷	·	TOTAL	06		18	15	260	240	500	18

Note: PCC: Professional Core, PEC: Professional Elective.

Professional Electives - 4						
Course code under 18CV82X	Course Title					
18CV821	Bridge Engineering					
18CV822	Prefabricated Structures					
18CV823	Advanced Foundation Engineering					
18CV824	Rehabilitation & Retrofitting					
18CV825	Pavement Design					

Project Work

CIE procedure for Project Work Phase - 2:

(i) 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 phase -2, shall be based on the evaluation of project work phase -2 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.

(ii) 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 phase -2, shall be based on the evaluation of project work phase -2 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 for Project Work Phase - 2:

(i) Single discipline: Contribution to the project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted at the department.
 (ii) Interdisciplinary: Contribution to the project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted separately at the departments to which the student/s belongs to.

Internship: Those, who have not pursued /completed the internship, shall be declared as fail and have to complete during subsequent University examination after satisfying the internship requirements.

AICTE activity Points: In case students fail to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the award of degree only after the release of the Eighth semester Grade Card.

Activity points of the students who have earned the prescribed AICTE activity Points shall be sent the University along with the CIE marks of 8th semester. In case of students who have not satisfied the AICTE activity Points at the end of eighth semester, the column under activity Points shall be marked NSAP (Not Satisfied Activity Points).