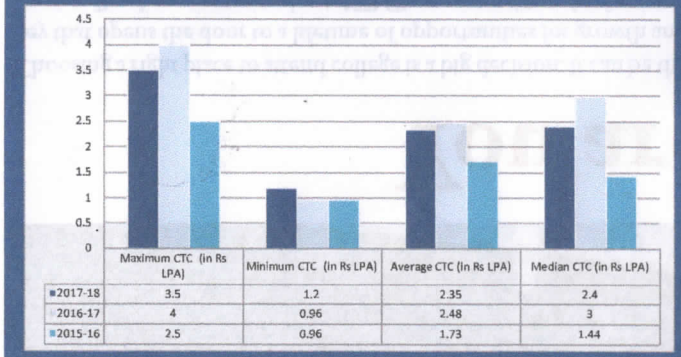
Brochure/prospectus, and handbook/syllabus book highlighting programs and courses offered for each year for all the 5 assessment years, attested by Principal.

Placement & Cerfitification Courses

The definition of employment is changing all over the world. The reasons are many. Firstly, the fast-changing technology of producing goods means jobs are getting continuously redefined. Secondly, the intense pressure of competition from globalisation means jobs are vanishing. Third, forces of automation and three-dimensional printing make it possible to produce customised and complex products in small batches. Fourthly, the fast changing nature of consumer preferences calls for changes in job description. So, producers have to maintain flexibility.

Whatever be the reasons, Engineers need to be in continuous learning mode and possibly change lobs" several times in their working lives. This makes us to focus us new skills on a continuous basis. We have a strange situation that Engineers can't find enough jobs, and companies can't find enough qualified Engineers. It reflects a mismatch in skills and workforce. We have simultaneous existence of skills andjobs shortage.

In this regards ATME College of Engineers comes up with a unique idea of imparting industry oriented skill sets along with regular syllabus. ATME has entered into MOUs to training our students. Certification course of ranging from 16-52 weeks are offered to enhance the employability of our Engineers. This value added service will be of great help to our Engineers.



	Maximum CTC (in Rs LPA)	Minimum CTC (in Rs LPA)	Average CTC (in Rs LPA)	Median CTC (in Rs LPA)
2017-18	3.5	1.2	2.35	2.4
2016-17	4	0.96	2.48	3
2015-16	2.5	0.96	1.73	1.44

MOU's for certification courses

GTTC | CADD Centre | RTTC | Skillfinity | CISCO | DELL EMC | Prolific Systems and Technologies Pvt Ltd | Vivarthan Technologies (SCADA & PLC) | RMJ Automation Solutions & Training Pvt Ltd

Courses Offered

Under Graduate Courses

Civil Engineering | Computer Science Engineering | Electrical & Electronics Engineering | Electronics & Communication Engineering | Mechanical Engineering

VIDYA ASARE

Free ship/Scholarship Scheme

The scheme aims to provide Freeship / Scholarship to 50 students getting admission at I year level, in appreciation of their outstanding achievements in Academic, co-curricular, sports and extra-curricular activities.

Sl. No.	CET Ranking or PCM %	CET Fee Concession*	College Fee Concession**	Transportation Fee Concession**	Remarks
1	1 to 5000 or >95% in PCM	Free	Free	Free	For all 4 Years
2	5001 to 10000 or >90% in PCM	50%	50%	50%	For all 4 Years
3	10001 to 20000 or >85% in PCM	25%	25%	25%	For all 4 Years
4	20001 to 25000 or >80% in PCM	25%	25%	25%	For First 2 Years
5	25001 to 35000	25%	25%	25%	First Year only

NOTE

* Tuition Fee Concession is extended only for Direct Admission under Management Quota

** College & Transportation Fee Concession is extended for all (CET, COMED-K & Management) Quota Seats

College Office
13th Kilometer
Mysore - Kanakapura - Bangalore Road
Mysore - 570028
P: +91-821-2593335
F: +91-821-2593328

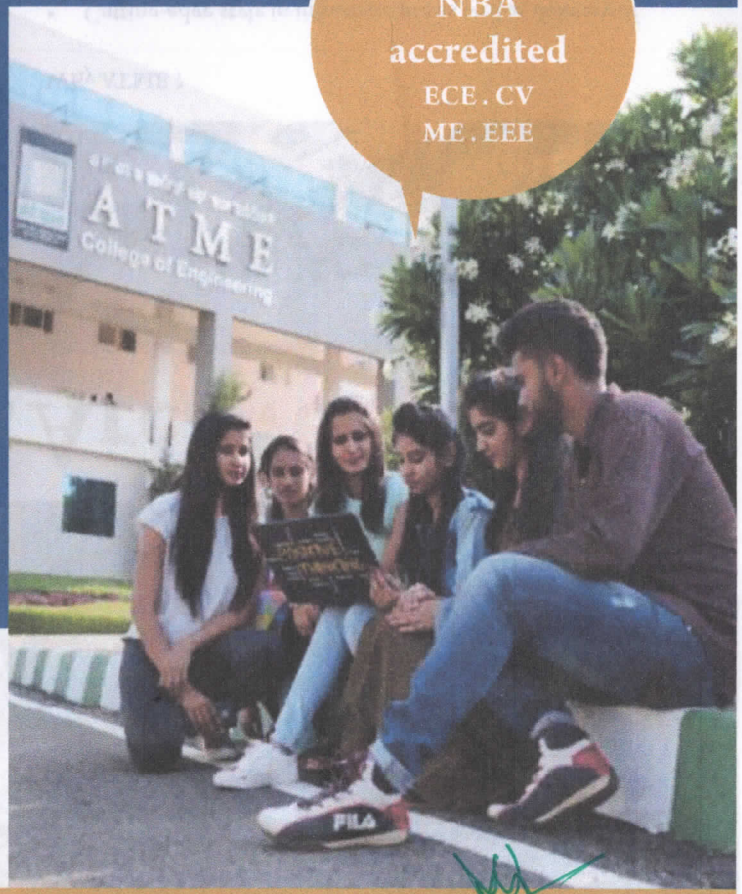
Trust Office
#2904(CH67), II Floor
Kantharaj Urs Road
Saraswathipuram
Mysore - 570 009
P: +91-821-4191551
F: +91-821-4191553

Email : Info@atme.in Web : www.atme.in

ATME College of Engineering CET E205 Comed-K E152

Your Career Path Begins here

The following programs are now NBA accredited
ECE . CV
ME . EEE



Dreamer, Innovator, Researcher, Problem Solver, Inventor, Creator- All are terms that aptly describe the Characteristics of "ENGINEER"

For admissions contact

Secretary	AAO
+91-94482-85651	+91-94482-85644
Principal	PRO

ATME College of Engineering

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ATME College of Engineering
13th KM Mysuru-Kanakapura Ro
Mallasandra, Mysuru-570 028

Facilities

. Inspiring Faculty . Spacious Classrooms . Digital Classrooms . Well Stocked Central Library & Digital Library . State-of-the-art Laboratories . Central Computing Center . High Speed Browsing Center . Campus Automation . Cluster of Well Equipped Seminar Halls . Hygienic Cafeteria . Medical Assistance . Convenience Shop . Transportation Facility . Secure Environment . 24 hrs Power Backup . Separate common area for Boys and Girls . 450 Seater Auditorium . Alumni Association . Digital Classrooms . Research Centre . Software Development Cell . E Cell & Placement Cell centre for Career Guidance

You are One of a Kind, So Are We

Choosing a right place to attend college is a big decision. It can be the key that opens the door to a lifetime of opportunities for growth and service. By choosing to study at ATME you are taking the first step towards entering into a professional career. You can be onfident that your engineering degree at ATME will be an investment into your future - both financially and intellectually. At ATME, education is not entirely academic, it extends beyond classrooms, laboratories and libraries. to industry environments, seminars, workshops and live projects, hence enhancing your talents and giving you essential knowledge related to your dream industry.

The people behind the institute being technocrats & academicians make sure that ATME'ians have a distinct edge over others when they step into the industry. Also the career guidance cell at the institute has an incubation centre which trains students in personality development, entrepreneurship development and encourages students with special talents to realize their dreams and ambitions.

The career guidance cell at the institute has an incubation centre which trains students in various facets to help in holistic growth of students and encourages students with special talents to realize their dreams and ambitions. These trainings are started from the very first semester and spread over the whole 4 year duration of the course. The training and placement cell in the college has done a commendable job setting up new benchmarks of placements for pvt engineering colleges in Mysore. More than 85% of eligible students of the very first outgoing batch are placed in national and multinational companies.

We at ATME invite you to visit our magnificent campus, inspect the state-of-art facilities, meet & discuss with students & faculty to discover the exciting opportunities that an engineering curriculum & career can offer and find out why we at ATME are called "Pacesetters for the future society".

Why ATME ?

- Cutting-edge style in infrastructure as well as delivery of education
- Current-day environment for professional development to global standards
- Pervasive culture of excellence
- Care and support for students' future careers
- Best student award
- Numerous Sports achievements
- Certification Courses from renowned industries for skill development
- Digital Classrooms for effective learning
- Promoted by the best names in education, technology and social service
- ISO Certified Engineering College

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Mahadevapura, Mysuru-570 028

VISION

"To become an outstanding Technological University at the cutting edge of Science and Technology that produces world class Knowledge-delivery, Research, Extension and Leadership in Technology Innovation for Industry and Society".

MISSION

"To plan the development of Technical Education, to establish value and need-based Education and Training in Engineering and Technology, with a view to generate qualified and competent manpower, responsive to Technological and societal needs".

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belagavi – 590 018, Karnataka
Phone: 0831 -2498100/2405468 Fax: 0831- 2405467
E – Mail: registrar@vtu.ac.in, Web: www.vtu.ac.in

Syllabus Copy of 2018-19 Scheme

REGULATIONS GOVERNING THE DEGREE OF BACHELOR OF ENGINEERING / TECHNOLOGY (BE/B.Tech) UNDER OUTCOME BASED EDUCATION (OBE) AND CHOICE BASED CREDIT SYSTEM (CBCS)

Effective from the academic year 2018 – 19

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Mellahalli Mysuru-570 028

AUGUST - 2018

18OB 6.2 (continued)

(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year

Semester (Odd:1,Even:II)	Course Number	Credits	Grade	Grade Points	Credit Points	SGPA, CGPA
I	XX101	5:0:0	B	8	40	
I	XX102	3:2:0	Absent(F)	-	--	
I	XX103	3:0:0	A	9	27	*SGPA* = 117/20 =5.85
I	XX104	0:1:1	F	0	00	
I	XX105	4:1:0	D	6	30	
I	XX106	5:0:0	E	4	20	
Total		20 (18*)	Total		117	
II	XX107	3:1:1	C	7	35	
II	XX108	4:0:0	B	8	32	*SGPA* = 157/25 =6.28
II	XX109	3:0:0	D	6	18	
II	XX110	4:1:0	E	4	20	
II	XX111	2:1:1	A	9	36	
II	XX112	2:0:0	F	0	00	*CGPA* =274/41 =6.68
II	XX113	0:2:0	B	8	16	
Total		25 (23*)	Total		157	

If the Student secures letter grades as detailed below after reappearance to SEE, then the SGPA and CGPA shall be calculated as indicated below.

I	XX102	3:2:0	D	6	30	*SGPA* = 56/9 =6.22
I	XX104	0:1:1	C	7	14	
II	XX112	2:0:0	D	6	12	*CGPA* =330/50 =6.60
Total		9	Total		56	

(b) CGPA Calculation of the Programme: An Illustrative Example

Semester	I	II	III	IV	V	VI	VII	VIII
Credits of the semester	20	20	24	24	25	24	20	18
SGPA	7.00	8.50	9.20	6.86	8.18	7.73	8.68	9.40

$$CGPA = \frac{(20\times7.00+20\times8.50+24\times9.20+24\times6.86+25\times8.18+24\times7.73+20\times8.68+18\times9.40)}{175} = 8.16$$

18OB 6.3 **Grade Card:** Based on the secured letter grades, grade points, SGPA and CGPA, a grade card for each semester and a consolidated grade card indicating the performance in all semesters shall be issued.

18OB 7.0 Conversions of CGPA into Percentage of marks and Class Equivalence

18OB 7.1 **Conversion Formula for the conversion of CGPA into percentage is given below.**

Percentage of marks secured, "P = [CGPA Earned - 0.75] × 10"
Illustration for a CGPA of 8.20:

P = [CGPA Earned 8.20 - 0.75]× 10 = 74.5 %

18OB 7.2 **Class Equivalence:**

Subsequent to the conversion of final CGPA, after successful completion of the Programme, into percentage of marks (P), a graduating student is reckoned to have passed in

(i) First Class with Distinction (FCD) if P ≥ 70%
(ii) First Class (FC) if P ≥ 60% but <70% and
(iii) Second Class (SC) if P < 60%.

18OB 8.0 Continuous Internal Evaluation, Semester End Evaluation and minimum standards

18OB 8.1 **Continuous Internal Evaluation Marks:**

(a) Except for Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration), Technical seminar and Project work phase -1, the CIE marks for all credit Courses, shall be 40.

(b) Minimum CIE marks for all theory Courses shall be 40 % of the marks prescribed for Continuous Internal Evaluation i.e., 16 marks.

(c) Minimum CIE marks for Practical/ Mini-project / Internship/ Technical Seminar/ Project work – Phase 2 shall be 50 % of the maximum marks i.e., 20 marks.

(d) The CIE marks for Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration), Technical seminar and Project work phase -1 shall be 100.

(e) Minimum CIE marks for Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration) shall be 40 % of the marks prescribed for Continuous Internal Evaluation i.e., 40 marks.

(f) Minimum CIE marks for Project work – Phase 1 and Technical seminar shall be 50 % of the maximum marks i.e., 50 marks.

(g) Minimum CIE marks for Additional Mathematics I and II, and the courses (Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering) to be completed by B.Sc. graduates under lateral entry shall be 40 % of the marks prescribed for Continuous Internal Evaluation i.e., 16 marks.

18 OB 8.2 **Continuous Internal Evaluation Procedure:** [To be read along with 18 OB 8.1and 8.3]

(a) Theory Courses :

(i) CIE Marks in each theory Course [including "Technical English I and II", "Constitution of India, Professional Ethics and Human Rights", "Environmental Studies", "Additional Mathematics I and II", and the courses (Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering) to be completed by B.Sc. graduates under lateral entry] shall be the sum of marks prescribed for tests and assignments. Marks prescribed for tests shall be 30 and that for assignments 10.

(ii) The CIE marks awarded for tests in the theory Course/s shall be based on three tests generally conducted at the end of fifth, tenth and fifteenth week of each semester. Each test shall be conducted for a maximum of 50 marks and the final test marks shall be the average of three tests, proportionately reduced to a maximum of 30 marks.

(iii) The remaining 10 marks shall be awarded based on the evaluation of assignments/unit tests/written quizzes that support to cover both lower and higher order thinking skills as per Bloom's Revised Taxonomy and Course/programme outcomes.

(iv) Final marks awarded shall be the sum of 18OB 8.2 (a) (ii) and (iii) for a maximum of 40 marks.

(v) The candidates shall write the tests, assignments/unit-tests/ written quizzes in Blue Books which shall be preserved by the Principal/ Head of the Department for at least six months after the announcement of University results and shall be made available for verification at the direction of the Registrar (Evaluation).

(b) Drawing/Field work Courses :

(i) The CIE marks awarded for I year Engineering Graphics Course shall be based on

(a) Class work for 24 marks (sketching and Computer Aided Engineering Drawing).

(b) Two Tests conducted in the same pattern as that of SEE for 16 marks (The marks secured Can be taken as best of the two tests).

(ii) The CIE marks awarded for higher semester Drawings/ Design Drawings offered by various branches shall be based on the evaluation of the sheets and one test in the ratio 60:40.

18OB 8.2 (Continued)

(iii) The CIE marks awarded for field work (like Surveying Practice) shall be based on the evaluation of the associated field work and one test in the ratio 60:40.

(c) Practical Courses :

The CIE marks awarded in case of Practical, shall be based on the weekly evaluation of laboratory journals/ reports after the conduction of every experiment and one practical test in the ratio 60:40.

(d) Internship :

The CIE marks awarded for internship, shall be based on the evaluation of Internship Report, Presentation skill and Question and Answer session in the ratio 50:25:25.

(e) Technical Seminar :

The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session in the ratio 50:25:25.

(f) Mini - Project :

The CIE marks awarded for Mini - Project, shall be based on the evaluation of Mini - Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.The marks awarded for Mini - Project report shall be the same for all the batch mates.

(g) Main Project Work :

(i) Project Work Phase – 1

The CIE marks awarded for project work phase -1, shall be based on the evaluation of project work phase -1 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) Project Work Phase - 2

The CIE marks awarded for 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.

(h) Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration)

(i) CIE Marks in Vyavaharika Kannada (Kannada for communication)/Aadalitha Kannada (Kannada for Administration) shall be the sum of marks prescribed for tests and assignments. Marks prescribed for tests shall be 75 and that for assignments be 25.

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)

I SEMESTER B.E./B.Tech (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	P					
1	BSC	18MAT11	Calculus and Linear Algebra	Mathematics	Maths	3	2	--	03	40	60	100	4
2	BSC	18PHY12	Engineering Physics	Physics	Physics	3	2	--	03	40	60	100	4
3	ESC	18ELE13	Basic Electrical Engineering	E and E Engineering	E and E Engineering	2	2	--	03	40	60	100	3
4	ESC	18CIV14	Elements of Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	2	2	--	03	40	60	100	3
5	ESC	18EGDL15	Engineering Graphics	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	--	2	03	40	60	100	3
6	BSC	18PHYL16	Engineering Physics Laboratory	Physics	Physics	--	--	2	03	40	60	100	1
7	ESC	18ELEL17	Basic Electrical Engineering Laboratory	E and E Engineering	E and E Engineering	--	--	2	03	40	60	100	1
8	HSMC	18EGH18	Technical English–I	Humanities	Humanities	--	2	--	03	40	60	100	1
					TOTAL	12	10	06	24	320	480	800	20

Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.

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.

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)

I SEMESTER B.E./B.Tech (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	P					
1	BSC	18MAT11	Calculus and Linear Algebra	Mathematics	Mathematics	3	2	--	03	40	60	100	4
2	BSC	18CHE12	Engineering Chemistry	Chemistry	Chemistry	3	2	--	03	40	60	100	4
3	ESC	18CPS13	C Programming for Problem Solving	Computer Science and Engineering	Computer Science and Engineering	2	2	--	03	40	60	100	3
4	ESC	18ELN14	Basic Electronics	ECE/E and I/ TC	E and C Engineering	2	2	--	03	40	60	100	3
5	ESC	18ME15	Elements of Mechanical Engineering	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	2	--	03	40	60	100	3
6	BSC	18CHEL16	Engineering Chemistry Laboratory	Chemistry	Chemistry	--	--	2	03	40	60	100	1
7	ESC	18CPL17	C Programming Laboratory	Computer Science and Engineering	Computer Science and Engineering	--	--	2	03	40	60	100	1
8	HSMC	18EGH18	Technical English– I	Humanities	Humanities	--	2	--	03	40	60	100	1
					TOTAL	12	12	04	24	320	480	800	20

Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.

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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)

II SEMESTER B.E./B.Tech (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	P					
1	BSC	18MAT21	Advanced Calculus and Numerical Methods	Mathematics	Mathematics	3	2	--	03	40	60	100	4
2	BSC	18PHY22	Engineering Physics	Physics	Physics	3	2	--	03	40	60	100	4
3	ESC	18ELE23	Basic Electrical Engineering	E and E Engineering	E and E Engineering	2	2	--	03	40	60	100	3
4	ESC	18CIV24	Elements of Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	2	2	--	03	40	60	100	3
5	ESC	18EGDL25	Engineering Graphics	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	--	2	03	40	60	100	3
6	BSC	18PHYL26	Engineering Physics Laboratory	Physics	Physics	--	--	2	03	40	60	100	1
7	ESC	18ELEL27	Basic Electrical Engineering Laboratory	E and E Engineering	E and E Engineering	--	--	2	03	40	60	100	1
8	HSMC	18EGH28	Technical English– II	Humanities	Humanities	--	2	--	03	40	60	100	1
					TOTAL	**12**	**10**	**06**	**24**	**320**	**480**	**800**	**20**

Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.

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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)

II SEMESTER B.E./B.Tech (CHEMISTRY GROUP)

Sl. No	Course and Course Code		Course Title	Teaching Department	Paper Setting Board	Teaching Hours /Week			Examination				Credits
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						L	T	P					
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4	ESC	18ELN24	Basic Electronics	ECE/E and I/ TC	E and C Engineering	2	2	--	03	40	60	100	3
5	ESC	18ME25	Elements of Mechanical Engineering	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	2	--	03	40	60	100	3
6	BSC	18CHEL26	Engineering Chemistry Laboratory	Chemistry	Chemistry	--	--	2	03	40	60	100	1
7	ESC	18CPL27	C Programming Laboratory	Computer Science and Engineering	Computer Science and Engineering	--	--	2	03	40	60	100	1
8	HSMC	18EGH28	Technical English– II	Humanities	Humanities	--	2	--	03	40	60	100	1
					TOTAL	**12**	**12**	**04**	**24**	**320**	**480**	**800**	**20**

Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.

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1 hour Lecture (L) per week per semester =1 Credit
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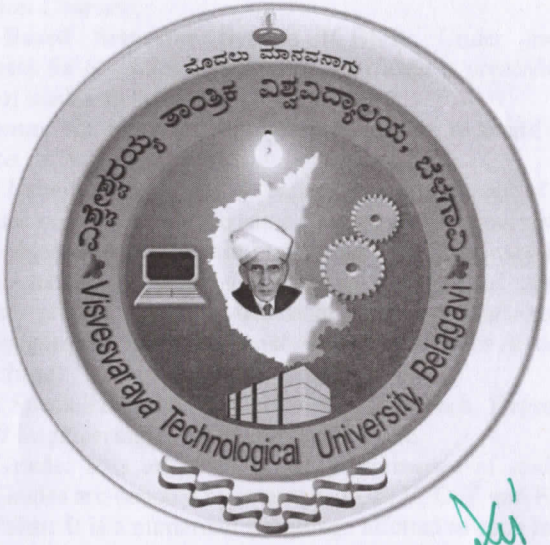
Mellahalli Mysuru-570 028

Syllabus of I & II Semesters B.E./B.Tech.

Common to all Engineering Branches

(with effect from 2015-16)



Visvesvaraya Technological University, Belgavi

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ

Web: www.vtu.ac.in

15OB 10.2 Project work at 8th semester shall be completed batch wise, each batch consisting of minimum of two students and maximum four students.

15OB 10.3 Viva-voce examination in project work shall be conducted batch-wise.

15OB 11 COMPUTATION OF SGPA AND CGPA

i. The VTU adopts absolute grading system wherein the marks are converted to grades, and every semester results will be declared with semester grade point average (SGPA) and Cumulative Grade Point Average (CGPA). The CGPA will be calculated every semester, except the first semester.

ii. The grading system is with the following letter grades as given below:

Grades and Grade Points

Level	Out-standing	Excel lent	Very Good	Good	Above Average	Average	Poor	Fail
Letter Grade	O	S	A	B	C	D	E	F
Grade Points	10	9	8	7	6	5	4	00

iii. A student obtaining Grade "F" shall be considered failed and will be required to reappear in the examination.

Such students after passing the failed subject in subsequent examination/s will be awarded with "E" grade irrespective of marks he/she scores in the subsequent examination/s.

Number of attempts taken to clear a subject/s shall be shown in the transcripts.

Grade Points Scale

Computation of SGPA and CGPA

Level	Out-standing	Excellent	Very Good	Good	Above Average	Average	Poor	Fail
Letter Grade	O	S	A	B	C	D	E	F
Grade Points	10	9	8	7	6	5	4	00
Score (Marks) Range (%)	≥ 90	<90 ≥ 80	< 80 ≥70	< 70 ≥60	< 60 ≥50	< 50 ≥45	<45 ≥40	< 40

The following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

$$\textbf{SGPA (Si)} = \sum(Ci \times Gi) / \sum Ci$$

where Ci is the number of credits of the i^{th} course and Gi is the grade point scored by the student in the i^{th} course.

ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$$\textbf{CGPA} = \sum(Ci \times Si) / \sum Ci$$

where Si is the SGPA of the i^{th} semester and Ci is the total number of credits in that semester.

iii. The SGPA and CGPA shall be rounded off to 2 decimal places and reported in the transcripts.

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Illustration for Computation of SGPA and CGPA

Computation of SGPA

Illustration No.1

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	4	A	8	4x8 = 32
Course 2	4	C	6	4x6 = 24
Course 3	4	B	7	4x7 = 28
Course 4	3	O	10	3x10= 30
Course 5	3	D	4	3x4 = 12
Course 6	3	C	6	3x6 = 18
Course 7	2	S	9	2x9 = 18
Course 8	2	C	6	2x6 = 12
	25			**174**

Thus, **SGPA= 174/25=6.96**

Illustration No.2

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	4	A	8	4x8 = 32
Course 2	4	C	6	4x6 = 24
Course 3	4	B	7	4x7 = 28
Course 4	3	O	10	3x10= 30
Course 5	3	F	0	3x0 = 00
Course 6	3	C	6	3x6 = 18
Course 7	2	S	9	2x9 = 18
Course 8	2	C	6	2x6 = 12
	25			**162**

Thus, **SGPA= 162/25=6.48**

Illustration No.2(a)

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 5	3	E	4	3x4 =12
	25			Ci (First Attempt)162 + Ci (subsequent attempt) 12= 174

Thus, **SGPA= 174/25=6.96**

Illustration No.3

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	4	A	8	4x8 =32
Course 2	4	C	6	4x6 =24
Course 3	4	B	7	4x7 =28
Course 4	3	O	10	3x10=30
Course 5	3	S	9	3x9 =27
Course 6	3	C	6	3x6 =18
Course 7	2	S	9	2x9 =18
Course 8	2	C	6	2x6 =12
	25			**189**

Thus, **SGPA= 189/25=7.56**

$$\text{CGPA}= \frac{25x6.96+25x7.56}{50} = 7.26$$

CGPA after Final Semester

Sem-1	Sem-2	Sem-3	Sem-4	Sem-5	Sem-6	Sem-7	Sem-8
Credit: 24 SGPA: 7	Credit: 24 SGPA: 8.5	Credit: 27 SGPA: 9.2	Credit: 27 SGPA: 6.86	Credit: 24 SGPA: 8.18	Credit: 24 SGPA: 7.73	Credit: 24 SGPA: 8.68	Credit: 26 SGPA: 9.4

$$\text{Thus, CGPA}= \frac{24x7+24x\,8.5+27x\,9.2+27x6.86+24x\,8.18+24\,x7.73+24x8.68+26x9.4}{200} = \mathbf{8.2}$$

Transcript (Format): Based on the above recommendations on Letter grades, grade points, SGPA and CCPA, the transcript for each semester and a consolidated transcript indicating the performance in all semesters may be issued.

15OB 12 **CONVERSION OF GRADES INTO PERCENTAGE:**

Conversion formula for the conversion of GPA into Percentage is [CGPA Earned - 0.75] x 10= Percentage of marks scored.

Illustration: [CGPA Earned 8.2 - 0.75]x 10 = 74.5%

15OB 13 **AWARD OF PRIZES, MEDALS & RANKS**

15OB 13.1 For the award of Prizes and Medals, the conditions stipulated by the Donor may be considered subject to the provisions of the statutes framed by the University for such awards.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

I SEMESTER B.E./B.TECH.

PHYSICS GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT11	Engineering Maths-I	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15PHY12	Engineering Physics	BS	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV13	Elements of Civil Engg. & Mechanics	ES	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15EME14	Elements of Mechanical Engg.	ES	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE15	Basic Electrical Engg.	ES	E & E	E & E	4 (T)	80	20	100	4
6	15WSL16	Workshop Practice	ES	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHYL17	Engg. Physics Lab	BS	Physics	Basic Sc.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
8	15CPH18	Constitution of India, Professional Ethics and Human Rights (CPH)	MNC	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
						29	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

IISEMESTER B.E./B.TECH.

PHYSICS GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT21	Engineering Maths-II	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15PHY22	Engineering Physics	BS	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV23	Elements of Civil Engg. & Mechanics	ES	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15EME24	Elements of Mechanical Engg.	ES	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE25	Basic Electrical Engg.	ES	E & E	E & E	4 (T)	80	20	100	4
6	15WSL26	Workshop Practice	ES	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHYL27	Engg. Physics Lab	BS	Physics	Basic Sc.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
8	15CPH28	Constitution of India, Professional Ethics and Human Rights	MNC	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
						29	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

I SEMESTER B.E./B.TECH.

CHEMISTRY GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT11	Engineering Maths-I	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE12	Engineering Chemistry	BS	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD13	Programming in C & Data Structures	ES	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED14	Computer Aided Engineering Drawing	ES	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2I+ 4P)	80	20	100	4
5	15ELN15	Basic Electronics	ES	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL16	Computer Programming Lab	ES	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHEL17	Engg. Chemistry Lab	BS	Chemistry	Basic Sci.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV18	Environmental Studies	MNC	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
					Total	31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

II SEMESTER B.E./B.TECH.

CHEMISTRY GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT21	Engineering Maths-II	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE22	Engineering Chemistry	BS	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD23	Programming in C & Data Structures	ES	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED24	Computer Aided Engineering Drawing	ES	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2I+ 4P)	80	20	100	4
5	15ELN25	Basic Electronics	ES	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL26	Computer Programming Lab	ES	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHEL27	Engg. Chemistry Lab	BS	Chemistry	Basic Sc.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV28	Environmental Studies	MNC	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
					Total	31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

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)

I SEMESTER B.E./B.Tech (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	P					
1	BSC	18MAT11	Calculus and Linear Algebra	Mathematics	Maths	3	2	--	03	40	60	100	4
2	BSC	18PHY12	Engineering Physics	Physics	Physics	3	2	--	03	40	60	100	4
3	ESC	18ELE13	Basic Electrical Engineering	E and E Engineering	E and E Engineering	2	2	--	03	40	60	100	3
4	ESC	18CIV14	Elements of Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	2	2	--	03	40	60	100	3
5	ESC	18EGDL15	Engineering Graphics	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	--	2	03	40	60	100	3
6	BSC	18PHYL16	Engineering Physics Laboratory	Physics	Physics	--	--	2	03	40	60	100	1
7	ESC	18ELEL17	Basic Electrical Engineering Laboratory	E and E Engineering	E and E Engineering	--	--	2	03	40	60	100	1
8	HSMC	18EGH18	Technical English–I	Humanities	Humanities	--	2	--	03	40	60	100	1
					TOTAL	**12**	**10**	**06**	**24**	**320**	**480**	**800**	**20**

Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.

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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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)

I SEMESTER B.E./B.Tech (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	P					
1	BSC	18MAT11	Calculus and Linear Algebra	Mathematics	Mathematics	3	2	--	03	40	60	100	4
2	BSC	18CHE12	Engineering Chemistry	Chemistry	Chemistry	3	2	--	03	40	60	100	4
3	ESC	18CPS13	C Programming for Problem Solving	Computer Science and Engineering	Computer Science and Engineering	2	2	--	03	40	60	100	3
4	ESC	18ELN14	Basic Electronics	ECE/E and I/ TC	E and C Engineering	2	2	--	03	40	60	100	3
5	ESC	18ME15	Elements of Mechanical Engineering	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	2	2	--	03	40	60	100	3
6	BSC	18CHEL16	Engineering Chemistry Laboratory	Chemistry	Chemistry	--	--	2	03	40	60	100	1
7	ESC	18CPL17	C Programming Laboratory	Computer Science and Engineering	Computer Science and Engineering	--	--	2	03	40	60	100	1
8	HSMC	18EGH18	Technical English– I	Humanities	Humanities	--	2	--	03	40	60	100	1
					TOTAL	**12**	**12**	**04**	**24**	**320**	**480**	**800**	**20**

Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.

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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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

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	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	100	3
5	PCC	18CV35	Basic Surveying	Civil Engg.	3	0	--	03	40	60	100	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	100	2
8	PCC	18CVL38	Building Materials Testing Laboratory	Civil Engg.	--	2	2	03	40	60	100	2
9	HSMC	18KVK39	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		OR										
		18KAK39	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17 OR 18**	**08 OR 10**	**04**	**24 OR 26**	**420 OR 360**	**480 OR 540**	**900**	**24**

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course.

18KVK39Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18KAK39 Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP31	Additional Mathematics - I	Mathematics	02	01	--	03	40	60	100	0

(a)The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F

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Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2018 – 19)

Programme: CIVIL ENGINEERING

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	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	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for Communication)/	HSMC	--	2	--	--	100	--	100	1
		OR										
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17**	**08**	**04**	**24**	**420**	**480**	**900**	**24**
					OR	**OR**		**OR**	**OR**	**OR**		
					18	**10**		**26**	**360**	**540**		

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course.

18KVK39/49Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18KAK39/49Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP41	Additional Mathematics - II	Mathematics	02	01	--	03	40	60	100	0

(a)The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s to appear for SEE.

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(Effective from the academic year 2018 – 19)

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	BSC	18MAT31	Transform Calculus, Fourier Series And Numerical Techniques	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18CS32	Data Structures and Applications	CS / IS	3	2	--	03	40	60	100	4
3	PCC	18CS33	Analog and Digital Electronics	CS / IS	3	0	--	03	40	60	100	3
4	PCC	18CS34	Computer Organization	CS / IS	3	0	--	03	40	60	100	3
5	PCC	18CS35	Software Engineering	CS / IS	3	0	--	03	40	60	100	3
6	PCC	18CS36	Discrete Mathematical Structures	CS / IS	3	0	--	03	40	60	100	3
7	PCC	18CSL37	Analog and Digital Electronics Laboratory	CS / IS	--	2	2	03	40	60	100	2
8	PCC	18CSL38	Data Structures Laboratory	CS / IS	--	2	2	03	40	60	100	2
9	HSMC	18KVK39	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK39	Aadalitha Kannada (Kannada for Administration)									
		OR	**OR**									
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17**	**08**	**04**	**24**	**420**	**480**	**900**	**24**
					OR	**OR**		**OR**	**OR**	**OR**		
					18	**10**		**26**	**360**	**540**		

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course

18KVK39 Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and **18KAK39** Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP31	Additional Mathematics - I	Mathematics	02	01	--	03	40	60	100	0

(a)The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B.Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s to appear 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. 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.

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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	BSC	18MAT41	Complex Analysis, Probability and Statistical Methods	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18CS42	Design and Analysis of Algorithms	CS / IS	3	2	--	03	40	60	100	4
3	PCC	18CS43	Operating Systems	CS / IS	3	0	--	03	40	60	100	3
4	PCC	18SC44	Microcontroller and Embedded Systems	CS / IS	3	0	--	03	40	60	100	3
5	PCC	18CS45	Object Oriented Concepts	CS / IS	3	0	--	03	40	60	100	3
6	PCC	18CS46	Data Communication	CS / IS	3	0	--	03	40	60	100	3
7	PCC	18CSL47	Design and Analysis of Algorithm Laboratory	CS / IS	--	2	2	03	40	60	100	2
8	PCC	18CSL48	Microcontroller and Embedded Systems Laboratory	CS / IS	--	2	2	03	40	60	100	2
9	HSMC	18KVK49	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK49	Aadalitha Kannada (Kannada for Administration)									
		OR	**OR**									
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17**	**08**	**04**	**24**	**420**	**480**	**900**	**24**
					OR	**OR**		**OR**	**OR**	**OR**		
					18	**10**		**26**	**360**	**540**		

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course

18KVK49 Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and **18KAK49** Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP41	Additional Mathematics - II	Mathematics	02	01	--	03	40	60	100	0

(a)The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B.Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s to appear 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: 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.

PRINCIPAL
ATME College of Engineering
13th KM Mysuru-Kanakapura-Bangalore Road
Mellahalli Mysuru-570 028

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: B.E: Electronics & Communication Engineering

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	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques	Mathe matics	2	2	--	03	40	60	100	3
2	PCC	18EC32	Network Theory		3	2	--	03	40	60	100	4
3	PCC	18EC33	Electronic Devices		3	0	--	03	40	60	100	3
4	PCC	18EC34	Digital System Design		3	0	--	03	40	60	100	3
5	PCC	18EC35	Computer Organization & Architecture		3	0	--	03	40	60	100	3
6	PCC	18EC36	Power Electronics & Instrumentation		3	0	--	03	40	60	100	3
7	PCC	18ECL37	Electronic Devices & Instrumentation Laboratory		--	2	2	03	40	60	100	2
8	PCC	18ECL38	Digital System Design Laboratory		--	2	2	03	40	60	100	2
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for Communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
TOTAL					**17 OR 18**	**10 OR 08**	**04**	**24 OR 26**	**420 OR 360**	**480 OR 540**	**900**	**24**

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

Programme: B.E: Electronics & Communication Engineering

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	BSC	18MAT41	Complex Analysis, Probability and Statistical Methods	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18EC42	Analog Circuits		3	2	--	03	40	60	100	4
3	PCC	18EC43	Control Systems		3	0	--	03	40	60	100	3
4	PCC	18EC44	Engineering Statistics & Linear Algebra		3	0	--	03	40	60	100	3
5	PCC	18EC45	Signals & Systems		3	0	--	03	40	60	100	3
6	PCC	18EC46	Microcontroller		3	0	--	03	40	60	100	3
7	PCC	18ECL47	Microcontroller Laboratory		--	2	2	03	40	60	100	2
8	PCC	18ECL48	Analog Circuits Laboratory		--	2	2	03	40	60	100	2
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for Communication)	HSMC	--	2	--	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17**	**10**	**04**	**24**	**420**	**480**	**900**	**24**
					OR	**OR**		**OR**	**OR**	**OR**		
					18	**08**		**26**	**360**	**540**		

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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	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques (Common to all Branches)	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18EE32	Electric Circuit Analysis	EEE	3	2	--	03	40	60	100	4
3	PCC	18EE33	Transformers and Generators	EEE	3	0	--	03	40	60	100	3
4	PCC	18 EE 34	Analog Electronic Circuits	EEE	2	2	--	03	40	60	100	3
5	PCC	18 EE 35	Digital System Design	EEE	3	0	--	03	40	60	100	3
6	PCC	18 EE 36	Electrical and Electronic Measurements	EEE	3	0	--	03	40	60	100	3
7	PCC	18 EE L37	Electrical Machines Laboratory -1	EEE	--	2	2	03	40	60	100	2
8	PCC	18 EE L38	Electronics Laboratory	EEE	--	2	2	03	40	60	100	2
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	16 OR 17	10 OR 12	04	24 OR 26	420 OR 360	480 OR 540	900	24

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course.

18KVK39Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18KAK39 Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP31	Additional Mathematics - I	Mathematics	02	01	--	03	40	60	100	0

(a)The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B. Tech. programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s to appear 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.

In case students fail to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points.

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(Effective from the academic year 2018 – 19)

IVSEMESTER

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	BSC	18MAT41	Complex analysis, probability and statistical methods	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18 EE42	Power Generation and Economics	EEE	3	0	--	03	40	60	100	3
3	PCC	18 EE43	Transmission and Distribution	EEE	3	2	--	03	40	60	100	4
4	PCC	18 EE44	Electric Motors	EEE	3	0	--	03	40	60	100	3
5	PCC	18 EE45	Electromagnetic Field Theory	EEE	2	2	--	03	40	60	100	3
6	PCC	18 EE46	Operational Amplifiers and Linear ICs	EEE	3	0	--	03	40	60	100	3
7	PCC	18 EEL47	Electrical Machines Laboratory -2	EEE	--	2	2	03	40	60	100	2
8	PCC	18 EEL48	Op- amp and Linear ICs Laboratory	EEE	--	2	2	03	40	60	100	2
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPH49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**16**	**10**	**04**	**24**	**420**	**480**	**900**	**24**
					OR	**OR**		**OR**	**OR**	**OR**		
					17	**12**		**26**	**360**	**540**		

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course.

18KVK39/49Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18KAK39/49 Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP41	Additional Mathematics - II	Mathematics	02	01	--	03	40	60	100	0

((a)The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination .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 F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s to appear 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: 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.

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

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	BSC	18MAT31	Transform calculus, fourier series and Numerical techniques	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18ME32	Mechanics of Materials		3	2	--	03	40	60	100	4
3	PCC	18ME33	Basic Thermodynamics		3	0	--	03	40	60	100	3
4	PCC	18ME34	Material Science		3	0	--	03	40	60	100	3
5	PCC	18ME35A or	Metal cutting and forming		3	0	--	03	40	60	100	3
		18ME35B	Metal Casting and Welding									
6	PCC	18ME36A or	Computer Aided Machine Drawing/		1	4	--	03	40	60	100	3
		18ME36B	Mechanical Measurements and Metrology		3	0						
7	PCC	18MEL37A or	Material Testing lab		--	2	2	03	40	60	100	2
		18MEL37B	Mechanical Measurements and Metrology lab									
8	PCC	18MEL38A	Workshop and Machine Shop Practice (Consists of Fitting, and Machining)		--	2	2	03	40	60	100	2
		18MEL38B	Foundry,Forging and Welding lab									
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17**	**10**	**04**	**24**	**420**	**480**	**900**	**24**
					OR	**OR**		**OR**	**OR**	**OR**		
					19	**14**		**26**	**360**	**540**		

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course.

18KVK39 Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18KAK39 Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP31	Additional Mathematics - I	Mathematics	02	01	--	03	40	60	100	0

a) The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s to appear 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.

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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	BSC	18MAT41	Mathematics	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18ME42	Applied Thermodynamics		3	2	--	03	40	60	100	4
3	PCC	18ME43	Fluid Mechanics		3	0	--	03	40	60	100	3
4	PCC	18ME44	Kinematics of Machines		3	0	--	03	40	60	100	3
5	PCC	18ME45A	Metal cutting and forming		3	0	--	03	40	60	100	3
		18ME45B	Metal Casting and Welding									
6	PCC	18ME46A or	Computer Aided Machine Drawing/		1	4	--	03	40	60	100	3
		18ME46B	Mechanical Measurements and Metrology		3	0						
7	PCC	18MEL47A or	Material Testing lab		--	2	2	03	40	60	100	2
		18MEL47B	Mechanical Measurements and Metrology lab									
8	PCC	18MEL48A	Workshop and Machine Shop Practice (Consists of Fitting, and Machining)		--	2	2	03	40	60	100	2
		18MEL48B	Foundry, Forging and Welding lab									
9	HSMC	18KVK49/49	Vyavaharika Kannada (Kannada for communication)/	HSMC	--	2	--	--	100	--	100	1
		18KAK49/49	Aadalitha Kannada (Kannada for Administration)									
		OR										
		18CPH49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
					Examination is by objective type questions							
				TOTAL	**17 OR 19**	**10 OR 14**	**04**	**24 OR 26**	**420 OR 360**	**480 OR 540**	**900**	**24**

18KVK39 Vyavaharika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18KAK39 Aadalitha Kannada (Kannada for Administration) is for students who speak, read and write Kannada.

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

10	NCMC	18MATDIP31	Additional Mathematics - I	Mathematics	02	01	--	03	40	60	100	0

(a) The mandatory non – credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. 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 F grade. In such a case, the student have to fulfill the requirements during subsequent semester/s to appear 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.

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(Effective from the academic year 2018 – 19)

Programme: CIVIL ENGINEERING

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	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
9	HSMC	18CIV59	Environmental Studies	Civil/Environmental [Paper setting Board: Civil Engineering]	1	--	--	02	40	60	100	1
				TOTAL	**18**	**10**	**04**	**26**	**360**	**540**	**900**	**25**

Note: PCC: Professional Core, HSMC: Humanity and Social Science.

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.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

CIVIL ENGINEERING

Scheme of Teaching and Examination 2018 – 19

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(Effective from the academic year 2018 – 19)

VI 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	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 out during the vacation/s of VI and VII semesters and /or VII and VIII semesters.								
			TOTAL		**15**	**12**	**06**	**24**	**320**	**480**	**800**	**24**

Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project.

Professional Elective -1

Course code under18CV64X	
18CV641	Matrix Method of Structural Analysis

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Mellahalli Mysuru-570 028

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

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	HSMC	18CS51	Management, Entrepreneurship for IT idustry	HSMC	2	2	--	03	40	60	100	3
2	PCC	18CS52	Computer Networks and Security	CS / IS	3	2	--	03	40	60	100	4
3	PCC	18CS53	Database Management System	CS / IS	3	2	--	03	40	60	100	4
4	PCC	18CS54	Automata theory and Computability	CS / IS	3	--	--	03	40	60	100	3
5	PCC	18CS55	Application Development using Python	CS / IS	3	--	--	03	40	60	100	3
6	PCC	18CS56	Unix Programming	CS / IS	3	--	--	03	40	60	100	3
7	PCC	18CSL57	Computer Network Laboratory	CS / IS	--	2	2	03	40	60	100	2
8	PCC	18CSL58	DBMS Laboratory with mini project	CS / IS	--	2	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1	--	--	02	40	60	100	1
				TOTAL	**18**	**10**	**04**	**26**	**360**	**540**	**900**	**25**

Note: PCC: Professional Core, HSMC: Humanity and Social Science.

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.

PRINCIPAL
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Scheme of Teaching and Examination 2018 – 19
Choice Based Credit System (CBCS) AND Outcome Based Education (OBE)
(Effective from the academic year 2018 – 19)

VI 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	PCC	18CS61	System Software and Compilers	CS / IS	3	2	--	03	40	60	100	4
2	PCC	18CS62	Computer Graphics and Visualization	CS / IS	3	2	--	03	40	60	100	4
3	PCC	18CS63	Web Technology and its applications	CS / IS	3	2	--	03	40	60	100	4
4	PEC	18CS64X	Professional Elective -1	CS / IS	3	--	--	03	40	60	100	3
5	OEC	18CS65X	Open Elective –A	CS / IS	3	--	--	03	40	60	100	3
6	PCC	18CSL66	System Software Laboratory	CS / IS	--	2	2	03	40	60	100	2
7	PCC	18CSL67	Computer Graphics Laboratory with mini project	CS / IS	--	2	2	03	40	60	100	2
8	MP	18CSMP68	Mobile Application Development	CS / IS	--	--	2	03	40	60	100	2
9	INT	--	Internship	(To be carried out during the intervening vacations of VI and VII semesters)				--	--	--	--	--
				TOTAL	**15**	**10**	**06**	**24**	**320**	**480**	**800**	**24**

Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project, INT: Internship.

Professional Elective -1

Course code under18XX64X	Course Title
18CS641	Data Mining and Data Warehousing
18CS642	Object Oriented Modelling and Design
18CS643	Cloud Computing and its Applications
18CS644	Advanced JAVA and J2EE
18CS645	System Modelling and Simulation
Open Elective –A (Not for CSE / ISE Programs)	
18CS651	Mobile Application Development
18CS652	Introduction to Data Structures and Algorithms
18CS653	Programming in JAVA
18CS654	Introduction to Operating System

Students can select any one of the open electives offered by any Department (Please refer to the list of open electives under 18CS65X).
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/ Adviser/Mentor.

Mini-project work: 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 senior faculty members of the Department, one of whom shall be 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 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 college. 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.

SEE for Mini-project:

(i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the semester end examination (SEE) conducted at the department.

(ii) Interdisciplinary: Contribution to the Mini-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: 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 takeup/complete the internship shall be declared fail and shall 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.

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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: B.E: Electronics & Communication Engineering

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	HSMC	18ES51	Technological Innovation Management and Entrepreneurship		3	0	--	03	40	60	100	3
2	PCC	18EC52	Digital Signal Processing		3	2	--	03	40	60	100	4
3	PCC	18EC53	Principles of Communication Systems		3	2	--	03	40	60	100	4
4	PCC	18EC54	Information Theory & Coding		3	--	--	03	40	60	100	3
5	PCC	18EC55	Electromagnetic Waves		3	--	--	03	40	60	100	3
6	PCC	18EC56	Verilog HDL		3	--	--	03	40	60	100	3
7	PCC	18ECL57	Digital Signal Processing Laboratory		--	2	2	03	40	60	100	2
8	PCC	18ECL58	HDL Laboratory		--	2	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/Environmental [Paper setting: Civil Engineering Board]	1	--	--	02	40	60	100	1
				TOTAL	**19**	**8**	**4**	**26**	**360**	**540**	**900**	**25**

Note: PCC: Professional Core, HSMC: Humanity and Social Science.

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.

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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: B.E: Electronics & Communication Engineering

VI 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	PCC	18EC61	Digital Communication		3	2	--	03	40	60	100	4
2	PCC	18EC62	Embedded Systems		3	2	--	03	40	60	100	4
3	PCC	18EC63	Microwave and Antennas		3	2	--	03	40	60	100	4
4	PEC	18XX64X	Professional Elective -1		3	--	--	03	40	60	100	3
5	OEC	18XX65X	Open Elective -A		3	--	--	03	40	60	100	3
6	PCC	18ECL66	Embedded Systems Laboratory		--	2	2	03	40	60	100	2
7	PCC	18ECL67	Communication Laboratory		--	2	2	03	40	60	100	2
8	MP	18ECMP68	Mini-project		--	--	2	03	40	60	100	2
9	Internship	--	Internship	To be carried out during the vacation/s of VI and VII semesters and /or VII and VIII semesters.								
				TOTAL	**15**	**10**	**6**	**24**	**320**	**480**	**800**	**24**

Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project.

Professional Elective -1

Course code under 18XX64X	Course Title
18EC641	Operating System
18EC642	Artificial Neural Networks
18EC643	Data Structures using C++
18EC644	Digital System Design Using Verilog
18EC645	Nanoelectronics
18EC646	Python Application Programming

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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	PCC	18 EE51	Management and Entrepreneurship	EEE	3	0	--	03	40	60	100	3
2	PCC	18 EE52	Microcontroller	EEE	3	2	--	03	40	60	100	4
3	PCC	18 EE53	Power Electronics	EEE	3	2	--	03	40	60	100	4
4	PCC	18 EE54	Signals and Systems	EEE	3	--	--	03	40	60	100	3
5	PCC	18 EE55	Electrical Machine Design	EEE	3	--	--	03	40	60	100	3
6	PCC	18 EE56	High Voltage Engineering	EEE	3	--	--	03	40	60	100	3
7	PCC	18 EEL57	Microcontroller Laboratory	EEE	--	2	2	03	40	60	100	2
8	PCC	18 EEL58	Power Electronics Laboratory	EEE	--	2	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1	--	--	02	40	60	100	1
				TOTAL	**18**	**10**	**4**	**26**	**360**	**540**	**900**	**25**

Note: PCC: Professional Core, HSMC: Humanity and Social Science.

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.

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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/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	PCC	18 EE61	Control Systems	EEE	3	2	--	03	40	60	100	4
2	PCC	18 EE62	Power System Analysis – 1	EEE	3	2	--	03	40	60	100	4
3	PCC	18 EE63	Digital Signal Processing	EEE	3	2	--	03	40	60	100	4
4	PEC	18 EE64X	Professional Elective -1	EEE	3	--	--	03	40	60	100	3
5	OEC	18 EE65X	Open Elective -A	EEE	3	--	--	03	40	60	100	3
6	PCC	18 EEL66	Control System Laboratory	EEE	--	2	2	03	40	60	100	2
7	PCC	18 EEL67	Digital Signal Processing Laboratory	EEE	--	2	2	03	40	60	100	2
8	MP	18 EEMP68	Mini-project		--	--	2	03	40	60	100	2
9	Internship	--	Internship	To be carried out during the vacation/s of VI and VII semesters and /or VII and VIII semesters.								
				TOTAL	**15**	**10**	**06**	**24**	**320**	**480**	**800**	**24**

Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project.

Professional Elective -1

Course code under18XX64X	Course Title
18 EE641	Introduction to Nuclear Power
18 EE642	Electrical Engineering Materials
18 EE643	Computer Aided Electrical Drawing
18 EE644	Embedded System
18 EE645	Object Oriented Programming using C++
18EE646	**Electric Vehicles Technologies**
18EE647	**Sensors and Transducers**

Open Elective -A

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.

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Mini-project work:

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 senior faculty members of the Department, one of whom shall be 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 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 college.

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.

SEE for Mini-project:

(i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the semester end examination (SEE) conducted at the department.

(ii) Interdisciplinary: Contribution to the Mini-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 belong to.

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.

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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	PCC	18ME51	Management and Economics		2	2	--	03	40	60	100	3
2	PCC	18ME52	Design of Machine Elements I		3	2	--	03	40	60	100	4
3	PCC	18ME53	Dynamics of Machines		3	2	--	03	40	60	100	4
4	PCC	18ME54	Turbo Machines		3	--	--	03	40	60	100	3
5	PCC	18ME55	Fluid Power Engineering		3	--	--	03	40	60	100	3
6	PCC	18ME56	Operations Management		3	--	--	03	40	60	100	3
7	PCC	18MEL57	Fluid Mechanics/Machines lab		--	2	2	03	40	60	100	2
8	PCC	18MEL58	Energy Conversion Lab		--	2	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1	--	--	02	40	60	100	1
				TOTAL	**18**	**10**	**04**	**26**	**360**	**540**	**900**	**25**

Note: PCC: Professional Core, HSMC: Humanity and Social Science.

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.

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(Effective from the academic year 2018 – 19)

VI 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	PCC	18ME61	Finite Element Methods		3	2	--	03	40	60	100	4
2	PCC	18ME62	Design of Machine Elements II		3	2	--	03	40	60	100	4
3	PCC	18ME63	Heat Transfer		3	2	--	03	40	60	100	4
4	PEC	18ME64X	Professional Elective -1		3	--	--	03	40	60	100	3
5	OEC	18ME65X	Open Elective -A		3	--	--	03	40	60	100	3
6	PCC	18MEL66	Computer Aided Modelling and Analysis Lab		--	2	2	03	40	60	100	2
7	PCC	18MEL67	Heat Transfer Lab		--	2	2	03	40	60	100	2
8	MP	18MEMP68	Mini-project		--	--	2	03	40	60	100	2
9	Internship	--	Internship	To be carried out during the vacation/s of VI and VII semesters and /or VII and VIII semesters.								
				TOTAL	**15**	**10**	**06**	**24**	**320**	**480**	**800**	**24**

Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project.

Professional Elective -1

Course code under 18XX64X	Course Title	Course code under 18XX64X	Course Title
18ME641	**Non-Traditional Machining**	18ME644	**Vibrations and Noise Engineering**
18ME642	**Refrigeration and Air conditioning**	18ME645	**Composite Materials Technology**
18ME643	**Theory of Elasticity**	18ME646	**Entrepreneurship Development**

Open Elective -A

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.

Mini-project work:

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 senior faculty members of the Department, one of whom shall be 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 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 college. 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.

SEE for Mini-project:

(i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the semester end examination (SEE) conducted at the department.

(ii) Interdisciplinary: Contribution to the Mini-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: 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.

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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

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	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 completed during the vacation of VI and VII semesters, it shall be carried out during the vacation of VII and VIII semesters)								
				TOTAL	**15**	**04**	**06**	**21**	**380**	**420**	**00**	**20**

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

Professional Elective - 2

Course code under 18CV73X	Course Title
18CV731	Theory of Elasticity
18CV732	Air Pollution and Control
18CV733	Pavement Materials & Construction
18CV734	Ground Water Hydraulics
18CV735	Masonry Structures

Professional Electives - 3

Course code under 18CV74X	Course Title
18CV741	Earthquake Engineering
18CV742	Design Concepts of Building Services
18CV743	Reinforced Earth Structures

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Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
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Programme: CIVIL ENGINEERING

VIII SEMESTER

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P					
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	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:

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

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	PCC	18CS71	Artificial Intelligence and Machine Learning	CS / IS	4	--	--	03	40	60	100	4
2	PCC	18CS72	Big Data Analytics	CS / IS	4	--	--	03	40	60	100	4
3	PEC	18CS73X	Professional Elective – 2	CS / IS	3	--	--	03	40	60	100	3
4	PEC	18CS74X	Professional Elective – 3	CS / IS	3	--	--	03	40	60	100	3
5	OEC	18CS75X	Open Elective –B	CS / IS	3	--	--	03	40	60	100	3
6	PCC	18CSL76	Artificial Intelligence and Machine Learning Laboratory	CS / IS	--	--	2	03	40	60	100	2
7	Project	18CSP77	Project Work Phase – 1	CS / IS	--	--	2	--	100	--	100	1
8	INT	--	Internship	(If not completed during the vacation of VI and VII semesters, it has to be carried out during the intervening vacations of VII and VIII semesters								
				TOTAL	**17**	**--**	**04**	**18**	**340**	**360**	**700**	**20**

Note: PCC: Professional core, PEC: Professional Elective, OEC: Open Elective, INT: Internship.

Professional Elective - 2

Course code under 18CS73X	Course Title
18CS731	Software Architecture and Design Patterns
18CS732	High Performance Computing
18CS733	Advanced Computer Architecture
18CS734	User Interface Design

Professional Electives – 3

Course code under 18CS74X	Course Title
18CS741	Digital Image Processing
18CS742	Network management
18CS743	Natural Language Processing
18CS744	Cryptography
18CS745	Robotic Process Automation Design & Development

Open Elective –B (Not for CSE / ISE Programs)

18CS751	Introduction to Big Data Analytics
18CS752	Python Application Programming
18CS753	Introduction to Artificial Intelligence
18CS754	Introduction to Dot Net framework for Application Development

Students can select any one of the open electives offered by any Department (Please refer to the list of open electives under 18CS75X).
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/ Adviser/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, 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 takeup/complete the internship shall be declared fail and shall 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.

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

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	PCC	18CS81	Internet of Things	CS / IS	3	--	--	03	40	60	100	3
2	PEC	18CS82X	Professional Elective – 4	CS / IS	3	--	--	03	40	60	100	3
3	Project	18CSP83	Project Work Phase – 2	CS / IS	--	--	2	03	40	60	100	8
4	Seminar	18CSS84	Technical Seminar	CS / IS	--	--	2	03	100	--	100	1
5	INT	18CSI85	Internship	(Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters.)				03	40	60	100	3
				TOTAL	**06**	**--**	**04**	**15**	**260**	**240**	**500**	**18**

Note: PCC: Professional Core, PEC: Professional Elective, OEC: Open Elective, INT: Internship.

Professional Electives – 4

Course code under 18CS82X	Course Title
18CS821	Mobile Computing
18CS822	Storage Area Networks
18CS823	NoSQL Database
18CS824	Multicore Architecture and Programming

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 belong 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).

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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)

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	PCC	18 EE71	Power System Analysis – 2	EEE	2	2	--	03	40	60	100	3
2	PCC	18 EE72	Power System Protection	EEE	3	--	--	03	40	60	100	3
3	PEC	18 EE73X	Professional Elective - 2	EEE	3	--	--	03	40	60	100	3
4	PEC	18 EE74X	Professional Elective - 3	EEE	3	--	--	03	40	60	100	3
5	OEC	18 EE75X	Open Elective -B	EEE	3	--	--	03	40	60	100	3
6	PCC	18 EEL76	PSS laboratory	EEE	--	2	2	03	40	60	100	2
7	PCC	18 EEL77	Relay & HV lab	EEE	--	2	2	03	40	60	100	2
8	Project	18 EEP78	Project Work Phase - 1	EEE	--	--	2	--	100	--	100	1
9	Internship	--	Internship	(If not completed during the vacation of VI and VII semesters, it shall be carried out during the vacation of VII and VIII semesters)								
				TOTAL	**14**	**06**	**06**	**21**	**380**	**420**	**800**	**20**

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

Professional Elective - 2

Course code under 18XX73X	Course Title
18EE731	Solar and Wind Energy
18EE732	**Micro and Nano Scale Sensors and Transducers**
18 EE733	Integrated of Distribution Generation.
18 EE734	Advanced Control Systems
18 EE735	Reactive Power Control in Electric Power Systems

Professional Electives - 3

Course code under 18 EE74X	Course Title
18 EE741	Industrial Drives and Application
18 EE742	Utilization of Electrical Power
18 EE743	**AI Techniques for Electrical and hybrid Electric Vehicles**
18 EE744	Smart Grid
18 EE745	Artificial Neural Network With Applications to Power Systems

Open Elective -B

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.

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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)

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	PCC	18ME71	Control Engineering		3	--	--	03	40	60	100	3
2	PCC	18ME72	Computer Aided Design and Manufacturing		3	--	--	03	40	60	100	3
3	PEC	18ME73X	Professional Elective - 2		3	--	--	03	40	60	100	3
4	PEC	18ME74X	Professional Elective - 3		3	--	--	03	40	60	100	3
5	OEC	18ME75X	Open Elective -B		3	--	--	03	40	60	100	3
6	PCC	18MEL76	Computer Integrated Manufacturing Lab		--	2	2	03	40	60	100	2
	PCC	18MEL77	Design Lab		--	2	2	03	40	60	100	2
7	Project	18MEP78	Project Work Phase - 1		--	--	2	--	100	--	100	1
8	Internship	--	Internship	(If not completed during the vacation of VI and VII semesters, it shall be carried out during the vacation of VII and VIII semesters)								
				TOTAL	**15**	**04**	**06**	**18**	**340**	**360**	**700**	**20**

Professional Elective - 2

Course code under 18XX73X	Course Title	Course code under 18XX73X	Course Title
18ME731	**Design for Manufacture**	18ME734	**Total Quality Management**
18ME732	**Automation and Robotics**	18ME735	**Operations Research**
18ME733	**Computational Fluid Dynamics**		

Professional Electives - 3

Course code under 18XX74X	Course Title	Course code under 18XX74X	Course Title
18ME741	**Additive Manufacturing**	18ME744	**Mechatronics**
18ME742	**Emerging Sustainable Building Cooling Technologies**	18ME745	**Project Management**
18ME743	**Theory of Plasticity**		

Open Elective -B

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).

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- The candidate has studied the same course during the previous semesters of the programme.
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- 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 or6.

CIE procedure for Project Work Phase - 1:

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(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.

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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)

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	PCC	18ME81	**Energy Engineering**		3	--	--	03	40	60	100	3
2	PEC	18ME82X	**Professional Elective - 4**		3	--	--	03	40	60	100	3
3	Project	18MEP83	**Project Work Phase - 2**		--	--	2	03	40	60	100	8
4	Seminar	18MES84	**Technical Seminar**		--	--	2	03	100	--	100	1
5	Internship	18XXI85	Internship	Completed during the vacation/s of VI and VII semesters and /or VII and VIII semesters.)				03	40	60	100	3
				TOTAL	**06**	**--**	**04**	**15**	**260**	**240**	**500**	**18**

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

Professional Electives - 4

Course code under 18XX82X	Course Title	Course code under 18XX82X	Course Title
18ME821	**CNC Machine Tools**	18ME824	**Automobile Engineering**
18ME822	**Tribology**	18ME825	**Tool Design**
18ME823	**Non-Destructive Testing and Evaluation**	18ME826	**Fracture Mechanics**

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.

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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).

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Visvesvaraya Technological University, Belagavi

REGULATIONS GOVERNING
THE DEGREE OF BACHELOR OF ENGINEERING/ TECHNOLOGY (B.E/B.Tech)
UNDER CHOICE BASED CREDIT SYSTEM (CBCS)
Effective from the academic year 2017 – 18

Annexure -I

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

I SEMESTER B.E./B.Tech. (PHYSICS GROUP)

Sl. No	Course Code	Course Title	Teaching Department	Board	Teaching Hours/Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT11	Engineering Mathematics -I	Mathematics	Basic Science	04	--	03	60	40	100	4
2	17PHY12	Engineering Physics	Physics	Basic Science	04	--	03	60	40	100	4
3	17CIV13	Elements of Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	04	--	03	60	40	100	4
4	17EME14	Elements of Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	04	--	03	60	40	100	4
5	17ELE17	Basic Electrical Engineering	E and E Engineering	E and E Engineering	04	--	03	60	40	100	4
6	17WSL16	Workshop Practice	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	01Hour Instruction 02Hour Practical		03	60	40	100	2
7	17PHYL17	Engineering Physics Laboratory	Physics	Basic Science	01Hour Instruction 02Hour Practical		03	60	40	100	2
8	17ENG18	Language – English (Audit Course)	Humanities	--	01		--	--	--	--	--
				TOTAL	Theory:21 hours Practical: 06 hours		21	420	280	700	24

II SEMESTER B.E./B.Tech. (CHEMISTRY GROUP)

1	17MAT21	Engineering Mathematics -II	Mathematics	Basic Science	04	--	03	60	40	100	4
2	17CHE22	Engineering Chemistry	Chemistry	Basic Science	04	--	03	60	40	100	4
3	17PCD23	Programming in C and Data Structures	Any Engineering Department	Computer Science and Engineering	04	--	03	60	40	100	4
4	17CED24	Computer Aided Engineering Drawing	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	02Hour Instruction 04-Hour Practice		03	60	40	100	4
5	17ELN25	Basic Electronics	ECE/EEE/TCE and I	E and C Engineering	04	--	03	60	40	100	4
6	17CPL26	Computer Programming Laboratory	Any Engineering Department	Computer Science and Engineering	01Hour Tutorial 02Hour Practical		03	60	40	100	2
7	17CHEL27	Engineering Chemistry Laboratory	Chemistry	Basic Science	01Hour Tutorial 02Hour Practical		03	60	40	100	2
8	17CIV28	Environmental Studies (Audit Course)	Civil/ Environmental Engineering	Civil Engineering	01Tutorial		--	30	20	50	--
				TOTAL	Theory:21 hours Practical: 08 hours		21	450	300	750	24

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Visvesvaraya Technological University, Belagavi

REGULATIONS GOVERNING
THE DEGREE OF BACHELOR OF ENGINEERING/ TECHNOLOGY (B.E/B.Tech)
UNDER CHOICE BASED CREDIT SYSTEM (CBCS)
Effective from the academic year 2017–18

Annexure -I

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

I SEMESTER B.E./B.Tech (CHEMISTRY GROUP)

Sl. No	Course Code	Course Title	Teaching Department	Board	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT11	Engineering Mathematics -I	Mathematics	Basic Science	04	--	03	60	40	100	4
2	17CHE12	Engineering Chemistry	Chemistry	Basic Science	04	--	03	60	40	100	4
3	17PCD13	Programming in C and Data Structures	Any Engineering Department	Computer Science and Engineering	04	--	03	60	40	100	4
4	17CED14	Computer Aided Engineering Drawing	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	02Hour Instruction 04Hour Practice		03	60	40	100	4
5	17ELN17	Basic Electronics	ECE/EEE/TC/E and I.	E and C Engineering	04	--	03	60	40	100	4
6	17CPL16	Computer Programming Laboratory	Any Engineering Department	Computer Science and Engineering	01Hour Tutorial 02Hour Practical		03	60	40	100	2
7	17CHEL17	Engineering Chemistry Laboratory	Chemistry	Basic Science	01Hour Tutorial 02Hour Practical		03	60	40	100	2
8	17CIV18	Environmental Studies (Audit Course)	Civil/ Environmental Engineering	Civil Engineering	01HourTutorial		--	30	20	50	--
				TOTAL	Theory:21 hours Practical: 08 hours		21	450	300	750	24

II SEMESTER B.E./B.Tech (PHYSICS GROUP)

1	17MAT21	Engineering Mathematics -II	Mathematics	Basic Science	04	--	03	60	40	100	4
2	17PHY22	Engineering Physics	Physics	Basic Science	04	--	03	60	40	100	4
3	17CIV23	Elements of Civil Engineering and Mechanics	Civil Engineering	Civil Engineering	04	--	03	60	40	100	4
4	17EME24	Elements of Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	04	--	03	60	40	100	4
5	17ELE25	Basic Electrical Engineering	E and E Engineering	E and E Engineering	04	--	03	60	40	100	4
6	17WSL26	Workshop Practice	ME, Auto, IP, IEM, Mfg Engineering	Mechanical Engineering	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
7	17PHYL27	Engineering Physics Laboratory	Physics	Basic Science	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17ENG28	Language – English (Audit Course)	Humanities	--	01		--	--	--	--	--
				TOTAL	Theory:21 hours Practical: 06 hours		21	420	280	700	24

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION **2017-2018**

B.E: CIVIL ENGINEERING

III SEMESTER

Sl. No.	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics –III*	Maths	04		03	60	40	100	4
2	17CV32	Strength of Materials	Civil Engg.	04		03	60	40	100	4
3	17CV33	Fluid Mechanics	Civil Engg.	04		03	60	40	100	4
4	17CV34	Basic Surveying	Civil Engg.	04		03	60	40	100	4
5	17CV35	Engineering Geology	Civil Engg.	04		03	60	40	100	4
6	17CV36	Building Materials and Construction	Civil Engg.	03		03	60	40	100	3
7	17CVL37	Building Materials Testing Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	4
8	17CVL38	Basic Surveying Practice	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
TOTAL				**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2. Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I, which is 03 contact hours per week.

1	17MATDIP31	Additional Mathematics –I	Maths	03		03	60	--	60	--

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

PRINCIPAL
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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION **2017-2018**

B.E: CIVIL ENGINEERING

IV SEMESTER

Sl. No.	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics –IV*	Maths	04		03	60	40	100	4
2	17CV42	Analysis of Determinate Structures	Civil Engg.	04		03	60	40	100	3
3	17CV43	Applied Hydraulics	Civil Engg.	04		03	60	40	100	4
4	17CV44	Concrete Technology	Civil Engg.	04		03	60	40	100	4
5	17CV45	Basic Geotechnical Engineering	Civil Engg.	04		03	60	40	100	4
6	17CV46	Advanced Surveying	Civil Engg.	03		03	60	40	100	4
7	17CVL47	Fluid Mechanics Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CVL48	Engineering Geology Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
			TOTAL	**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2.Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – II, which is 03 contact hours per week.

1	17MATDIP41	Additional Mathematics –II	Maths	03		03	60	--	60	--

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

III SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics - III	Maths	04		03	60	40	100	4
2	17CS32	Analog and Digital Electronics	CS/IS	04		03	60	40	100	4
3	17CS33	Data Structures and Applications	CS/IS	04		03	60	40	100	4
4	17CS34	Computer Organization	CS/IS	04		03	60	40	100	4
5	17CS35	Unix and Shell Programming	CS/IS	03		03	60	40	100	3
6	17CS36	Discrete Mathematical Structures	CS/IS	04		03	60	40	100	4
7	17CSL37	Analog and Digital Electronics Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CSL38	Data Structures Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
TOTAL				**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1.Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2. Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I, which is 03 contact hours per week.

1	17MATDIP31	Additional Mathematics –I	Maths	03		03	60	--	60	--

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

IV SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics - IV	Maths	04		03	60	40	100	4
2	17CS42	Object Oriented Concepts	CS/IS	03		03	60	40	100	3
3	17CS43	Design and Analysis of Algorithms	CS/IS	04		03	60	40	100	4
4	17CS44	Microprocessors and Microcontrollers	CS/IS	04		03	60	40	100	4
5	17CS45	Software Engineering	CS/IS	04		03	60	40	100	4
6	17CS46	Data Communication	CS/IS	04		03	60	40	100	4
7	17CSL47	Design and Analysis of Algorithm Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CSL48	Microprocessors Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
			TOTAL	**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2.Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – II, which is 03 contact hours per week.

1	17MATDIP41	Additional Mathematics –II	Maths	03		03	60	--	60

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

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SCHEME OF TEACHING AND EXAMINATION
B.E Electronics & Communication Engineering / Telecommunication Engineering
(Common to Electronics & Communication and Telecommunication Engineering)

III SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics –III*	Maths	04		03	60	40	100	4
2	17EC32	Electronic Instrumentation	EC	03		03	60	40	100	3
3	17EC33	Analog Electronics	EC	04		03	60	40	100	4
4	17EC34	Digital Electronics	EC	04		03	60	40	100	4
5	17EC35	Network Analysis	EC	04		03	60	40	100	4
6	17EC36	Engineering Electromagnetics	EC	04		03	60	40	100	4
7	17ECL37	Analog Electronics Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17ECL38	Digital Electronics Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
TOTAL				**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1.Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2. Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I, which is 03 contact hours per week.

1	17MATDIP31	Additional Mathematics –I	Maths	03		03	60	--	60	--

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

PRINCIPAL
ATME College of Engineering
13th KM Mysuru-Kanakapura-Bangalore Road
Mellahalli Mysuru-570 028

B.E Electronics & Communication Engineering / Telecommunication Engineering
(Common to Electronics & Communication and Telecommunication Engineering)

IV SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics –IV*	Maths	04		03	60	40	100	4
2	17EC42	Signals and Systems	EC	04		03	60	40	100	4
3	17EC43	Control Systems	EC	04		03	60	40	100	4
4	17EC44	Principles of Communication Systems	EC	04		03	60	40	100	4
5	17EC45	Linear Integrated Circuits	EC	04		03	60	40	100	4
6	17EC46	Microprocessor	EC	03		03	60	40	100	3
7	17ECL47	Microprocessor Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17ECL48	Linear ICs and Communication Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
TOTAL				**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2.Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – II, which is 03 contact hours per week.

1	17MATDIP41	Additional Mathematics –II	Maths	03		03	60	--	60	--

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

B.E: ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

III SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics-III (Core)	Mathematics	04		03	60	40	100	4
2	17EE32	Electric Circuit Analysis (Core)	EEE	04		03	60	40	100	4
3	17EE33	Transformers and Generators (Core)	EEE	04		03	60	40	100	4
4	17EE34	Analog Electronic Circuits (Core)	EEE	04		03	60	40	100	4
5	17EE35	Digital System Design (Core)	EEE	04		03	60	40	100	4
6	17EE36	Electrical and Electronic Measurements (Foundation course)	EEE	03		03	60	40	100	3
7	17EEL37	Electrical Machines Laboratory -1	EEE	01- Hour Instruction 02- Hour Practical		03	60	40	100	2
8	17EEL38	Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
TOTAL				**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2. Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I, which is 03 contact hours per week.

1	17MATDIP31	Additional Mathematics –I	Maths	03		03	60	--	60	--

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

PRINCIPAL
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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

B.E: ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

IV SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics-IV (Core)	Mathematics	04		03	60	40	100	4
2	17EE42	Power Generation and Economics (Core)	EEE	04		03	60	40	100	4
3	17EE43	Transmission and Distribution (Core)	EEE	04		03	60	40	100	4
4	17EE44	Electric Motors (Core)	EEE	04		03	60	40	100	4
5	17EE45	Electromagnetic Field Theory (Core)	EEE	04		03	60	40	100	4
6	17EE46	Operational Amplifiers and Linear ICs (Foundation course)	EEE	03		03	60	40	100	3
7	17EEL47	Electrical Machines Laboratory -2	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17EEL48	Op- amp and Linear ICs Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
			TOTAL	**Theory: 24hours Practical: 06 hours**		**25**	**510**	**340**	**850**	**28**

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2.Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – II, which is 03 contact hours per week.

1	17MATDIP41	Additional Mathematics –II	Maths	03		03	60	--	60

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

PRINCIPAL
ATME College of Engineering
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B.E. Mechanical Engineering
III SEMESTER

Sl. No.	Subject Code	Title	Teaching Department	Teaching Hours /Week			Examination				Credits
				Lecture	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics – III	Maths	04			03	60	40	100	4
2	17ME32	Materials Science	ME	04			03	60	40	100	4
3	17ME33	Basic Thermodynamics	ME	03	02		03	60	40	100	4
4	17ME34	Mechanics of Materials	ME	03	02		03	60	40	100	4
5	17ME35A/ 17ME35B	Metal Casting and Welding	ME	04			03	60	40	100	4
		Machine Tools and Operations	ME								
6	17ME36A/ 17ME36B	Computer Aided Machine Drawing	ME	01		4	03	60	40	100	3
		Mechanical Measurements and Metrology	ME	03							
7	17MEL37A/ 17MEL37B	Materials Testing Lab/	ME	1		2	03	60	40	100	2
		Mechanical Measurements and Metrology Lab	ME								
8	17MEL38A/ 17MEL38B	Foundry and Forging Lab	ME	1		2	03	60	40	100	2
		Machine Shop/	ME								
9	17KL/CPH39 /49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	1			01	30	20	50	1
TOTAL				22/24	04	08/04		510	340	850	28

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13th K.M. Mysuru-Kanakapura-Bangalore Road
Mallahalli, Mysuru-570 028

Updated on 29.08.2020

B.E. Mechanical Engineering

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Department	Teaching Hours /Week			Examination				Credits
				Lecte	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics – III	Maths	04			03	60	40	100	04
2	17ME42	Kinematics of Machinery	ME	03	02		03	60	40	100	04
3	17ME43	Applied Thermodynamics	ME	03	02		03	60	40	100	04
4	17ME44	Fluid mechanics	ME	03	02		03	60	40	100	04
5	17ME45A/ 17ME45B	Metal Casting and Welding	ME	04			03	60	40	100	04
		Machine Tools and Operations	ME								
6	17ME46 A/ 17ME46B	Computer Aided Machine Drawing	ME	01		4	03	60	40	100	03
		Mechanical Measurements and Metrology	ME	03							
7	17MEL47A/ 17MEL47B	Materials Testing Lab/	ME	1		2	03	60	40	100	02
		Mechanical Measurements and Metrology Lab	ME								
8	17MEL48A/ 17MEL48B	Foundry and Forging Lab	ME	1		2	03	60	40	100	02
		Machine Shop/	ME								
9	17KL/CPH39/ 49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	1			01	30	20	50	1
TOTAL				**21/23**	**06**	**08/04**		**510**	**340**	**850**	**28**

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION **2017-2018**

B.E: CIVIL ENGINEERING

V SEMESTER

Sl. No.	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV51	Design of RC Structural Elements	Civil Engg.	04		03	60	40	100	4
2	17CV52	Analysis of Indeterminate Structures	Civil Engg.	04		03	60	40	100	4
3	17CV53	Applied Geotechnical Engineering	Civil Engg.	04		03	60	40	100	4
4	17CV54	Computer Aided Building Planning and Drawing	Civil Engg.	04		03	60	40	100	4
5	17CV55X	Professional Elective-1	Civil Engg.	03		03	60	40	100	3
6	17CV56X	Open Elective-1	Civil Engg.	03		03	60	40	100	3
7	17CVL57	Geotechnical Engineering Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CVL58	Concrete and Highway Materials Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	**Theory: 22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-1	
17CV551	Air pollution and Control
17CV552	Railways, Harbours, tunneling and Airports
17CV553	Masonry Structures
17CV554	Theory of Elasticity

Open Elective – 1* (List offered by Civil Engg Board only)**	
17CV561	Traffic Engineering
17CV562	Sustainability Concepts in Engineering
17CV563	Remote Sensing and GIS
17CV563	Occupational Health and Safety
17CV563	NCC

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:

- The candidate has no pre – requisite knowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION **2017-2018**

B.E: CIVIL ENGINEERING

VI SEMESTER

Sl. No.	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV61	Construction Management and Entrepreneurship	Civil Engg.	04		03	60	40	100	4
2	17CV62	Design of Steel Structural Elements	Civil Engg.	04		03	60	40	100	4
3	17CV63	Highway Engineering	Civil Engg.	04		03	60	40	100	4
4	17CV64	Water Supply and Treatment Engineering	Civil Engg.	04		03	60	40	100	4
5	17CV65X	Professional Elective-2	Civil Engg.	03		03	60	40	100	4
6	17CV66X	Open Elective-2	Civil Engg.	03		03	60	40	100	3
7	17CVL67	Software Application Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	3
8	17CVL68	Extensive Survey Project /Camp	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	**Theory:22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-2			**Open Elective – 2*** (List offered by Civil Engg Board only)**	
17CV651	Solid Waste Management		17CV661	Water Resource Management
17CV652	Matrix Method of Structural Analysis		17CV662	Environmental Protection and Management
17CV653	Alternative Building Materials		17CV663	Numerical Methods and Applications
17CV654	Ground Improvement Techniques		17CV664	Finite Element Analysis

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:

- The candidate has no pre – requisite knowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

V SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS51	Management and Entrepreneurship for IT Industry	CS/IS	04		03	60	40	100	4
2	17CS52	Computer Networks	CS/IS	04		03	60	40	100	4
3	17CS53	Database Management System	CS/IS	04		03	60	40	100	4
4	17CS54	Automata theory and Computability	CS/IS	04		03	60	40	100	4
5	17CS55x	Professional Elective-1	CS/IS	03		03	60	40	100	3
6	17CS56x	Open Elective-1	CS/IS	03		03	60	40	100	3
7	17CSL57	Computer Network Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CSL58	DBMS Laboratory with mini project	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	**Theory: 22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-1			**Open Elective – 1*** (List offered by CSE Board only)**	
17CS551	Object Oriented Modeling and Design		17CS561	Programming in JAVA *(Not for CSE/ISE students)*
17CS552	Introduction to Software Testing		17CS562	Artificial Intelligence
17CS553	Advanced JAVA and J2EE		17CS563	Embedded Systems
17CS554	Advanced Algorithms		17CS564	Dot Net framework for application development;
			17CS565	Cloud Computing *(Not for CSE/ISE students)*

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Selection of an open elective is not allowed, if:
· The candidate has no pre – requisite knowledge.
· The candidate has studied similar content course during previous semesters.
· The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).
Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
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B.E: Computer Science and Engineering

VI SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS61	Cryptography, Network Security and Cyber Law	CS/IS	04		03	60	40	100	4
2	17CS62	Computer Graphics and Visualization	CS/IS	04		03	60	40	100	4
3	17CS63	System Software and Compiler Design	CS/IS	04		03	60	40	100	4
4	17CS64	Operating Systems	CS/IS	04		03	60	40	100	4
5	17CS65x	Professional Elective-2	CS/IS	03		03	60	40	100	4
6	17CS66x	Open Elective-2	CS/IS	03		03	60	40	100	3
7	17CSL67	System Software and Operating System Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	3
8	17CSL68	Computer Graphics Laboratory with mini project	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	**Theory:22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-2			**Open Elective – 2*** (List offered by CSE Board only)**	
17CS651	Data Mining and Data Warehousing		17CS661	Mobile Application Development
17CS652	Software Architecture and Design Patterns		17CS662	Big Data Analytics *(Not for CSE/ISE students)*
17CS653	Operations research		17CS663	Wireless Networks and Mobile computing
17CS654	Distributed Computing system		17CS664	Python Application Programming
			17CS665	Service Oriented Architecture
			17CS666	Multicore Architecture and Programming

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:
· The candidate has no pre – requisite knowledge.
· The candidate has studied similar content course during previous semesters.
· The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).
Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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B.E.: Electronics & Communication Engineering

V SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17ES51	Management and Entrepreneurship Development	EC	04		03	60	40	100	4
2	17EC52	Digital Signal Processing	EC	04		03	60	40	100	4
3	17EC53	Verilog HDL	EC	04		03	60	40	100	4
4	17EC54	Information Theory & Coding	EC	04		03	60	40	100	4
5	17EC55X	Professional Elective-1	EC	03		03	60	40	100	3
6	17EC56X	Open Elective-1	EC	03		03	60	40	100	3
7	17ECL57	DSP Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17ECL58	HDL Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
TOTAL				**Theory: 22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-1			**Open Elective – 1*** (List offered by EC/TC Board only)**	
17EC551	Nanoelectronics		17EC561	Automotive Electronics
17EC552	Switching & Finite Automata Theory		17EC562	Object Oriented Programming Using C++
17EC553	Operating System		17EC563	8051 Microcontroller
17EC554	Electrical Engineering Materials			
17EC555	MSP430 Microcontroller			

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:

- The candidate has no pre – requisite knowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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B.E.: Electronics & Communication Engineering

VI SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EC61	Digital Communication	EC	04		03	60	40	100	4
2	17EC62	ARM Microcontroller & Embedded Systems	EC	04		03	60	40	100	4
3	17EC63	VLSI Design	EC	04		03	60	40	100	4
4	17EC64	Computer Communication Networks	EC	04		03	60	40	100	4
5	17EC65X	Professional Elective-2	EC	03		03	60	40	100	3
6	17EC66X	Open Elective-2	EC	03		03	60	40	100	3
7	17ECL67	Embedded Controller Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17ECL68	Computer Networks Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
TOTAL				**Theory: 22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-2			**Open Elective – 2*** (List offered by EC/TC Board only)**	
17EC651	Cellular Mobile Communication		17EC661	Data Structures Using C++
17EC652	Adaptive Signal Processing		17EC662	Power Electronics *(not for E&C students)*
17EC653	Artificial Neural Networks		17EC663	Digital System Design using Verilog
17EC654	Digital Switching Systems			
17EC655	Microelectronics			

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:

- The candidate has no pre – requisite knowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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B.E: ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

V SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE51	Management and Entrepreneurship	EEE	04		03	60	40	100	4
2	17EE52	Microcontroller(Core)	EEE	04		03	60	40	100	4
3	17EE53	Power Electronics(Core)	EEE	04		03	60	40	100	4
4	17EE54	Signals and Systems(Core)	EEE	04		03	60	40	100	4
5	17EE55X	Professional Elective – I	EEE	03		03	60	40	100	3
6	17EE56Y	Open Elective - I	EEE	03		03	60	40	100	3
7	17EEL57	Microcontroller Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17EEL58	Power Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	**Theory: 22hours Practical: 06 hours**		**24**	**480**	**320**	**800**	**26**

Professional Elective-1			**Open Elective – 1*** (List offered by EEE Board only)**	
17EE551	Introduction to Nuclear Power		17EE561	Electronic Communication systems
17EE552	Electrical Engineering Materials		17EE562	Programmable Logic controllers
17EE553	Estimating and Costing		17EE563	Renewable Energy Systems
17EE554	Special Electrical Machines		17EE564	Business Communication

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:
· The candidate has no pre –requisiteknowledge.
· The candidate has studied similar content course during previous semesters.
· The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).
Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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B.E: ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

VI SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE61	Control Systems(Core)	EEE	04		03	60	40	100	4
2	17EE62	Power System Analysis – 1(Core)	EEE	04		03	60	40	100	4
3	17EE63	Digital Signal Processing(Core)	EEE	04		03	60	40	100	4
4	17EE64	Electrical Machine Design(Core)	EEE	04		03	60	40	100	4
5	17EE65X	Professional Elective – II	EEE	03		03	60	40	100	3
6	17EE66Y	Open Elective - II	EEE	03		03	60	40	100	3
7	17EEL67	Control System Laboratory	EEE	01- Hour Instruction 02- Hour Practical		03	60	40	100	2
8	17EEL68	Digital Signal Processing Laboratory	EEE	01- Hour Instruction 02- Hour Practical		03	60	40	100	2
			TOTAL	**Theory:22hours Practical: 06 hours**		Core Course	**480**	**320**	**800**	**26**

Professional Elective-2			**Open Elective – 2*** (List offered by EEE Board only)**	
17EE651	Computer Aided Electrical Drawing		17EE661	Artificial Neural Networks and Fuzzy logic
17EE652	Advanced Power Electronics		17EE662	Sensors and Transducers
17EE653	Energy Audit and Demand side Management		17EE663	Batteries and Fuel Cells for Commercial, Military and Space Applications
17EE654	Solar and Wind Energy		17EE664	Industrial Servo Control Systems

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).
Selection of an open elective is not allowed, if:

- The candidate has no pre –requisiteknowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied as Professional elective(s).

. A similar course, under any category, is prescribed in the higher semesters.

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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B.E. Mechanical Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	
1	17ME51	Management and Engineering Economics	3	2	0	03	60	40	100	4
2	17ME52	Dynamics of Machinery	3	2	0	03	60	40	100	4
3	17ME53	Turbo Machines	3	2	0	03	60	40	100	4
4	17ME54	Design of Machine Elements - I	3	2	0	03	60	40	100	4
5	17ME55X	Professional Elective-I	3	0	0	03	60	40	100	3
6	17ME56X	Open Elective-I	3	0	0	03	60	40	100	3
7	17MEL57	Fluid Mechanics & Machinery Lab	1	0	2	03	60	40	100	2
8	17MEL58	Energy Lab	1	0	2	03	60	40	100	2
TOTAL			**20**	**08**	**04**		**480**	**320**	60	40

Professional Elective-I		Open Elective-I	
17ME551	Refrigeration and Air-conditioning	17ME561	Optimization Techniques
17ME552	Theory of Elasticity	17ME562	Energy and Environment
17ME553	Human Resource Management	17ME563	Automation and Robotics
17ME554	Non Traditional Machining	17ME564	Project Management

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1. **Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
2. **Professional Elective:** Elective relevant to chosen specialization/ branch
3. **Open Elective**: Electives from other technical and/or emerging subject areas.

B.E. Mechanical Engineering

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	
1	17ME61	Finite Element Analysis	3	2	0	03	60	40	100	4
2	17ME62	Computer integrated Manufacturing	4	0	0	03	60	40	100	4
3	17ME63	Heat Transfer	3	2	0	03	60	40	100	4
4	17ME64	Design of Machine Elements -II	3	2	0	03	60	40	100	4
5	17ME65X	Professional Elective-II	3	0	0	03	60	40	100	3
6	17ME66X	Open Elective-II	3	0	0	03	60	40	100	3
7	17MEL67	Heat Transfer Lab	1	0	2	03	60	40	100	2
8	17MEL68	Modeling and Analysis Lab(FEA)	1	0	2	03	60	40	100	2
TOTAL			**21**	**6**	**04**		**480**	**320**	60	40

Professional Elective-II		Open Elective-II	
17ME651	Computational Fluid Dynamics	17ME661	Energy Auditing
17ME652	Mechanics of Composite Materials	17ME662	Industrial Safety
17ME653	Metal Forming	17ME663	Maintenance Engineering
17ME654	Tool Design	17ME664	Total Quality Management
17ME655	Automobile Engineering		

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1. **Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
2. **Professional Elective:** Elective relevant to chosen specialization/ branch
3. **Open Elective**: Electives from other technical and/or emerging subject areas.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION **2017-2018**

B.E: CIVIL ENGINEERING

VII SEMESTER

Sl. No.	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV71	Municipal and Industrial Waste Water Engineering	Civil Engg.	04		03	60	40	100	4
2	17CV72	Design of RCC and Steel Structures	Civil Engg.	04		03	60	40	100	4
3	17CV73	Hydrology and Irrigation Engineering	Civil Engg.	04		03	60	40	100	4
4	17CV74X	Professional Elective-3	Civil Engg.	03		03	60	40	100	3
5	17CV75X	Professional Elective-4	Civil Engg.	03		03	60	40	100	3
6	17CVL76	Environmental Engineering Laboratory	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
7	17CVL77	Computer Aided Detailing of Structures	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CVP78	Project Work Phase–I + Project work Seminar	Civil Engg.		03	--	--	100	100	2
TOTAL				**Theory:18 hours Practical and Project: 09 hours**		**21**	**420**	**380**	**800**	**24**

Professional Elective-3		**Professional Elective-4**	
17CV741	Design of Bridges	17CV751	Urban Transportation and Planning
17CV742	Ground Water & Hydraulics	17CV752	Prefabricated Structures
17CV743	Design Concept of Building Services	17CV753	Rehabilitation and Retrofitting of Structures
17CV744	Structural Dynamics	17CV754	Reinforced Earth Structures

1. **Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION **2017-2018**

B.E: CIVIL ENGINEERING

VIII SEMESTER

Sl. No.	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV81	Quantity Surveying and Contracts Management	Civil Engg.	4	-	3	60	40	100	4
2	17CV82	Design of Pre Stressed Concrete Elements	Civil Engg.	4	-	3	60	40	100	4
3	17CV83X	Professional Elective-5	Civil Engg.	3	-	3	60	40	100	3
4	17CV84	Internship/ Professional Practice	Civil Engg.	Industry Oriented		3	50	50	100	2
5	17CVP85	Project Work-II	Civil Engg.	-	6	3	100	100	200	6
6	17CVS86	Seminar on current trends in Engineering and Technology	Civil Engg.	-	4	-	-	100	100	1
TOTAL				**Theory: 11 hours Project and Seminar: 10 hours**		**15**	**330**	**370**	**700**	**20**

Professional Elective -5	
17CV831	Earthquake Engineering
17CV832	Hydraulic Structures
17CV833	Pavement Design
17CV834	Advanced Foundation Design

1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.

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B.E: Computer Science and Engineering

VII SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS71	Web Technology and its applications	CS/IS	04		03	60	40	100	4
2	17CS72	Advanced Computer Architectures	CS/IS	04		03	60	40	100	4
3	17CS73	Machine Learning	CS/IS	04		03	60	40	100	4
4	17CS74x	Professional Elective 3	CS/IS	03		03	60	40	100	3
5	17CS75x	Professional Elective 4	CS/IS	03		03	60	40	100	3
6	17CSL76	Machine Learning Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
7	17CSL77	Web Technology Laboratory with mini project	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CSP78	Project Work Phase–I + Project work Seminar	CS/IS		03	--	--	100	100	2
TOTAL				**Theory:18 hours Practical and Project: 09 hours**		**21**	**420**	**380**	**800**	**24**

Professional Elective-3		**Professional Elective-4**	
17CS741	Natural Language Processing	17CS751	Soft and Evolutionary Computing
17CS742	Cloud Computing and its Applications	17CS752	Computer Vision and Robotics
17CS743	Information and Network Security	17CS753	Digital Image Processing
17CS744	Unix System Programming	17CS754	Storage Area Networks

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1. **Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

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B.E: Computer Science and Engineering

VIII SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS81	Internet of Things and Applications	CS/IS	4	-	3	60	40	100	4
2	17CS82	Big Data Analytics	CS/IS	4	-	3	60	40	100	4
3	17CS83X	Professional Elective-5	CS/IS	3	-	3	60	40	100	3
4	17CS84	Internship/ Professional Practice	CS/IS	Industry Oriented		3	50	50	100	2
5	17CSP85	Project Work-II	CS/IS	-	6	3	100	100	200	6
6	17CSS86	Seminar	CS/IS	-	4	-	-	100	100	1
TOTAL				**Theory: 11 hours Project and Seminar: 10 hours**		**15**	**330**	**370**	**700**	**20**

Professional Elective -5	
17CS831	High Performance Computing
17CS832	User Interface Design
17CS833	Network management
17CS834	System Modeling and Simulation

1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.

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B.E.: Electronics & Communication Engineering

VII SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EC71	Microwave and Antennas	EC	04		03	60	40	100	4
2	17EC72	Digital Image Processing	EC	04		03	60	40	100	4
3	17EC73	Power Electronics	EC	04		03	60	40	100	4
4	17EC74X	Professional Elective-3	EC	03		03	60	40	100	3
5	17EC75X	Professional Elective-4	EC	03		03	60	40	100	3
6	17ECL76	Advanced Communication Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
7	17ECL77	VLSI Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17ECP78	Project Work Phase–I + Project work Seminar	EC		03		-	100	100	2
TOTAL				**Theory:18 hours Practical and Project: 09 hours**		**21**	**420**	**380**	**800**	**24**

Professional Elective-3		**Professional Elective-4**	
17EC741	Multimedia Communication	17EC751	DSP Algorithms and Architecture
17EC742	Biomedical Signal Processing	17EC752	IOT and Wireless Sensor Networks
17EC743	Real Time Systems	17EC753	Pattern Recognition
17EC744	Cryptography	17EC754	Advanced Computer Architecture
17EC745	CAD for VLSI	17EC755	Satellite Communication

1. **Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

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B.E.: Electronics & Communication Engineering

VIII SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EC81	Wireless Cellular and LTE 4G Broadband	EC	4	-	3	60	40	100	4
2	17EC82	Fiber Optics & Networks	EC	4	-	3	60	40	100	4
3	17EC83X	Professional Elective-5	EC	3	-	3	60	40	100	3
4	17EC84	Internship/Professional Practice	EC	Industry Oriented		3	50	50	100	2
5	17ECP85	Project Work	EC	-	6	3	100	100	200	6
6	17ECS86	Seminar	EC	-	4	-	-	100	100	1
TOTAL				**Theory: 11 hours Project and Seminar: 10 hours**		**15**	**330**	**370**	**700**	**20**

Professional Elective -5	
17EC831	Micro Electro Mechanical Systems
17EC832	Speech Processing
17EC833	Radar Engineering
17EC834	Machine learning
17EC835	Network and Cyber Security

1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.

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B.E: ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

VII SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE71	Power System Analysis – 2(Core)	EEE	04		03	60	40	100	4
2	17EE72	Power System Protection(Core)	EEE	04		03	60	40	100	4
3	17EE73	High Voltage Engineering(Core)	EEE	04		03	60	40	100	4
4	17EE74X	Professional Elective – III	EEE	03		03	60	40	100	3
5	17EE75Y	Professional Elective – IV	EEE	03		03	60	40	100	3
6	17EEL76	Power system Simulation Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
7	17EEL77	Rely and High Voltage Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17EEP78	Project Work Phase–I + Project work Seminar	EEE		03	--	--	100	100	2
TOTAL				**Theory:18 hours Practical and Project: 09 hours**		**21**	**420**	**380**	**800**	**24**

Professional Elective-3		**Professional Elective-4**	
17EE741	Advanced Control Systems	17EE751	FACTs and HVDC Transmission
17EE742	Utilization of Electrical Power	17EE752	Testing and Commissioning of Power System Apparatus
17EE743	Carbon Capture and Storage	17EE753	Spacecraft Power Technologies
17EE744	Power System Planning	17EE754	Industrial Heating

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1. **Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

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Scheme of Teaching and Examination 2017-2018
Choice Based Credit System (CBCS)

B.E: ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

VIII SEMESTER

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE81	Power System Operation and Control (Core)	EEE	4	-	3	60	40	100	4
2	17EE82	Industrial Drives and Applications(Core)	EEE	4	-	3	60	40	100	4
3	17EE83X	Professional Elective-5	EEE	3	-	3	60	40	100	3
4	17EE84	Internship/ Professional Practice (Core)	EEE	Industry Oriented		3	50	50	100	2
5	17EEP85	Project Work-II(Core)	EEE	-	6	3	100	100	200	6
6	17EES86	Seminar (Core)	EEE	-	4	-	-	100	100	1
TOTAL				**Theory: 11 hours Project and Seminar: 10 hours**		**15**	**330**	**370**	**700**	**20**

Professional Elective -5	
17EE831	Smart Grid
17EE832	Operation and Maintenance of Solar Electric Systems
17EE833	Integration of Distributed Generation
17EE834	Power System in Emergencies

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1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.

Visvesvaraya Technological University, Belagavi

B.E. in Mechanical Engineering

2017- Scheme of Teaching and Examination

Choice Based Credit System (CBCS)

VII Semester

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	
1	17ME71	Energy Engineering	3	2	0	03	60	40	100	4
2	17ME72	Fluid Power Systems	4	0	0	03	60	40	100	4
3	17ME73	Control Engineering	3	2	0	03	60	40	100	4
4	17ME74X	Professional Elective - III	3	0	0	03	60	40	100	3
5	17ME75X	Professional Elective-IV	3	0	0	03	60	40	100	3
6	17MEL76	Design Lab	1	0	2	03	60	40	100	2
7	17MEL77	CIM Lab	1	0	2	03	60	40	100	2
8	17MEP78	Project Phase – I	-	-	-	-		100	100	2
TOTAL			**18**	**04**	**04**	**21**	**420**	**380**	**800**	**24**

Professional Elective-III		Professional Elective-IV	
17ME741	Design of Thermal Equipment's	17ME751	Automotive Electronics
17ME742	Tribology	17ME752	Fracture Mechanics
17ME743	Financial Management	**17ME753**	**Mechatronics**
17ME744	Design for Manufacturing	**17ME754**	**Advanced Vibrations**
17ME745	Smart Materials & MEMS		

1. **Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of aprogramme in a said discipline of study.
2. **Professional Elective:** Elective relevant to chosen specialization/ branch

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Visvesvaraya Technological University, Belagavi

B.E. in Mechanical Engineering

2017- Scheme of Teaching and Examination

Choice Based Credit System (CBCS)

VIII Semester

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			L	T	P	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	
1	17ME81	Operations Research	3	2	0	03	60	40	100	4
2	17ME82	Additive Manufacturing	4	0	0	03	60	40	100	4
3	17ME83X	Professional Elective - V	3	0	0	03	60	40	100	3
4	17ME84	Internship / Professional Practice	Industry Oriented			03	50	50	100	2
5	17ME85	Project Phase – II	-		6	03	100	100	200	6
6	17MES86	Seminar	-		4	-		100	100	1
TOTAL			**10**	**02**	**10**	**15**	**330**	**370**	**700**	**20**

Professional Elective-V	
15ME831	Cryogenics
15ME832	Experimental Stress Analysis
15ME833	Theory of Plasticity
15ME834	Green Manufacturing
15ME835	Product life cycle management

1. **Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of aprogramme in a said discipline of study.
2. **Professional Elective:** Elective relevant to chosen specialization/ branch
3. **Internship / Professional Practice:** To be carried out between 6th& 7th semester vacation or 7th& 8th semester vacation

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

I SEMESTER B.E./B.TECH.

PHYSICS GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT11	Engineering Maths-I	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15PHY12	Engineering Physics	BS	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV13	Elements of Civil Engg. & Mechanics	ES	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15EME14	Elements of Mechanical Engg.	ES	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE15	Basic Electrical Engg.	ES	E & E	E & E	4 (T)	80	20	100	4
6	15WSL16	Workshop Practice	ES	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHYL17	Engg. Physics Lab	BS	Physics	Basic Sc.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
8	15CPH18	Constitution of India, Professional Ethics and Human Rights (CPH)	MNC	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
						29	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

I SEMESTER B.E./B.TECH.

CHEMISTRY GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT11	Engineering Maths-I	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE12	Engineering Chemistry	BS	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD13	Programming in C & Data Structures	ES	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED14	Computer Aided Engineering Drawing	ES	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2I+ 4P)	80	20	100	4
5	15ELN15	Basic Electronics	ES	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL16	Computer Programming Lab	ES	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHEL17	Engg. Chemistry Lab	BS	Chemistry	Basic Sci.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV18	Environmental Studies	MNC	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
					Total	31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

III SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15MAT31	Core Subject	Engineering Mathematics-III	Mathematics	04	--	03	20	80	100	4
2	15EE32	Core Subject	Electric Circuit Analysis	EEE	04	--	03	20	80	100	4
3	15EE33	Core Subject	Transformers and Generators	EEE	04	--	03	20	80	100	4
4	15EE34	Core Subject	Analog Electronic Circuits	EEE	04	--	03	20	80	100	4
5	15EE35	Core Subject	Digital System Design	EEE	04	--	03	20	80	100	4
6	15EE36	Foundation Course	Electrical and Electronic Measurements	EEE	04	--	03	20	80	100	4
7	15EEL37	Laboratory	Electrical Machines Laboratory -1	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEL38	Laboratory	Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
				TOTAL	**Theory:24 hours Practical: 06 hours**		**24**	**160**	**640**	**800**	**28**

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. FoundationCourse: The courses based upon the content that leads to Knowledge enhancement.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

III SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics - III	04	--	03	80	20	100	4
2	15CS32	Analog and Digital Electronics	04	--	03	80	20	100	4
3	15CS33	Data Structures and Applications	04	--	03	80	20	100	4
4	15CS34	Computer Organization	04	--	03	80	20	100	4
5	15CS35	Unix and Shell Programming	04	--	03	80	20	100	4
6	15CS36	Discrete Mathematical Structures	04	--	03	80	20	100	4
7	15CSL37	Analog and Digital Electronics Laboratory	--	1I+2P	03	80	20	100	2
8	15CSL38	Data Structures Laboratory	--	1I+2P	03	80	20	100	2
TOTAL			**24**	**6**	**24**	**640**	**160**	**800**	**28**

Note: 'I' Stands for Instruction Hours and 'P' for practical Hours

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CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics - IV	04	--	03	80	20	100	4
2	15CS 42	Software Engineering	04	--	03	80	20	100	4
3	15CS43	Design and Analysis of Algorithms	04	--	03	80	20	100	4
4	15CS 44	Microprocessors and Microcontrollers	04	--	03	80	20	100	4
5	15CS45	Object Oriented Concepts	04	--	03	80	20	100	4
6	15CS46	Data Communication	04	--	03	80	20	100	4
7	15CSL47	Design and Analysis of Algorithm Laboratory	--	1I+2P	03	80	20	100	2
8	15CSL48	Microprocessors Laboratory	--	1I+2P	03	80	20	100	2
TOTAL			24	06	24	640	160	800	28

Note: 'I' Stands for Instruction Hours and 'P' for practical Hours

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SCHEME OF TEACHING AND EXAMINATION

B.E Electronics & Communication Engineering / Telecommunication Engineering

(Common to Electronics & Communication and Telecommunication Engineering)

III SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics –III*	04		03	80	20	100	4
2	15EC32	Analog Electronics	04		03	80	20	100	4
3	15EC33	Digital Electronics	04		03	80	20	100	4
4	15EC34	Network Analysis	04		03	80	20	100	4
5	15EC35	Electronic Instrumentation	04		03	80	20	100	4
6	15EC36	Engineering Electromagnetics	04		03	80	20	100	4
7	15ECL37	Analog Electronics Lab		1I+2P	03	80	20	100	2
8	15ECL38	Digital Electronics Lab		1I+2P	03	80	20	100	2
TOTAL			**24**	**6**	**24**	**640**	**160**	**800**	**28**

*Additional course for Lateral entry students only:

1	15MATDIP31	Additional Mathematics - I	03		03	80	--	80	--

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SCHEME OF TEACHING AND EXAMINATION
B.E Electronics & Communication Engineering / Telecommunication Engineering
(Common to Electronics & Communication and Telecommunication Engineering)

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical / Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics –IV*	04		03	80	20	100	4
2	15EC42	Microprocessor	04		03	80	20	100	4
3	15EC43	Control Systems	04		03	80	20	100	4
4	15EC44	Signals and Systems	04		03	80	20	100	4
5	15EC45	Principles of Communication Systems	04		03	80	20	100	4
6	15EC46	Linear Integrated Circuits	04		03	80	20	100	4
7	15ECL47	Microprocessor Lab		1I+2P	03	80	20	100	2
8	15ECL48	Linear ICs and Communication Lab		1I+2P	03	80	20	100	2
TOTAL			**24**	**06**	**24**	**640**	**160**	**800**	**28**

*Additional course for Lateral entry students only:

1	15MATDIP41	Additional Mathematics - II	03		03	80	--	80	--

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SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

III SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15MAT31	Core Subject	Engineering Mathematics-III	Mathematics	04	--	03	20	80	100	4
2	15EE32	Core Subject	Electric Circuit Analysis	EEE	04	--	03	20	80	100	4
3	15EE33	Core Subject	Transformers and Generators	EEE	04	--	03	20	80	100	4
4	15EE34	Core Subject	Analog Electronic Circuits	EEE	04	--	03	20	80	100	4
5	15EE35	Core Subject	Digital System Design	EEE	04	--	03	20	80	100	4
6	15EE36	Foundation Course	Electrical and Electronic Measurements	EEE	04	--	03	20	80	100	4
7	15EEL37	Laboratory	Electrical Machines Laboratory -1	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEL38	Laboratory	Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
				TOTAL	**Theory:24 hours Practical: 06 hours**		**24**	**160**	**640**	**800**	**28**

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. FoundationCourse: The courses based upon the content that leads to Knowledge enhancement.

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SCHEME OF TEACHING AND EXAMINATION - 2015-16
B.E. ELECTRICAL AND ELECTRONICS ENGINEERING
CHOICE BASED CREDIT SYSTEM (CBCS)

IVSEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15MAT41	Core Subject	Engineering Mathematics-IV	Math - matics	04	--	03	20	80	100	4
2	15EE42	Core Subject	Power Generation and Economics	EEE	04	--	03	20	80	100	4
3	15EE 43	Core Subject	Transmission and Distribution	EEE	04	--	03	20	80	100	4
4	15EE 44	Core Subject	Electric Motors	EEE	04	--	03	20	80	100	4
5	15EE 45	Core Subject	Electromagnetic Field Theory	EEE	04	--	03	20	80	100	4
6	15EE 46	Foundation Course	Operational Amplifiers and Linear ICs	EEE	04	--	03	20	80	100	4
7	15EE L47	Laboratory	Electrical Machines Laboratory -2	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEL48	Laboratory	Op- amp and Linear ICs Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
				TOTAL	**Theory:24 hours Practical: 06 hours**		**24**	**160**	**640**	**800**	**28**

Number of credits completed at the end of IV semester: 24 + 24 + 28 +28 = 104

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
2. Foundation Course: The courses based upon the content that leads to Knowledge enhancement.

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IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics – III	04			03	80	20	100	04
2	15ME42	Kinematics of Machinery	03	02		03	80	20	100	04
3	15ME43	Applied Thermodynamics	03	02		03	80	20	100	04
4	15ME44	Fluid mechanics	03	02		03	80	20	100	04
5	15ME45A/ 15ME45B	Metal Casting and Welding / Machine Tools and Operations	04			03	80	20	100	04
6	15ME46 A/ 15ME46B	Computer Aided Machine Drawing	02		4	03	80	20	100	03
		Mechanical Measurements and Metrology	04							
7	15MEL47A / 15MEL47B	Materials Testing Lab/ Mechanical Measurements and Metrology Lab	1		2	03	80	20	100	02
8	15MEL48A / 15MEL48B	Foundry and Forging Lab / Machine Shop/	1		2	03	80	20	100	02
TOTAL			**19/21**	**06**	**08/04**		**640**	**160**	**800**	**27**

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

V SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15CV51	Design of RC Structural Elements	04		03	80	20	100	4
2	15CV52	Analysis of Indeterminate Structures	04		03	80	20	100	4
3	15CV53	Applied Geotechnical Engineering	04		03	80	20	100	4
4	15CV54	Computer Aided Building Planning and Drawing	01	3D	03	80	20	100	4
5	15CV55X	Professional Elective-1	03		03	80	20	100	3
6	15CV56X	Open Elective-1	03		03	80	20	100	3
7	15CVL57	Geotechnical Engineering Laboratory		1I+2P	03	80	20	100	2
8	15CVL58	Concrete and Highway Materials Laboratory		1I+2P	03	80	20	100	2
		TOTAL	**19**	**09**	**24**	**640**	**160**	**800**	**26**

Professional Elective 1		**Open Elective 1**	
15CV551	Air pollution and Control	15CV561	Traffic Engineering
15CV552	Railways, Harbours, tunneling and Airports	15CV562	Sustainability Concepts in Engineering
15CV553	Masonry Structures	15CV563	Remote Sensing and GIS
15CV554	Theory of Elasticity	15CV564	Occupational Health and Safety
		15NC565	NCC

1. **Professional Elective:** Elective relevant to chosen specialization/ branch
2. **Open Elective**: Electives from other technical and/or emerging subject areas

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CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

VI SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15CV61	Construction Management and Entrepreneurship	04		03	80	20	100	4
2	15CV62	Design of Steel Structural Elements	04		03	80	20	100	4
3	15CV63	Highway Engineering	04		03	80	20	100	4
4	15CV64	Water Supply and Treatment Engineering	04		03	80	20	100	4
5	15CV65X	Professional Elective 2	03		03	80	20	100	3
6	15CV66X	Open Elective 2	03		03	80	20	100	3
7	15CVL67	Software Application Lab		1I+2P	03	80	20	100	2
8	15CVP68	Extensive Survey Project /Camp		1I+2P	03	80	20	100	2
TOTAL			**22**	**6**	**24**	**640**	**160**	**800**	**26**

Professional Elective-2		**Open Elective-2**	
15CV651	Solid Waste Management	15CV661	Water Resource Management
15CV652	Matrix Method of Structural Analysis	15CV662	Environmental Protection and Management
15CV653	Alternative Building Materials	15CV663	Numerical Methods and applications
15CV654	Ground Improvement Techniques	15CV664	Finite Element Analysis

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	**15CS51**	Management and Entrepreneurship for IT Industry	04	--	03	80	20	100	4
2	**15CS52**	Computer Networks	04	--	03	80	20	100	4
3	**15CS53**	Database Management System	04	--	03	80	20	100	4
4	**15CS54**	Automata theory and Computability	04	--	03	80	20	100	4
5	**15CS55x**	Professional Elective 1	03	--	03	80	20	100	3
6	**15CS56x**	Open Elective 1	03	--	03	80	20	100	3
7	**15CSL57**	Computer Network Laboratory	--	1I+2P	03	80	20	100	2
8	**15CSL58**	DBMS Laboratory with mini project	--	1I+2P	03	80	20	100	2
TOTAL			**22**	**6**	**24**	**640**	**160**	**800**	**26**

Professional Elective 1	
15CS551	Object Oriented Modeling and Design
15CS552	Introduction to Software Testing
15CS553	Advanced JAVA and J2EE
15CS554	Advanced Algorithms

1. **Professional Elective: Electives relevant to chosen specialization / branch**
2. **Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)**

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ATME College of Engineering
13th KM Mysuru-Kanakapura-Bangalore Road
Mallahalli Mysuru-570 028

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CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016
B.E. Computer Science & Engineering

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	**15CS61**	Cryptography, Network Security and Cyber Law	04	--	03	80	20	100	4
2	**15CS62**	Computer Graphics and Visualization	04	--	03	80	20	100	4
3	**15CS63**	System Software and Compiler Design	04	--	03	80	20	100	4
4	**15CS64**	Operating Systems	04	--	03	80	20	100	4
5	**15CS65x**	Professional Elective 2	03	--	03	80	20	100	3
6	**15CS66x**	Open Elective 2	03	--	03	80	20	100	3
7	**15CSL67**	System Software and Operating System Laboratory	--	1I+2P	03	80	20	100	2
8	**15CSL68**	Computer Graphics Laboratory with mini project	--	1I+2P	03	80	20	100	2
TOTAL			**22**	**6**	**24**	**640**	**160**	**800**	**26**

Professional Elective 2	
15CS651	Data Mining and Data Warehousing
15CS652	Software Architecture and Design Patterns
15CS653	Operations research
15CS654	Distributed Computing system

1. **Professional Elective: Electives relevant to choosen specialization / branch**
2. **Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)**

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SCHEME OF TEACHING AND EXAMINATION
B.E.: Electronics & Communication Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical /Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ES51	Management and Entrepreneurship Development	04		03	80	20	100	4
2	15EC52	Digital Signal Processing	04		03	80	20	100	4
3	15EC53	Verilog HDL	04		03	80	20	100	4
4	15EC54	Information Theory & Coding	04		03	80	20	100	4
5	15EC55X	Professional Elective-1	03		03	80	20	100	3
6	15EC56X	Open Elective-1	03		03	80	20	100	3
7	15ECL57	DSP Lab		1I+2P	03	80	20	100	2
8	15ECL58	HDL Lab		1I+2P	03	80	20	100	2
TOTAL			**22**	**06**	**24**	**640**	**160**	**800**	**26**

Professional Elective-1			**Open Elective – 1* (List offered by EC/TC Board only)**	
15EC551	Nanoelectronics		15EC561	Automotive Electronics
15EC552	Switching & Finite Automata Theory		15EC562	Object Oriented Programming Using C++
15EC553	Operating System		15EC563	8051 Microcontroller
15EC554	Electrical Engineering Materials			
15EC555	MSP430 Microcontroller			

1. **Professional Elective:** Elective relevant to chosen specialization/ branch.
2. *** Open Elective List**: For other Open Electives offered by other Boards, refer the Scheme of other Boards or Consolidated list in VTU Website.

SCHEME OF TEACHING AND EXAMINATION
B.E.: Electronics & Communication Engineering

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15EC61	Digital Communication	04		03	80	20	100	4
2	15EC62	ARM Microcontroller & Embedded Systems	04		03	80	20	100	4
3	15EC63	VLSI Design	04		03	80	20	100	4
4	15EC64	Computer Communication Networks	04		03	80	20	100	4
5	15EC65X	Professional Elective-2	03		03	80	20	100	3
6	15EC66X	Open Elective-2	03		03	80	20	100	3
7	15ECL67	Embedded Controller Lab		1I+2P	03	80	20	100	2
8	15ECL68	Computer Networks Lab		1I+2P	03	80	20	100	2
TOTAL			**22**	**6**	**24**	**640**	**160**	**800**	**26**

Professional Elective-2			**Open Elective – 2* (List offered by EC/TC Board only)**	
15EC651	Cellular Mobile Communication		15EC661	Data Structures Using C++
15EC652	Adaptive Signal Processing		15EC662	Power Electronics
15EC653	Artificial Neural Networks		15EC663	Digital System Design using Verilog
15EC654	Digital Switching Systems			
15EC655	Microelectronics			

1. **Professional Elective:** Elective relevant to chosen specialization/branch.
2. *** Open Elective List**: For other Open Electives offered by other Boards, refer the Scheme of other Boards or Consolidated list in VTU Website.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

V SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15EE51	Core Subject	Management and Entrepreneurship	EEE	04	--	03	80	20	100	4
2	15EE52	Core Subject	Microcontroller	EEE	04	--	03	80	20	100	4
3	15EE53	Core Subject	Power Electronics	EEE	04	--	03	80	20	100	4
4	15EE54	Core Subject	Signals and Systems	EEE	04	--	03	80	20	100	4
5	15EE55X	Professional Elective	Professional Elective – I	EEE	03	--	03	80	20	100	3
6	15EE56Y	Open Elective	Open Elective - I	EEE	03	--	03	80	20	100	3
7	15EEL57	Laboratory	Microcontroller Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
8	15EEL58	Laboratory	Power Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
			TOTAL		**Theory:22hours Practical: 06 hours**		**24**	**160**	**640**	**800**	**26**

Elective

Professional Elective		**Open Elective*** Offered by the Department of Electrical and Electronics Engineering**	
Courses under Code 15EE55X	**Title**	**Courses under Code 15EE55X**	**Title**
15EE551	Introduction to Nuclear Power	15EE561	Electronic Communication systems
15EE552	Electrical Engineering Materials	15EE562	Programmable Logic controllers
15EE553	Estimating and Costing	15EE563	Renewable Energy Systems
15EE554	Special Electrical Machines	15EE564	Business Communication

*** Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives). Selection of an open elective is not allowed provided;

- The candidate has pre – requisite knowledge.
- The candidate has not studied during I and II year 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.

Registration to electives shall be documented under the guidance of Programme Coordinator and Adviser.

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. Professional Elective: Electives relevant to chosen specialization/ branch.

3. Open Elective: Electives from other technical and/ or emerging subject areas.

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SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

VI SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15EE61	Core Subject	Control Systems	EEE	04	--	03	80	20	100	4
2	15EE62	Core Subject	Power System Analysis – 1	EEE	04	--	03	80	20	100	4
3	15EE63	Core Subject	Digital Signal Processing	EEE	04	--	03	80	20	100	4
4	15EE64	Core Subject	Electrical Machine Design	EEE	04	--	03	80	20	100	4
5	15EE65X	Professional Elective	Professional Elective – II	EEE	03	--	03	80	20	100	3
6	15EE66Y	Open Elective	Open Elective - II	EEE	03	--	03	80	20	100	3
7	15EEL67	Laboratory	Control System Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
8	15EEL68	Laboratory	Digital Signal Processing Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
			TOTAL		**Theory:22 hours Practical: 06 hours**		**24**	**160**	**640**	**800**	**26**

Elective

Professional Elective		**Open Elective*** Offered by the Department of Electrical and Electronics Engineering**	
Courses under Code 15EE65X	**Title**	**Courses under Code 15EE66Y**	**Title**
15EE651	Computer Aided Electrical Drawing	15EE661	Artificial Neural Networks and Fuzzy logic
15EE652	Advanced Power Electronics	15EE662	Sensors and Transducers
15EE653	Energy Audit and Demand side Management	15EE663	Batteries and Fuel Cells for Commercial, Military and Space Applications
15EE654	Solar and Wind Energy	15EE664	Industrial Servo Control Systems

*** Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives). Selection of an open elective is not allowed provided;

- The candidate has pre – requisite knowledge.
- The candidate has not studied during I and II year 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.

Registration to electives shall be documented under the guidance of Programme Coordinator and Adviser.

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. Professional Elective: Electives relevant to chosen specialization/ branch.

3. Open Elective: Electives from other technical and/ or emerging subject areas.

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B.E. Mechanical Engineering

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME61	Finite Element Analysis	3	2	0	03	80	20	100	4
2	15ME62	Computer integrated Manufacturing	4	0	0	03	80	20	100	4
3	15ME63	Heat Transfer	3	2	0	03	80	20	100	4
4	15ME64	Design of Machine Elements -II	3	2	0	03	80	20	100	4
5	15ME65X	Professional Elective-II	3	0	0	03	80	20	100	3
6	15ME66X	Open Elective-II	3	0	0	03	80	20	100	3
7	15MEL67	Heat Transfer Lab	1	0	2	03	80	20	100	2
8	15MEL68	Modeling and Analysis Lab(FEA)	1	0	2	03	80	20	100	2
TOTAL			**21**	**6**	**04**		**640**	**160**	**800**	**26**

Professional Elective-II		Open Elective-II	
15ME651	Computational Fluid Dynamics	15ME661	Energy Auditing
15ME652	Mechanics of Composite Materials	15ME662	Industrial Safety
15ME653	Metal Forming	15ME663	Maintenance Engineering
15ME654	Tool Design	15ME664	Total Quality Management
15ME655	Automobile Engineering		

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1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. Professional Elective: Elective relevant to chosen specialization/ branch

3. OpenElective: Electives from other technical and/or emerging subject areas.

B.E. Mechanical Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME51	Management and Engineering Economics	3	2	0	03	80	20	100	4
2	15ME52	Dynamics of Machinery	3	2	0	03	80	20	100	4
3	15ME53	Turbo Machines	3	2	0	03	80	20	100	4
4	15ME54	Design of Machine Elements - I	3	2	0	03	80	20	100	4
5	15ME55X	Professional Elective-I	3	0	0	03	80	20	100	3
6	15ME56X	Open Elective-I	3	0	0	03	80	20	100	3
7	15MEL57	Fluid Mechanics & Machinery Lab	1	0	2	03	80	20	100	2
8	15MEL58	Energy Lab	1	0	2	03	80	20	100	2
TOTAL			**21**	**06**	**04**		**640**	**160**	**800**	**26**

Professional Elective-I		Open Elective-I	
15ME551	Refrigeration and Air-conditioning	15ME561	Optimization Techniques
15ME552	Theory of Elasticity	15ME562	Energy and Environment
15ME553	Human Resource Management	15ME563	Automation and Robotics
15ME554	Non Traditional Machining	15ME564	Project Managemet

1. **Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
2. **Professional Elective:** Elective relevant to chosen specialization/ branch
3. **OpenElective**: Electives from other technical and/or emerging subject areas.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

VII SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV71	Municipal and Industrial Waste Water Engineering	04		03	20	80	100	4
2	15CV72	Design of RCC and Steel Structures	04		03	20	80	100	4
3	15CV73	Hydrology and Irrigation Engineering	04		03	20	80	100	4
4	15CV74X	Professional Elective 3	03		03	20	80	100	3
5	15CV75X	Professional Elective 4	03		03	20	80	100	3
6	15CVL76	Environmental Engineering Laboratory		1I+2P	03	20	80	100	2
7	15CVL77	Computer Aided Detailing of Structures		1I+2D	03	20	80	100	2
8	15CVP78	Project Phase I +Project Seminar		3		100		100	2
TOTAL			**18**	**9**	**21**	**240**	**560**	**800**	**24**

Professional Elective 3		**Professional Elective 4**	
15CV741	Design of Bridges	15CV751	Urban Transportation and Planning
15CV742	Ground Water & Hydraulics	15CV752	Prefabricated Structures
15CV743	Design Concept of Building Services	15CV753	Rehabilitation and Retrofitting of Structures
15CV744	Structural Dynamics	15CV754	Reinforced Earth Structures

1. Project Phase-I + Seminar: Literature Survey, Problem Identification, objectives and Methodology, Submission of synopsis and seminar

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SCHEME OF TEACHING AND EXAMINATION 2015-2016
B.E. CIVIL ENGINEERING

VIII SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV81	Quantity Surveying and Contracts Management	4	-	3	20	80	100	4
2	15CV82	Design of Pre Stressed Concrete Elements	4	-	3	20	80	100	4
3	15CV83X	Professional Elective 5	3	-	3	20	80	100	3
4	15CV84	Internship/Professional Practice	Industry Oriented		3	50	50	100	2
5	15CVP85	Project Work	-	6	3	100	100	200	6
6	15CVS86	Seminar on current trends in Engineering and Technology	-	4	-	100	-	100	1
TOTAL			**11**	**10**	**15**	**310**	**390**	**700**	**20**

Professional Elective 5	
15CV831	Earthquake Engineering
15CV832	Hydraulic Structures
15CV833	Pavement Design
15CV834	Advanced Foundation Design

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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

VII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CS71	Web Technology and its applications	04	--	03	20	80	100	4
2	15CS72	Advanced Computer Architectures	04	--	03	20	80	100	4
3	15CS73	Machine Learning	04	--	03	20	80	100	4
4	15CS74x	Professional Elective 3	03	--	03	20	80	100	3
5	15CS75x	Professional Elective 4	03	--	03	20	80	100	3
6	15CSL76	Machine Learning Laboratory	--	1I+2P	03	20	80	100	2
7	15CSL77	Web Technology Laboratory with mini project	--	1I+2P	03	20	80	100	2
8	15CSP78	Project Phase 1 + Seminar	--	--	--	100	--	100	2
TOTAL			18	6	21	240	560	800	24

Professional Elective 3		Professional Elective 4	
15CS741	Natural Language Processing	15CS751	Soft and Evolutionary Computing
15CS742	Cloud Computing and its Applications	15CS752	Computer Vision and Robotics
15CS743	Information and Network Security	15CS753	Digital Image Processing
15CS744	Unix System Programming	15CS754	Storage Area Networks

1. Professional Elective: Electives relevant to choosen specialization / branch
2. Project Phase 1 + Seminar : Literature Survey, Problem Identification, Objectives and Methodology, Submission of Synopsis and Seminar

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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

VIII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CS81	Internet of Things and Applications	4	--	3	20	80	100	4
2	15CS82	Big Data Analytics	4	--	3	20	80	100	4
3	15CS83x	Professional Elective 5	3	--	3	20	80	100	3
4	15CS84	Internship / Professional Practice	Industry Oriented		3	50	50	100	2
5	15CSP85	Project work phase II	--	6	3	100	100	200	5
6	15CSS86	Seminar	--	4	--	100	--	100	2
TOTAL			11	10	15	310	390	700	20

Professional Elective 5	
15CS831	High Performance Computing
15CS832	User Interface Design
15CS833	Network management
15CS834	System Modeling and Simulation

1. Professional Elective: Electives relevant to chosen specialization / branch
2. Internship / Professional Practice: To be carried out between 6th and 7th semester vacation or 7th and 8th semester vacation period

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SCHEME OF TEACHING AND EXAMINATION
B.E.: Electronics & Communication Engineering

VII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				15EC
			Theory	Practical/Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15EC71	Microwave and Antennas	04		03	20	80	100	4
2	15EC72	Digital Image Processing	04		03	20	80	100	4
3	15EC73	Power Electronics	04		03	20	80	100	4
4	15XX74X	Professional Elective-3	03		03	20	80	100	3
5	15EC75X	Professional Elective-4	03		03	20	80	100	3
6	15ECL76	Advanced Communication Lab		1I+2P	03	20	80	100	2
7	15ECL77	VLSI Lab		1I+2P	03	20	80	100	2
8	15ECP78	Project Work Phase–I + Project work Seminar		03		100	-	100	2
TOTAL			**18**	**09**	**21**	**240**	**560**	**800**	**24**

Professional Elective-3		**Professional Elective-4**	
15EC741	Multimedia Communication	15EC751	DSP Algorithms and Architecture
15EC742	Biomedical Signal Processing	15EC752	IoT and Wireless Sensor Networks
15EC743	Real Time Systems	15EC753	Pattern Recognition
15EC744	Cryptography	15EC754	Advanced Computer Architecture
15EC745	CAD for VLSI	15EC755	Satellite Communication

1. **Project Phase –I + Project Work Seminar:** Literature Survey, Problem Identification, Objectives and Methodology. Submission of Synopsis and Seminar.

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SCHEME OF TEACHING AND EXAMINATION
B.E.: Electronics & Communication Engineering

VIII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15EC81	Wireless Cellular and LTE 4G Broadband	4	-	3	20	80	100	4
2	15EC82	Fiber Optics & Networks	4	-	3	20	80	100	4
3	15EC83X	Professional Elective-5	3	-	3	20	80	100	3
4	15EC84	Internship/Professional Practice	Industry Oriented		3	50	50	100	2
5	15ECP85	Project Work	-	6	3	100	100	200	6
6	15ECS86	Seminar	-	4	-	100	-	100	1
TOTAL			**11**	**10**	**15**	**310**	**390**	**700**	**20**

Professional Elective -5	
15EC831	Micro Electro Mechanical Systems
15EC832	Speech Processing
15EC833	Radar Engineering
15EC834	Machine learning
15EC835	Network and Cyber Security

1. Internship / Professional Practice: To be carried between the (6th and 7th Semester) or (7th and 8th) Semester Vacation period.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

VII SEMESTER

Sl. No	Course Code	Subject (Course)	Title	Teaching Department	Teaching Hours/Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15EE71	Core Subject	Power System Analysis - 2	EEE	04	--	03	20	80	100	4
2	15EE72	Core Subject	Power System Protection	EEE	04	--	03	20	80	100	4
3	15EE73	Core Subject	High Voltage Engineering	EEE	04	--	03	20	80	100	4
4	15EE74X	Professional Elective	Professional Elective – III	EEE	04	--	03	20	80	100	3
5	15EE75Y	Professional Elective	Professional Elective – IV	EEE	04	--	03	20	80	100	3
6	15EEL76	Laboratory	Power system Simulation Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
7	15EEL77	Laboratory	Rely and High Voltage Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEP78	Project Phase – I + Seminar		EEE	--		--	100	--	100	2
			TOTAL		**Theory:24 hours Practical: 06 hours**		**21**	**240**	**560**	**800**	**24**

Elective

Professional Elective – III		**Professional Elective – IV**	
Courses under Code 15EE74X	**Title**	**Courses under Code 15EE75Y**	**Title**
15EE741	Advanced Control Systems	15EE751	FACTs and HVDC Transmission
15EE742	Utilization of Electrical Power	15EE752	Testing and Commissioning of Power System Apparatus
15EE743	Carbon Capture and Storage	15EE753	Spacecraft Power Technologies
15EE744	Power System Planning	15EE754	Industrial Heating

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. Professional Elective: Elective relevant to chosen specialization/ branch.

3. Project Phase –I + Seminar: Literature Survey, Problem Identification, objectives and Methodology. Submission of synopsis and seminar.

4. Internship / Professional Practice: To be carried between the VI and VIIsemester vacation or VII and VIII semester vacation period.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

VIII SEMESTER

Sl. No	Course Code	Subject (Course)	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15EE81	Core Subject	Power System Operation and Control	EEE	04	--	03	20	80	100	4
2	15EE82	Core Subject	Industrial Drives and Applications	EEE	04	--	03	20	80	100	4
3	15EE83X	Professional Elective	Professional Elective – V	EEE	03	--	03	20	80	100	3
4	15EE84	Core Subject	Internship / Professional Practice	EEE	Industry Oriented		03	50	50	100	2
5	15EEP85	Core Subject	Project Work Phase -II	EEE	--	06	03	100	100	200	6
6	15EES86	Core Subject	Seminar	EEE	--	04	--	100	--	100	1
				TOTAL	**Theory:11 hours Practical: 10 hours**		**15**	**310**	**390**	**700**	**20**

Professional Elective – V

Courses under Code 15EE83X	Title
15EE831	Smart Grid
15EE832	Operation and Maintenance of Solar Electric Systems
15EE833	Integration of Distributed Generation
15EE834	Power System in Emergencies

1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

2. Professional Elective: Elective relevant to chosen specialization/ branch.

3. Internship / Professional Practice: To be carried between the VI and VIIsemester vacation or VII and VIII semester vacation period.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Mechanical Engineering

VIII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME81	Operations Research	3	2	0	03	80	20	100	4
2	15ME82	Additive Manufacturing	4	0	0	03	80	20	100	4
3	15ME83X	Professional Elective - V	3	0	0	03	80	20	100	3
4	15ME84	Internship / Professional Practice	Industry Oriented			03	50	50	100	2
5	15ME85	Project Phase – II	-	6	-	03	100	100	200	6
6	15MES86	Seminar	-	4	-	-	-	100	100	1
TOTAL			**10**	**12**	**-**		**390**	**310**	**700**	**20**

Professional Elective-V	
15ME831	Cryogenics
15ME832	Experimental Stress Analysis
15ME833	Theory of Plasticity
15ME834	Green Manufacturing
15ME835	Product life cycle management

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1. **Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
2. **Professional Elective:** Elective relevant to chosen specialization/ branch
3. **Internship / Professional Practice:** To be carried out between 6^{th}& 7^{th} semester vacation or 7^{th}& 8^{th} semester vacation.