### VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Outcome Based Education(OBE) and Choice Based Credit System (CBCS) Scheme of Teaching and Examination 2018-19

(Effective from the academic year 2018-19)

		Credits		4	4	3	3	3	-	1	-	20	
		otal Marks	L	100	001	100	100	100	100	100	100	800	
	Examination	EE Marks	S	09	09	09	09	09	09	09	09	480	ses.
	Exami	CIE Marks	)	40	40	40	40	40	40	40	40	320	nt Cour
		ouration in hours	I	03	03	03	03	03	03	03	03	24	nageme
	s eek	Practical/ Brawing	Ь	1	-	1	1	2	2	2	1	90	and Mai
	Teaching Hours /Week	IsirotuT	Т	2	2	2	2	1	1	1	2	10	ience s
GRO	Ho	Треогу Гестиге	Т	3	3	2	2	2	1	1	-	12	ocial Sc
h (PHYSICS	S	Paper Settin Board		Maths	Physics	E and E Engineering	Civil Engineering	Mechanical Engineering	Physics	E and E Engineering	Humanities	TOTAL	C: Humanity, S
I SEMESTER B.E./B.Tech (PHYSICS GROUP)	1	Теасһіпg Ператітеп		Mathematics	Physics	E and E Engineering	Civil Engineering	ME, Auto, IP, IEM, Mfg Engineering	Physics	E and E Engineering	Humanities		ce Courses, HSM
I SEMEST		Course Title		Calculus and Linear Algebra	Engineering Physics	Basic Electrical Engineering	Elements of Civil Engineering and Mechanics	Engineering Graphics	Engineering Physics Laboratory	Basic Electrical Engineering Laboratory	Technical English-I		Note: BSC: Basic Science Courses, ESC: Engineering Science Courses, HSMC: Humanity, Social Science and Management Courses.
		Course and Course Code		18MAT11	18PHY12	18ELE13	18CIV14	18EGDL15	18PHYL16	18ELEL17	18EGH18		ic Science Cours
		Con		BSC	BSC	ESC	ESC	ESC	BSC	ESC	HSMC		: BSC: Basi
		Si.		_	2	3	4	5	9	7	∞		Note

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.

Definition of 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)

	Credits		4	4	3	33	ю	-	-	1	20			
	otal Marks	L	100	100	100	100	100	100	100	100	800			
nation	SEE Marks	S	09	09	09	09	09	09	09	09	480	ses.		
Exami	CIE Marks	)	40	40	40	40	40	40	40	40	320	nt Cours		
	Ouration in hours	I	03	03	03	03	03	03	03	03	24	nagemei		
s eek	Practical/ gniward	Ь	1	1	ı	1	;	2	2	-	94	and Mai		
eaching urs /W	Tutorial	Τ	2	2	2	2	2	1	1	2	12	ience a		
0H	Треогу Гестиге	Г	3	3	2	2	2	1	ŀ	1	12	social Sc	; ;	reant.
8	Paper Settin Board		Mathematics	Chemistry	Computer Science and Engineering	E and C Engineering	Mechanical Engineering	Chemistry	Computer Science and Engineering	Humanities	TOTAL	MC: Humanity, S	t it	ber semester – ı 🔾
,	gnidəsəT Departmen		Mathematics	Chemistry	Computer Science and Engineering	ECE/E and I/ TC	ME, Auto, IP, IEM, Mfg Engineering	Chemistry	Computer Science and Engineering	Humanities		ence Courses, HS	emester =1 Credi	ing (r) per week
	Course Title		Calculus and Linear Algebra	Engineering Chemistry	C Programming for Problem Solving	Basic Electronics	Elements of Mechanical Engineering	Engineering Chemistry Laboratory	C Programming Laboratory	Technical English-I		ses, ESC: Engineering Scie	Lecture (L) per week per s Tutorial (T) per week per s	Practical/Laboratory/Diaw
	rse and		18MAT11	18CHE12	18CPS13	18ELN14	18ME15	18CHEL16	18CPL17	18EGH18		ic Science Cour	edit: 2 hour	mon 7
	Com		BSC	BSC	ESC	ESC	ESC	BSC	ESC	HSMC		:: BSC: Basi	nition of Cr	
	SI.		-	2	3	4	S	9	7	8		Note	Defi	
		Course and Course Title  Course Code  Course	Course and Course Title  Course Code  Course Code  Course Code  Course Code  Theory  Paper Setting  Theory  Th	Course Code  Course Title  Theory  The	Course and Course Title	Course and Course Title	Course and Course Title	Course and Course Title	Course and Course Title         Course Title         Earlier Line         Respect title         Theoritary Line         Theoritary	Course and Course Title	Course and Course Title	Course and Course Title         Course Title         Egge page of the pag	Course and Course Title   Course Title   Course Title   Course Title   Course Title   Course Code   Course   Course Code   Course   Course	88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

### 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)

		Credits		4	4	3	3	3	-	1	-	20
		otal Marks	Т	100	100	100	100	100	100	100	100	800
	nation	EE Marks	s	09	09	09	09	09	09	09	09	480
	Examination	CIE Marks	)	40	40	40	40	40	40	40	40	320
		ni noiteruO eruon	1	03	03	03	03	03	03	03	03	24
	g eek	Vractical/ gniward	Ь	1	1	1	1	2	2	2	1	90
(MI)	Teaching Hours /Week	IsirotuT	T	2	2	2	2	ŀ	1	1	2	10
SGRC	OH Ho	Треогу Гестиге	Г	3	3	2	2	2	1	1	1	12
II SEMESTER B.E./B.Tech (PHYSICS GROUP)	S	Paper Settin Board		Mathematics	Physics	E and E Engineering	Civil Engineering	Mechanical Engineering	Physics	E and E Engineering	Humanities	TOTAL
TER B.E./B.T	1	gnidəsəT Desertmen		Mathematics	Physics	E and E Engineering	Civil Engineering	ME, Auto, IP, IEM, Mfg Engineering	Physics	E and E Engineering	Humanities	
II SEMES		Course Title		Advanced Calculus and Numerical Methods	Engineering Physics	Basic Electrical Engineering	Elements of Civil Engineering and Mechanics	Engineering Graphics	Engineering Physics Laboratory	Basic Electrical Engineering Laboratory	Technical English—II	
		Course and Course Code		18MAT21	18PHY22	18ELE23	18CIV24	18EGDL25	18PHYL26	18ELEL27	18EGH28	
		Cou		BSC	BSC	ESC	ESC	ESC	BSC	ESC	HSMC	
		Si.		1	2	3	4	S	9	7	∞	

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.

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

		Credits		4	4	ж	3	33	1	1	-	20
		otal Marks	L	100	100	100	100	100	100	100	100	800
	Examination	EE Marks	S	09	09	09	09	09	09	60	09	480
	Exami	SIE Marks	)	40	40	40	40	40	40	40	40	320
		ni noiteru( eruod	I	03	03	03	03	03	03	03	03	24
<u>a</u>	g eek	Vractical/ gniward	Ь	+	1	1	1	1	2	2	1	94
00 UI	Teaching Hours /Week	Tutorial	Τ	2	2	2	2	2		I	2	12
RY G	T Ho	Треогу Гессиге	Г	3	ж	2	2	2		1	1	12
(CHEMIST	នា	Paper Settin Board		Maths	Chemistry	Computer Science and Engineering	E and C Engineering	Mechanical Engineering	Chemistry	Computer Science and Engineering	Humanities	TOTAL
B.E./B.Tech	1	Теасһіпg Перакта		Mathematics	Chemistry	Computer Science and Engineering	ECE/E and I/ TC	ME, Auto, IP, IEM, Mfg Engineering	Chemistry	Computer Science and Engineering	Humanities	
II SEMESTER B.E./B.Tech (CHEMISTRY GROUP)		Course Title		Advanced Calculus and Numerical Methods	Engineering Chemistry	C Programming for Problem Solving	Basic Electronics	Elements of Mechanical Engineering	Engineering Chemistry Laboratory	C Programming Laboratory	Technical English-II	
		Course and Course Code		18MAT21	18CHE22	18CPS23	18ELN24	18ME25	18CHEL26	18CPL27	18EGH28	
		Cou		BSC	BSC	ESC	ESC	ESC	BSC	ESC	HSMC	
		S. S.		1	2	ю	4	S	9	7	∞	

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Humanity, S	
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:: BSC: Bas	
Note	

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.

### Scheme of Teaching and Examination 2018 - 19

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

III S	SEMESTE	₹										
					Teaching	Hours /	Week		Exami	nation		
Sl. No		rse and se Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					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 18KAK39	Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration)	HSMC		2			100		100	1
		OR	OR									
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1 Exam	 ination i	 s by obie	02 ective ty	pe quest	60		
		I.			17	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					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 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

(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 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.

### Scheme of Teaching and Examination 2018 – 19

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

IV S	EMESTER	₹										
					Teaching	g Hours /	Week		Exami	nation		
SI. No		rse and se Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P		)	3	Ĺ	
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
		18KVK49	Vyavaharika Kannada (Kannada for communication)/			2			100			
9	HSMC	18KAK49	Aadalitha Kannada (Kannada for Administration)	HSMC		2			100		100	1
		OR	OR									
		18CPC39	Constitution of India, Professional		1			02	40	60		
		1601039	Ethics and Cyber Law			ination i	s by obj	ective ty	pe quest	ions		
					17	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					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 prescrib	oed to lateral entry Diploma h	nolders admitted	d to III s	emeste	r of En	gineeri	ng pro	grams		
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 student have to fulfil 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

### Scheme of Teaching and Examination 2018 – 19

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

						ning H Week	ours		Exam	ination		
Sl. No		irse and irse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P			<b>9</b> 2	L	
1	HSMC	18CS51	Management, Entrepreneurship for IT Industry	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

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

### Scheme of Teaching and Examination 2018 - 19

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

VI SI	EMESTE	R										
					Teachi	ng Hours	/Week		Exami	ination	1	
Sl. No	_	ourse and ourse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P					
1	PCC	18IS61	File Structures	CS / IS	3	2		03	40	60	100	4
2	PCC	18IS62	Software Testing	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	18ISL66	Software Testing Laboratory	CS / IS		2	2	03	40	60	100	2
7	PCC	18ISL67	File Structures 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		(To be carrintervening semesters)		_							
	TOTAL 15 10 06								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
18IS645	Information Management System
	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 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 takeup/complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements

### 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 S	EMESTER	•		•								
					Teachi	ng Hours	/Week		Exami	nation	1	
Sl. No	Cours Cours		Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits
					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 con carried out								be
	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 Architectures				
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

### 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 S	VIII SEMESTER											
	Course and Course code		Course Title		Teaching Hours /Week			Examination				
SI. No				Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					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	interveni VII seme	ompleted during the ervening vacations of VI and semesters and /or VII and I semesters.)				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).

