#### SAPTHAGIRI COLLEGE OF ENGINEERING

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi) #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru – 560057 ISO 9001, 14001 Certified Institute, Accredited by NAAC with A Grade

#### DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Program name	Program code	Name of the Course that include experiential learning through project work/field work/internship	Course code	Details of Experiential Learning through Projects/ Internship
		FINAL YEA	AR .	
Information Science and Engineering	IS	Web Technology and its applications	17CS71	Fire And Gas Accident Avoider System
Information Science and Engineering	IS	Software Architecture and Design Patterns	171572	Real Time Face Mask Detector Using Deep Learning
Information Science and Engineering	IS	Machine Learning	17CS73	Gesture Recognition Based Virtual Mouse and Keyboard
Information Science and Engineering	IS	Cloud Computing and its Applications	17CS742	IOT Based Air and Sound pollution monitoring system
Information Science and Engineering	IS	Machine Learning Laboratory	17CSL76	Human Activity Recognition
Information Science and Engineering	IS	Web Technology Laboratory with mini project	17CSL77	Intelligent and Innovative Shopping Cart for Smart Cities Using IOT
Information Science and Engineering	IS	Project Work Phase–I + Project work Seminar	17ISP78	Web Vulnerability Detection: The Case of Cross-Site Request Forgery
Information Science and Engineering	IS	Internet of Things and Applications	17CS81	Smart Water Quality Monitoring System Using IOT
Information Science and Engineering	IS	Big Data Analytics	17CS82	Traffic Sign Detection and Recognition System Using Machine Learning
Information Science and Engineering	IS	Internship/ Professional Practice	171584	A Novel Method of Covid-19 Detection Using Deep Neural Networks
Information Science and Engineering	IS	Project Work-II	17ISP85	Skin Cancer Detection Using Machine Learning
Information Science and Engineering	IS	Seminar	17ISS86	Hand Written Equation Solver Using CNN
Information Science and Engineering	IS			Preterm Birth Risk Detection System
Information Science and Engineering	IS			Dementia Patient Fall Detection and Location Tracker
Information Science and Engineering	IS			Human Age And Gender Detection Convolutional Neural Network
Information Science and Engineering	IS			Monitoring And Controlling Air Pollution To Prevent The Spread Of Covid-19
Information Science and Engineering	IS			Autonomous Car Simulation Using CARLA
Information Science and Engineering	IS	= ' = '-, '-, '-		Cricket Game Predicting Analytics Using Machine Learning Algorithms
Information Science and Engineering	IS			Accident Detection And Safety Monitoring System Using Raspberry PI
Information Science and Engineering	IS			Stock Market Prediction Using Machine Learning
Information Science and Engineering	IS	0.5		Indoor Intrusion Detection And Filtering System Using Raspberry PI

Information Science and Engineering	IS			Predicting Deep Solar Power System Coverage
Information Science and Engineering	IS			Computer Vision And ML Based Unobtrusive Classroom Attendance
Information Science and Engineering	IS			Prediction And Forecast For Covid-19 Outbreak In India Based On Enhanced Epidemiological Models
Information Science and Engineering	15			Touchless Human Computer Interaction For Kiosk Devices
Information Science and Engineering	IS	1		Blind Assistance System Using CNN
Information Science and Engineering	IS			Prediction And Forecast For COVID-19 Outbreak In India Based On Enhanced Epidemiological Model
		THIRD Y	/EAR	
Information Science and Engineering	IS	Management, Entrepreneurship for IT Industry	18CS51	Travel Management System
Information Science and Engineering	IS	Computer Networks and Security	18CS52	Online Marriage Registration System
Information Science and Engineering	IS	Database Management System	18CS53	Household Savings and Expenditure Management System
Information Science and Engineering	IS	Application Development using Python	18CS55	Online Voting System
Information Science and Engineering	IS	Unix Programming	18CS56	Record Label Management System
Information Science and Engineering	IS	Computer Network Laboratory	18CSL57	Human Resources Management System
Information Science and Engineering	IS	DBMS Laboratory with mini project	18CSL58	Event Management System
Information Science and Engineering	IS	File Structures	18IS61	Online Course Registration System
Information Science and Engineering	IS	Software Testing	18IS62	Vaccination Database Management System
Information Science and Engineering	IS	Web Technology and its applications	18CS63	Airlines System Management
Information Science and Engineering	IS	Software Testing Laboratory	18ISL66	Job Applications Management System
Information Science and Engineering	IS	File Structures Laboratory with mini project	18ISL67	Art Gallery Management System
Information Science and Engineering	IS	Mobile Application Development	18CSMP68	Stadium Seat Booking System
Information Science and Engineering	IS			Blood Donation Management System
Information Science and Engineering	IS			Attendance Management System
Information Science and Engineering	IS			Tourism Management System
Information Science and Engineering	IS			Movie List Management System
Information Science and Engineering	IS			Patient Record Management System
Information Science and Engineering	IS			Veterinary Management System
Information Science and Engineering	IS			ATM Management System
Information Science and Engineering	IS			Clinic Management System
Information Science and Engineering	IS			Rail Way Reservation System
Information Science and Engineering	IS			E-Commerce Website
Information Science and Engineering	IS			Gaming Store Database

Information Science and Engineering	IS	Bank Database Management System
Information Science and Engineering	IS	Scholarship Portal
Information Science and Engineering	IS	EVM Management System
Information Science and Engineering	IS	Airline Booking Management System
Information Science and Engineering	IS	Vehicle Parking Management System
Information Science and Engineering	IS	Farm Management System
Information Science and Engineering	IS	Online Doctor Appointment System
Information Science and Engineering	IS	Placement Management System
Information Science and Engineering	IS	Employee Database And Payroll Management System
Information Science and Engineering	IS	Car Showroom Management System
nformation Science and Engineering	IS STATE OF THE ST	Blood Bank Management System
Information Science and Engineering	IS	Student Result Management System
Information Science and Engineering	IS	Fitness Center
Information Science and Engineering	IS	Farm Management System
Information Science and Engineering	IS UNAMEDIAL	Product Management System
nformation Science and Engineering	IS	Panchayat Management System
nformation Science and Engineering	IS	Bus Reservation System
nformation Science and Engineering	IS	Insurance Management System
nformation Science and Engineering	IS	Vehicle Management System
nformation Science and Engineering	IS	Hospital Management System
nformation Science and Engineering	IS	Superstore Sale Management System
nformation Science and Engineering	IS	Medical Shop Management System
nformation Science and Engineering	IS	FIFA Club World Cup
nformation Science and Engineering	IS	Book Library Management System
nformation Science and Engineering	IS	Salon Management System
nformation Science and Engineering	IS	Hostel Management System
nformation Science and Engineering	IS	Gym Management System
nformation Science and Engineering	IS	Hotel Management System
nformation Science and Engineering	IS	Courier Management System
nformation Science and Engineering	IS	Online Shopping Management System
nformation Science and Engineering	IS	Blood Bank Management System
nformation Science and Engineering	IS	Income Tax Management System
nformation Science and Engineering	IS	Social Networking Database
nformation Science and Engineering	IS	Vehicle Service Management System
nformation Science and Engineering	IS	Visitors Management System
nformation Science and Engineering	IS	Warehouse Inventory Management System

a v	15			Online Examination Management System
formation Science and Engineering	IS			Pet Shop Management System
nformation Science and Engineering	IS			Taxi Management System
nformation Science and Engineering	IS			Payroll Management System
nformation Science and Engineering	IS			Car Rental Management System
nformation Science and Engineering	IS			Concert Ticket Booking System
nformation Science and Engineering	13	SECOND	/FAR	
		The Aller of the Control of the Cont	18CS32	Smart Time Table
nformation Science and Engineering	IS	Data Structures and Applications	18CSL38	Flappy Bird
nformation Science and Engineering	IS	Data Structures Laboratory	18CS42	End to End Game
nformation Science and Engineering	IS	Design and Analysis of Algorithms	STRONG PARKS MILET	Calendar Using C
nformation Science and Engineering	IS	Operating Systems	18CS43	A Game of Pokemon Battle
Information Science and Engineering	IS	Microcontroller and Embedded Systems	185C44	The second of th
Information Science and Engineering	IS	Object Oriented Concepts	18CS45	Food Ordering
Information Science and Engineering	ıs	Design and Analysis of Algorithm Laboratory	18CSL47	MS Paint Through C++
Information Science and Engineering	IS	Microcontroller and Embedded Systems Laboratory	18CSL48	Contact Management System
Information Science and Engineering	IS			Personal Dairy
Information Science and Engineering	15	THE STREET OF SAME		Contact Management System
A STATE OF THE STA	15			Phone Book Management System
Information Science and Engineering	IS			ATM Transaction
Information Science and Engineering	IS			URL Shortener
Information Science and Engineering	IS			Graphic Car
Information Science and Engineering				Walking man Rain and Clouds
Information Science and Engineering	IS			Custom Countdown
Information Science and Engineering	IS			Pacman Game
Information Science and Engineering	15			Roshamba
Information Science and Engineering	IS			Hospital Management
Information Science and Engineering	IS			1100Print 1/100Print

Department of Information Science & Englo Sapthagin College of Engineering 142. Chikkmandia Hason hala Man Road 84NGAI CCE - SCO 057

## VISVESVAP "A TECHNOLOGICAL UNIVERSITY," LAGAVI Scheme of Teaching and Examination 2017-2018

Choice Based Credit System (CBCS)

## **B.E: Information Science and Engineering**

#### VII SEMESTER

SI.			Teaching	Teaching	Hours /Week	2 11	Examin	ation		Credits
No Course Code		Title	Department	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	17IS72	Software Architecture and Design Patterns	CS/IS	04		03	60	40	100	4
3	17CS73	Machine Learning	CS/IS 04		03	60	40	100	4	
4	17CS/IS74x	Professional Elective 3	CS/IS	03		03	60	40	100	3
5	17CS/IS75x	Professional Elective 4	CS/IS	03	VINOL I	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 In 02-Hour Pr		03	60	40	100	2
8	17ISP78	Project Work Phase-I + Project work Seminar	CS/IS		03			100	100	2
		TOTAL	4.14	Theory:18 Practical a 09 hours	hours nd Project:	21	420	380	800	24

Profession	nal 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	17IS753	Information Management System
17CS744	Unix System Programming	17CS754	Storage Area Networks

Dr H.R Ranganatna Prof. & H.O.D

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 gineering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation being Chikkasandra, Hesaraghatta Main Road BENGALURU-360 057

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY, "LAGAVI Scome of Teaching and Examination 2017-2010 Choice Based Credit System (CBCS)

**B.E: Information Science and Engineering** 

#### VIII SEMESTER

SI.	Course Code	Trial	Teaching Department	Teaching	Hours /Week	55.85.65		Credit		
140		Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE	Total	
1	17CS81	Internet of Things and Applications	00.70	1	TIESMINES.		Marks	Marks	Marks	
		C P P P P P P P P P P P P P P P P P P P	CS/IS	4	1 to 1	3	60	40	100	4
2	17CS82	Big Data Analytics				ALLES ME			1500	
			CS/IS	4		3	60	40	100	4
3	17CS/IS83X	Professional Elective-5	The second secon	2						
			CS/IS	3	-	3	60	40	100	3
4	17IS84 Internship/ Professional							Calle .		
		Practice	CS/IS Industry Oriented		y Oriented	3	50	50	100	2
5	17ISP85	Project Work-II								2
			CS/IS		6	3	100	100	200	6
	17ISS86	Seminar					- 1	A 175 -	200	U
			CS/IS		4		1	100	100	1
		TOTAL		Leonard Man / Act Const					100	1
					Theory: 11 hours Project and Seminar: 10 hours		330	370	700	20

Profession	al Elective -5
17CS831	High Performance Computing
17CS832	User Interface Design
17IS833	Virtual Reality
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.

Dr H.R Ranganatna Prof. & H.O.D

Dept.of Information Science & Engg. Sapthagiri College of Engineering # 14/5 Chikkasandra, Hesaraghatta Main Rea. BENGALURU-560 057

### 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)

						Teaching Hours /Week			Examination				
SI. No	Course and Course code		Teaching Department		Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
1					L	Т	P	D	5	S	To		
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	22	03	40	60	100	4	
3	PCC	18CS53	Database Management System	CS / IS	3	-				-		.4	
4	PCC	18CS54	Automata theory and Computability	CS/IS	3	2		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		_		1850		00	100	3	
8	PCC	18CSL58	DBMS Laboratory with mini	CS/IS	1447	2	2	03	40	60	100	2	
		10C3L38	project	CS/IS	***	2	2	03	40	60	100	2	
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental									
		Zavironnentai Studies		1 uper setting.	[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.



#### 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)

				Teaching Department	Teachi	ng Hour	s/Week	Examination				
SI. No	100	Course and ourse code	Course Title		Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	181561	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		122	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	
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	22		2	03	40	60	100	2
9	INT	***	Internship	(To be carried out during the intervening vacations of VI and VII semesters)								
0				TOTAL	15	10	06	24	320	480	800	2

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.

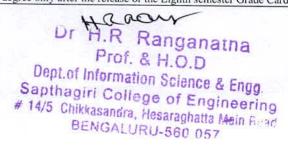
SEE for Mini-project:

(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

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.



## 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)

			The second second		Teachir	ng Hours	/Week		Examination				
SL No	Course and Course Code  BSC 18MAT31		Teaching Department	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
			Transform Calculus, Fourier Series		1000		P						
1		P. S. COLLEGE STATE STAT	And Numerical Techniques	Mathematics	2	2	1922	03	40	60	100	3	
2	PCC	18CS32	Data Structures and Applications	CS/IS	3	2	- au	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	1	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	
		18KVK39	Vyavaharika Kannada (Kannada for communication)/	C3713				03	-3.5%	00	100		
9	HSMC	18KAK39	Aadalitha Kannada (Kannada for Administration)	HSMC		2			100		100		
		OR	OR			·					100	1	
		18CPC39	Constitution of India, Professional		1	<u> </u>	49	02	40	60			
	1001039		Ethics and Cyber Law		Examination is by objective type questions								
					17	08		24	420	480			
				TOTAL	OR	OR	04	OR	OR	OR	900	24	
					18	10	1,1000	26	360	540	200	~ 4	

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 | 01 |

(a) The mandatory non - credit courses Additional Mathematics I and II proscribed for III and II

(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 (b) The Course Course of the c

(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.

Dr H.R Ranganatna
Prof. & H.O.D

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# VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19 utcome Based Education (OBE) and Chains Based Co. N. G.

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

SI. No	Course and Course Code		Course Title	Teaching Department	Teaching Hours /Week			Examination				T
					Theory Lecture	T Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
2	PCC	18CS42	Design and Analysis of Algorithms	CS / IS	3	2	777	03	40	60	100	4
3	PCC	18CS43	Operating Systems	CS/IS	3	0		03	40	- 10		
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	-	-				9	
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
	HSMC	18KVK49	Vyavaharika Kannada (Kannada for communication)/	нѕмс		2			100	-	100	1
9		18KAK49	Aadalitha Kannada (Kannada for Administration)									
		OR	OR									
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		l Evam			02	40	60		
						Examination is by objective type questions  17						
TOTAL					OR	OR	04	OR	0R	480 OR	900	24
					18	10	75.E	26	360	540	200	24

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		60		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

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.

Dr H.R Ranganatna Prof. & H.O.D Dept.of Information Science & Engg.

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