Sapthagiri College of Engineering

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi.)

(ISO 9001-2015 & 14001-2015 Certified) (Accredited by NAAC with 'A' Grade)

Department of Computer Science & Engineering

(Accredited by NBA)

1.3.2 Number of courses that include experiential learning through project work/field work/internship during the year

Program name	Program code	Name of the Course that include experiential learning through project work/field work/internship	Course code	Year of offering	Name of the student studied course on experiential learning through project work/field work/internship
FOURTH YEAR					
Computer Science and Engineering	CSE	Artificial Intelligence and Machine Learning	18CS71	2021-22	Cost effective Smart IOT based gate controller for Agriculture Irrigation System
Computer Science and Engineering	CSE	Big Data Analytics	18CS72	2021-22	Human image captioning using deep learning
Computer Science and Engineering	CSE	User Interface Design	18CS734	2021-22	Self Balancing Robot
Computer Science and Engineering	CSE	Cryptography	18CS744	2021-22	Analysis of Fake Job Posting
Computer Science and Engineering	CSE	Artificial Intelligence and Machine Learning Laboratory	18CSL76	2021-22	Health monitoring system with smart medical kit for elderly people
Computer Science and Engineering	CSE	Project Work Phase–I	18CSP77	2021-22	wildlife monitoring using object detection
Computer Science and Engineering	CSE	Internet of Things	18CS81	2021-22	Developing a Prediction Model for Cotton Leaf Diseases using Deep Learning Technique
Computer Science and Engineering	CSE	Storage Area Networks	18CS822	2021-22	IOT Based Power Transmission Fault Detection using Blynk Cloud
Computer Science and Engineering	CSE	Internship/professional practice	18CSI85	2021-22	Crypto-currency price prediction
Computer Science and Engineering	CSE	Project Work-II	18CSP83	2021-22	Disaster Survival Prediction using Machine Learning
Computer Science and Engineering	CSE	Technical Seminar	18CSS84	2021-22	Identification of Diabetic Retinopathy using Image Processing.
Computer Science and Engineering	CSE				Phishing detection using Machine Learning
Computer Science and Engineering	CSE				customer churn prediction for Telecom
Computer Science and Engineering	CSE				Emphasized smart handwriting recognizer to facilitate e-learning tool
Computer Science and Engineering	CSE				Footprint AI Engine
Computer Science and Engineering	CSE				Crippled Patients
Computer Science and Engineering	CSE				Intelligent Reader for Visually Impaired People
Computer Science and Engineering	CSE				Detection and classification of covid-19 or pneumonia using chest X-Ray images by applying deeplearning algorithms and AI-ML techniques
Computer Science and Engineering	CSE				healthcare chatbot
Computer Science and Engineering	CSE				Early prediction of Diabetes using machine learning
Computer Science and Engineering	CSE				Pest Detection and Obliteration based robotic system
Computer Science and Engineering	CSE				Liveness net and face antispoofing system
Computer Science and Engineering	CSE				Identification and Classification of brain tumor using Kaggle datasets
Computer Science and Engineering	CSE				
Computer Science and Engineering	CSE				Image Based Search Engine
Computer Science and Engineering	CSE				Retinal disease screening through local binary patterns
Computer Science and Engineering	CSE				chronic kidney disease prediction using machine learning algorithm
Computer Science and Engineering	CSE				Tool for evaluating subjective answers using AI
Computer Science and Engineering	CSE				Stock Market prediction using ML and sentiment analysis
Computer Science and Engineering	CSE				Fire Gun Violence based Anomaly Detecation Syatem Using Deep Neural Networks
Computer Science and Engineering	CSE				Sign Language Recognition Using OpenCV
Computer Science and Engineering	CSE				REAL-TIME POTHOLE DETECTION
Computer Science and Engineering	CSE				Image restoration and upsacaling

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Computer Science and Engineering	CSE				Food Clasification using Deep Learning
Computer Science and Engineering	CSE				Human emotion detection
Computer Science and Engineering	CSE				Deep Learning Approach
Computer Science and Engineering	CSE				Genetic programming for hate speech detection on social media
Computer Science and Engineering	CSE				neural networks
Computer Science and Engineering	CSE				Automatic Vibration Device for Stroke Patients
Computer Science and Engineering	CSE				Preterm Birth Risk Detection System
			THIRD YEAR		
Computer Science and Engineering	CSE	Computer Nwteorks and Security	18CS52	2020-21	GRAPHICAL IMPLEMENTATION OF SOLAR SYSTEM USING OPEN GL
Computer Science and Engineering	CSE	Databas Management System	18CS53	2020-21	Drawing Tool using Open GL/Graphics Editor
Computer Science and Engineering	CSE	Automata Theory and Computability	18CS54	2020-21	Traffic signal of vehicles and train
Computer Science and Engineering	CSE	Application Development using Python	18CS55	2020-21	Rocket launching Helicopter
Computer Science and Engineering	CSE	Unix Programming	18CS56	2020-21	Representation of singly linked list
Computer Science and Engineering	CSE	Computer Network Laboratory	18CSL57	2020-21	bus stop simulation
Computer Science and Engineering	CSE	DBMS Laboratory with mini project	18CSL58	2020-21	Olympic Logo using Open GL
Computer Science and Engineering	CSE	System Software and compilers	18CS61	2020-21	Car Parking using Selection Sort
Computer Science and Engineering	CSE	Computer Graphics and Visualization	18CS62	2020-21	working of satellite
Computer Science and Engineering	CSE	Web Technology and its applications	18CS63	2020-21	Line Blending with Colors
Computer Science and Engineering	CSE	Cloud Computing and its Application	18CS643	2020-21	Designing a Steam Engine
Computer Science and Engineering	CSE				3D Rotating fan using OpenGL
Computer Science and Engineering	CSE				Graphical Implementation Tower of Hanoi using Open GL
Computer Science and Engineering	CSE				Graphical Implementation of flowing fountain using open GL
Computer Science and Engineering	CSE				Moving Cube with hand Detection
Computer Science and Engineering	CSE				Page Replacement Algorithms
Computer Science and Engineering	CSE				Airplane Takeoff
Computer Science and Engineering	CSE				Tic- Tac- Toe Game using Open GL
Computer Science and Engineering	CSE				Air show with Tricolor(Indian Flag)
Computer Science and Engineering	CSE				Additive color model, fishing game,toll collecting booth,LRU using opengl
Computer Science and Engineering	CSE				Lift Over Bridge using Open GL
Computer Science and Engineering	CSE				Electric Power Generation using Windmil
Computer Science and Engineering	CSE				Multilight
Computer Science and Engineering	CSE				IRRIGATION CONTNTROL SYSTEM
Computer Science and Engineering	CSE				A Simple Village Scape with OpenGL
Computer Science and Engineering	CSE				Atom Simulation using Open Gl
Computer Science and Engineering	CSE				3D home using Open GL
Computer Science and Engineering	CSE				Catch Me
Computer Science and Engineering	CSE				Page replacement Algorithms
Computer Science and Engineering	CSE				GRAPHICAL IMPLEMENTATION OF Sorting USING OPEN GL
Computer Science and Engineering	CSE				Simulation of 3D Taj Mahal MODEL
Computer Science and Engineering	CSE				implementation of stack and queue operation using Open GL
Computer Science and Engineering	CSE				ship simulation
Computer Science and Engineering	CSE				Atom Simulation using Open Gl
Computer Science and Engineering	CSE				3D Bike Simulation using Open GL
Computer Science and Engineering	CSE				SIMULATION OF TRAIN ON OPEN GL
Computer Science and Engineering	CSE				3D Car Park USING OPEN GL
Computer Science and Engineering	CSE				AMUSEMENT PARK
Computer Science and Engineering	CSE				3D MODEL OF GOLGUMBAZ

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Computer Science and Engineering	CSE				SIMULATION OF TRAIN ON OPEN GL
Computer Science and Engineering	CSE				3D Car Park USING OPEN GL
Computer Science and Engineering	CSE				AMUSEMENT PARK
Computer Science and Engineering	CSE				3D MODEL OF GOLGUMBAZ
Computer Science and Engineering	CSE				DYNAMIC SORTING ALGORITHM VISUALIZATION
Computer Science and Engineering	CSE				GALVANIC CELL VISUALIZER
Computer Science and Engineering	CSE				Hare and Tortoise Race on OpenGL
Computer Science and Engineering	CSE				DATA COMMUNICATION
Computer Science and Engineering	CSE				Point to point drawing program
Computer Science and Engineering	CSE				3D BICYCLE SIMULATION USING OPEN GL
Computer Science and Engineering	CSE				SCENARIO WITH DIFFERENT SEASONS
Computer Science and Engineering	CSE				GRAPHICAL IMPLEMENTATION OF SORTING USING OPEN GL
Computer Science and Engineering	CSE				Simulation of Solar Eclipse using open GL
Computer Science and Engineering	CSE				WORKING OF BLOCKCHAIN USING OPEN GL
Computer Science and Engineering	CSE				3D Bike simulation USING OPEN GL
Computer Science and Engineering	CSE				3d room designing using open GL
Computer Science and Engineering	CSE				Rubix cube
Computer Science and Engineering	CSE				Point to point drawing program
Computer Science and Engineering	CSE				GRAPHICAL IMPLEMENTATION OF AIRPLANE TAKE-OFF USING OPEN GL
Computer Science and Engineering	CSE				FUTURE SAPTHAGIRI UNIVERSITY
Computer Science and Engineering	CSE				SAILING SHIP
Computer Science and Engineering	CSE				VISUALIZATION OF RAIN WATER COLLECTION USING OPEN GL
Computer Science and Engineering	CSE				Client Server Communication
Computer Science and Engineering	CSE				SPACESHUTTLE 3D MODEL
Computer Science and Engineering	CSE				Flowing Fountain using open gl
Computer Science and Engineering	CSE				Crow story animation
Computer Science and Engineering	CSE				RAILWAY STATION SCENARIO
Computer Science and Engineering	CSE				PARACHUTE APPLICATION USING OPEN GL
Computer Science and Engineering	CSE				LUNAR PHASES OF MOON USING OPEN GL
Computer Science and Engineering	CSE				CITY TIMELAPSE
Computer Science and Engineering	CSE				Airplane crashing Using Open GL
Computer Science and Engineering	CSE				EDUCATION SYSTEM USING OPEN GL
Computer Science and Engineering	CSE				Rocket launch with Satellite using OpenGL
Computer Science and Engineering	CSE				ANALOG AND DIGITAL CLOCK
Computer Science and Engineering	CSE				City Real Life Simulation Using OpenGL
Computer Science and Engineering	CSE				Rain Snow & Hail Effects
Computer Science and Engineering	CSE				AQUARIUM
SECOND YEAR					
Computer Science and Engineering	CSE	Data Structure and applications	18CS32	2019-20	Soil Moisture Testing System
Computer Science and Engineering	CSE	Computer Organizations	18CS34	2019-20	Health monitoring system
Computer Science and Engineering	CSE	Software engineering	18CS35	2019-20	Clap control Home automation
Computer Science and Engineering	CSE	Data Structure Laboratory	18CSL38	2019-20	Smoke Detector
Computer Science and Engineering	CSE	Design and Analysis of Algorithm	18CS42	2019-20	Real Time chatting website
Computer Science and Engineering	CSE	Operating Systems	18CS43	2019-20	Shopping website
Computer Science and Engineering	CSE	Microcontroller and Embeddded System	18CS44	2019-20	Restaurant billing system
Computer Science and Engineering	CSE	Object Oriented Concepts	18CS45	2019-20	Resume Builder
Computer Science and Engineering	CSE	Data Communication	18CS46	2019-20	agriculture management system

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Computer Science and Engineering	CSE	Design and Analysis of Algorithm Laboratory	18CSL47	2019-20	tour and travel website
Computer Science and Engineering	CSE	Microcontroller and Embeddded System	18CSL48	2019-20	Distance detector.
Computer Science and Engineering	CSE				Attendance system using RFID technology
Computer Science and Engineering	CSE				Sorting visualiser
Computer Science and Engineering	CSE				Doctor appointment System
Computer Science and Engineering	CSE				Credit Card Fraud Detection
Computer Science and Engineering	CSE				Crime Control System
Computer Science and Engineering	CSE				Currency Converter
Computer Science and Engineering	CSE				Fire Alarm System
Computer Science and Engineering	CSE				Car parking system
Computer Science and Engineering	CSE				Gesture - based smart switch
Computer Science and Engineering	CSE				Gaming software in java
Computer Science and Engineering	CSE				weather controlled music player
Computer Science and Engineering	CSE				Ultrasonic Distance Dector
Computer Science and Engineering	CSE				anti sleep alarm
Computer Science and Engineering	CSE				speech-to-text
Computer Science and Engineering	CSE				Movie Catalogue using HTML, CSS, JS
Computer Science and Engineering	CSE				Student Data system
Computer Science and Engineering	CSE				Bank management System
Computer Science and Engineering	CSE				OOC based 2d fighter webgame
Computer Science and Engineering	CSE				voice assistant
Computer Science and Engineering	CSE				ATM interface
Computer Science and Engineering	CSE				Voting platform
Computer Science and Engineering	CSE				distance measure by ultrasonic sensor
Computer Science and Engineering	CSE				Voting App
Computer Science and Engineering	CSE				Plaggiarism Checker

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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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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.

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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	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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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.

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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	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.

Principal
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Bengaluru - 560 057

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)

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 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

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.

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