

VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI



Scheme of Teaching and Examinations and Syllabus
M.Tech in Computer Science and Engineering (SCS)
(Effective from Academic year 2020 - 21)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI											
Scheme of Teaching and Examinations – 2020 - 21											
M.Tech in Computer Science and Engineering (SCS)											
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)											
I SEMESTER											
SL. No.	Course	Course Code	Course Title	Teaching Hours / Week			Examination			Credits	
				Theory	Practical / Seminar	Development Activities	Duration in Hours	CIE Marks	SEE Marks		Total Marks
1	PCC	20SCS11	Mathematical Foundations of Computer Science	03	--	02	03	40	60	100	4
2	PCC	20SCS12	Artificial Intelligence and Machine Learning	03	--	02	03	40	60	100	4
3	PCC	20SCS13	Advanced Database Management Systems	03	--	02	03	40	60	100	4
4	PCC	20SCS14	Advanced Algorithms	03	--	02	03	40	60	100	4
5	PCC	20SCS15	Internet of Things and Applications	03	--	02	03	20+	60	100	4
6	PCC	20SCSL16	Algorithms and Database Management Systems Laboratory	--	04	--	03	40	60	100	2
7	PCC	20RMI17	Research Methodology and IPR	01	--	02	03	40	60	100	2
TOTAL				16	04	12	21	280	420	700	24
Note: PCC: Profession Core											
Skill development activities:											
Students and course instructor/s to involve either individually or in groups to interact together to enhance the learning and application skills. The students should interact with industry (small, medium and large), understand their problems or foresee what can be undertaken for study in the form of research/ testing / projects, and for creative and innovative methods to solve the identified problem. The students shall											
<ol style="list-style-type: none"> Gain confidence in modeling of systems and algorithms. Work on different software/s (tools) to Simulate, analyze and authenticate the output to interpret and conclude. Operate the simulated system under changed parameter conditions to study the system with respect to thermal study, transient and steady state operations, etc. Handle advanced instruments to enhance technical talent. Involve in case studies and field visits/ field work. Accustom with the use of standards/codes etc., to narrow the gap between academia and industry. 											
All activities should enhance student's abilities to employment and/or self-employment opportunities, management skills, Statistical analysis, fiscal expertise, etc.											
Internship: All the students have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and /or II and III semesters. A University examination shall be conducted during III semester and the prescribed credit shall be counted for the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as fail in internship course and have to complete the same during the subsequent University examination after satisfying the internship requirements.											
Note: (i) Four credit courses are designed for 50 hours Teaching – Learning process.											
(ii) Three credit courses are designed for 40 hours Teaching – Learning process.											

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II SEMESTER											
SL. No.	Course	Course Code	Course Title	Teaching Hours / Week			Examination				Credits
				Theory	Practical / Seminar	Skill Development Activity	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	PCC	20SCS21	Data Science	03	--	02	03	40	60	100	4
2	PCC	20SCS22	Semantic Web and Social Networks	03	--	02	03	40	60	100	4
3	PCC	20SCS23	Blockchain Technology	03	--	02	03	40	60	100	4
4	PEC	20SCS24X	Professional elective 1	04	--	--	03	40	60	100	4
5	PEC	20SCS25X	Professional elective 2	04	--	--	03	40	60	100	4
6	PCC	20SCSL26	Data Science Laboratory	--	04	--	03	40	60	100	2
7	PCC	20SCS27	Technical Seminar	--	02	--	--	100	--	100	2
TOTAL				17	06	06	18	340	360	700	24
Note: PCC: Profession Core, PEC: Professional Elective Course											
Professional Elective-1						Professional Elective-2					
Course Code 20LSCS24X		Course Title				Course Code 20SCS25X		Course Title			
20SCS241		Advanced Cryptography				20SCS251		Image Processing and Machine Vision			
20SCS242		Natural Language Processing				20SCS252		Object Oriented Design			
20SCS243		Cloud Computing				20SCS253		Software Defined Networks			
20SCS244		Pattern recognition				20SCS254		Modern Computer Architecture			
Note:											
<p>1. Technical Seminar: CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the program shall be mandatory. The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and performance in Question and Answer session in the ratio 50:25:25.</p>											
<p>2. Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and /or II and III semesters. A University examination shall be conducted during III semester and the prescribed internship credit shall be counted in the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as fail in internship course and have to complete the same during the subsequent University examination after satisfying the internship requirements.</p>											

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III SEMESTER											
SL. No.	Course	Course Code	Course Title	Teaching Hours / Week			Examination				Credits
				Theory	Practical / Seminar	Skill Development Activity	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	PCC	20SCS31	Deep Learning	03	--	02	03	40	60	100	4
2	PEC	20SCS32X	Professional elective 3	03	--	--	03	40	60	100	3
3	PEC	20SCS33X	Professional elective 4	03	--	--	03	40	60	100	3
4	Project	20SCS34	Project Work phase -1	--	02	--	--	100	--	100	2
5	PCC	20SCS35	Mini-Project	--	02	--	--	100	--	100	2
6	Internship	20SCSI36	Internship	(Completed during the intervening vacation of I and II semesters and /or II and III semesters.)			03	40	60	100	6
TOTAL				09	04	02	12	360	240	600	20
Note: PCC: Profession Core, PEC: Professional Elective Course											
Professional Elective-3						Professional Elective-4					
Course Code		Course Title		Course Code		Course Title					
20SCS32X				20SCS33X							
20SCS321		Engineering Economics		20SCS331		Business Intelligence and its Applications					
20SCS322		Virtual Reality		20SCS332		Robotics and Automation					
20SCS323		Soft and Evolutionary Computing		20SCS333		Speech Processing					
20SCS324		Multi Core Architecture and Programming		20SCS334		Wireless Sensor Networks					
Note:											
1. Project Work Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document and present a seminar.											
CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25. SEE (University examination) shall be as per the University norms.											
2. Internship: Those, who have not pursued /completed the internship, shall be declared as fail in internship course and have to complete the same during subsequent University examinations after satisfying the internship requirements. Internship SEE (University examination) shall be as per the University norms.											

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IV SEMESTER											
SL. No.	Course	Course Code	Course Title	Teaching Hours / Week			Examination				Credits
				Theory	Practical / Seminar	Skill Development Activity	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	Project	20SCS41	Project work phase 2	--	04	03	03	40	60	100	20
TOTAL				--	04	03	03	40	60	100	20
<p>Note:</p> <p>Project Work Phase-2: CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.</p> <p>SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.</p>											

