SOET	2018-21 (SCHEME OF STUDIES)														B.SC.(H) (COMPUTER SCIENCE)			
YEAR	ODD SEMESTER								EVEN SEMESTER									
	SNO	COURSE CODE	COURSE TITLE	L	T	P	C		SNO	COURSE CODE	COURSE TITLE	L	T	P	C
FIRST	1	ETME106	ENGINEERING MECHANICS	3	0	0	3		1	BSPH112	ELECTRICITY AND MAGNETISM	3	1	0	4
	2	BSMA133	CALCULUS	4	0	0	4		2	BSMA219	PARTIAL DIFFERENTIAL EQUATIONS	4	0	0	4
	3	ETEL101	COMMUNICATION SKILLS	4	0	0	4		3	SMEL236	SOFT SKILLS AND PERSONALITY DEVE	3	0	0	3
	4	ETCA135	INTRODUCTION TO PROGRAMMING	3	1	0	4		4	BSCH125	ENVIRONMENTAL STUDIES	3	0	0	3
	5	ETCS521	COMPUTER CENTRE PLANNING & ESTABLISI	3	1	0	4		5	ETCS217	DATA STRUCTURES	3	1	0	4
	6	ETME154	ENGINEERING MECHANICS LAB	0	0	2	1		6	ETCS112	OBJECT ORIENTED PROGRAMMING	3	1	0	4
	7	ETEL171	COMMUNICATION SKILLS LAB	0	0	2	1		7	BSPH166	ELECTRICITY MAGNETISM LAB	0	0	2	1
	8	ETCA165	INTRODUCTION TO PROGRAMMING LAB	0	0	2	1		8	ETCS257	DATA STRUCTURES LAB	0	0	2	1
	9	ETCS565	COMPUTER CENTRE PLANNING & ESTABLISI	0	0	2	1		9	ETCS166	OBJECT ORIENTED PROGRAMMING LA	0	0	2	1
			TOTAL	17	2	8	23				TOTAL	19	4	6	25
SECOND	1	BSPH210	STATISTICAL MECHANICS	4	1	0	5		1	BSPH105	OPTICS	4	1	0	5
	2	BSMA217	REAL ANALYSIS	4	0	0	4		2	BSMA137	ALGEBRA	4	0	0	4
	3	BSMA331	NUMERICAL ANALYSIS	4	0	0	4		3	ETEC210	DIGITAL ELECTRONICS	3	1	0	4
	4	ETCS211	OPERATING SYSTEMS	3	1	0	4		4	ETCS304	COMPUTER NETWORKS	3	1	0	4
	5	ETCA231	DATABASE SYSTEM CONCEPTS	3	1	0	4		5	ETCA136	WEB TECHNOLOGIES	3	1	0	4
	6	ETCA269	DATABASE SYSTEM CONCEPTS LAB	0	0	2	1		6	BSPH165	OPTICS LAB	0	0	2	1
	7	BSPH272	STATISTICAL MECHANICS LAB	0	0	2	1		7	ETEC256	DIGITAL ELECTRONICS LAB	0	0	2	1
	8	BSMA351	NUMERICAL ANALYSIS LAB	0	0	2	1		8	ETCS365	COMPUTER NETWORKS LAB	0	0	2	1
	9	ETCS255	OPERATING SYSTEMS LAB	0	0	2	1		9	ETCA164	WEB TECHNOLOGIES LAB	0	0	2	1
			TOTAL	18	3	8	25				TOTAL	17	4	8	25
THIRD	1	ETCS323	JAVA PROGRAMMING	3	1	0	4		1	ETCS506	PYTHON PROGRAMMING	3	1	0	4
	2	BSMA329	DISCRETE MATHEMATICS	4	0	0	4		2	ETCS220	ANALYSIS AND DESIGN OF	3	1	0	4
	3	ETCS 515	COMPUTER GRAPHICS & MULTIMEDIA	3	1	0	4		3	BSMA326	OPERATIONAL RESEARCH	4	0	0	4
	4	ETCS 517	AI & PATTERN RECOGNITION	3	1	0	4		4	ETCS505	TECHNICAL WRITING	3	0	0	3
	5	ETCS202	SOFTWARE ENGINEERING	3	1	0	4		5	ETMC226	FUNDAMENTALS OF MANAGEMENT	3	0	0	3
	6	ETCS361	JAVA PROGRAMMING LAB	0	0	2	1		6	ETCS555	PYTHON PROGRAMMING LAB	0	0	2	1
	7	ETCS559	COMPUTER GRAPHICS & MULTIMEDIA LAB	0	0	2	1		7	ETCA365	LINUX ENVIRONMENT LAB	0	0	2	1
	8	ETCS561	AI & PATTERN RECOGNITION LAB	0	0	2	1		8	ETCA368	MAJOR PROJECT	0	0	6	3
	9	ETCS252	SOFTWARE ENGINEERING LAB	0	0	2	1								
	10	ETCS507	SEMINAR	0	0	2	1								
			TOTAL	16	4	10	25				TOTAL	16	2	10	23

TOTAL CREDITS	146

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SOET	B.Sc.(H) COMPUTER SCIENCE: 2019- 22 (Scheme of Studies as per Choice-Based Credit System)															
YEAR	ODD SEMESTER								EVEN SEMESTER							
	SNO		COURSE CODE	COURSE TITLE	L	T	P	C	SNO		COURSE CODE	COURSE TITLE	L	T	P	C
FIRST	1	SE	ETME101A	BASICS OF MECHANICAL ENGINEERING	3	-	-	4	1	SE	ETPH120A	FUNDAMENTALS OF PHYSICS-I	3	1	-	4
	2	OE		OPEN ELECTIVE- I	4	-	-	4	2	OE		OPEN ELECTIVE-II	4	-	-	4
	3	SE	ETEL 101A	COMMUNICATION SKILLS	4	-	-	4	3	SE	ETEL 402A	SOFT SKILLS AND PERSONALITY DEVELOPMENT	3	-	-	3
	4	CC	ETCS103A	PROGRAMMING FOR PROBLEM SOLVING	3	1	-	4	4	SE	ETCH 125A	ENVIRONMENTAL STUDIES	3	-	-	3
	5	CC	ETCS521A	COMPUTER CENTRE PLANNING & ESTABLISHMENT	3	1	-	4	5	CC	ETCS 316A	WEB TECHNOLOGIES	3	1	-	4
	6	SE	ETME151A	BASICS OF MECHANICAL ENGINEERING LAB	-	-	2	1	6	CC	ETCS112A	OBJECT ORIENTED PROGRAMMING	3	1	-	4
	7	SE	ETEL171A	COMMUNICATION SKILLS LAB	-	-	2	1	7	SE	ETPH158A	FUNDAMENTALS OF PHYSICS-I LAB	-	-	2	1
	8	CC	ETCS 153A	PROGRAMMING FOR PROBLEM SOLVING LAB	-	-	2	1	8	CC	ETCA164A	WEB TECHNOLOGIES LAB	-	-	2	1
	9	CC	ETCS565A	COMPUTER CENTRE PLANNING & ESTABLISHMENT LAB	-	-	2	1	9	CC	ETCS166A	OBJECT ORIENTED PROGRAMMING LAB	-	-	2	1
				TOTAL	17	2	8	24				TOTAL	19	3	6	25
SECOND	1	SE	ETEC 210A	DIGITAL ELECTRONICS	3	1	-	4	1	ETPH217A	FUNDAMENTALS OF PHYSICS-II	4	1	-	4	4
	2	SE	BSMA217A	REAL ANALYSIS	4	-	-	4	2	ETMA137A	ALGEBRA	4	-	-	4	4
	3	CC	ETMA208A	NUMERICAL ANALYSIS	4	-	-	4	3	ETCS 220A	ANALYSIS AND DESIGN OF	3	1	-	4	4
	4	CC	ETCS219A	FOUNDATION OF COMPUTER SYSTEMS	3	1	-	4	4	ETMC 226A	FUNDAMENTALS OF MANAGEMENT	3	-	-	3	3
	5	CC	ETCS217A	DATA STRUCTURES	3	1	-	4	5	ETCS307A	DATABASE MANAGEMENT SYSTEMS	3	1	-	4	4
	6	CC	ETCS 257A	DATA STRUCTURES LAB	-	-	2	1	6	ETPH257A	ALS OF PHYSICS-II Lab	-	-	2	1	1
	7	SE	ETEC 256A	DIGITAL ELECTRONICS LAB	-	-	2	1	7	ETCS 355A	DATABASE MANAGEMENT SYSTEMS	-	-	2	1	1
	8		BSMA351A	NUMERICAL ANALYSIS LAB	0	0	2	1	8	ETCA365A	LINUX ENVIRONMENT LAB	-	-	2	1	1
	9	CC	ETDM301A	Disaster Managemer	3	-	-	3								
				TOTAL	17	3	6	26				TOTAL	17	3	6	22
THIRD	1	CC	ETCS304A	COMPUTER NETWORKS	3	1		4	1	CC	ETCS506A	PYTHON PROGRAMMING	3	1	-	4
	2	CC	ETCS211A	OPERATING SYSTEMS	3	1	-	4	2	CC	ETCS202A	SOFTWARE ENGINEERING	3	1	-	4
	3	CC	ETCS 206A	COMPUTER GRAPHICS	3	1		4	3	CC	ETCA324A	.Net FRAMEWORK	3	1	-	4
	4	SE	BSMA326A	OPERATIONAL RESEA	4	-	-	4	4	SE	ETCS505A	TECHNICAL WRITING	3	-	-	3
	5	CC	ETCS365A	COMPUTER NETWORKS LAB	-	-	2	1	5	CC	ETCA364A	.Net FRAMEWORK LAB	-	-	2	1
	6	CC	ETCS 255A	OPERATING SYSTEMS LAB	-	-	2	1	6	CC	ETCS555A	PYTHON PROGRAMMING I	-	-	2	1
	7	CC	ETCS258A	COMPUTER GRAPHICS LAB	-	-	2	1	7	CC	ETCS252A	SOFTWARE ENGINEERING LAB	-	-	2	1
	8	SE	ETCS507A	SEMINAR	-	-	2	1	8	SE	ETCA368A	MAJOR PROJECT	-	-	6	3
	9			Value Added Course	2	-	-	-				TOTAL	12	3	12	21
				TOTAL	15	3	8	20								
												TOTAL CREDITS	138			

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SOET

B.SC.(H) COMPUTER SCIENCE - Year 2020-2023 Scheme of Studies as per Choice-Based Credit System (CBCS) and Learning Outcome-Based Curriculum Framework (LOCF)

YEAR	ODD SEMESTER								EVEN SEMESTER							
	SNO		COURSE CODE	COURSE TITLE	L	T	P	C	SNO		COURSE CODE	COURSE TITLE	L	T	P	C
FIRST	1	SE	UCCS 155A	Communication Skills	4	0	0	4	1	CC	ETCS308A	Web Technologies	3	0	0	3
	2	SE	UCDM301A	Disaster Management	3	0	0	3	2	CC	ETCS307A	DATABASE MANAGEMENT SYSTEMS	3	1	0	4
	3	SE	UCES125A	Environmental Studies	3	0	0	3	3	CC	ETCS112A	Object Oriented Programming	3	1	0	4
	4	OE	ETMA163A	GENERIC ELECTIVE -I (Basics of Mathematics)	4	2	0	6	4	SE	ETPH112A	ELECTRICITY AND MAGNETISM(GE-II)	4	2	0	6
	5	SE	ETMC121A	Management Thoughts and Applications	3	0	0	3	5	SE	ETCA365A	Linux Environment Lab	0	0	2	1
	6	CC	ETCS103A	Programming for Problem Solving	4	0	0	4	6	SE	ETCS 355A	DATABASE MANAGEMENT SYSTEMS LAB	0	0	2	1
	7	SE	ETCS153A	Programming for Problem Solving Lab	0	0	2	1	7	SE	ETCS166A	OBJECT ORIENTED PROGRAMMING LAB	0	0	2	1
	8			ONLINE COURSE - I (Data Science from Swayam)	2	0	0	2	8	SE	ETCA164A	WEB TECHNOLOGIES LAB	0	0	2	1
									9			OPEN ELECTIVE	4	-	-	4
				TOTAL	23	2	2	26				TOTAL	17	4	8	25
Second	1	CC	ETCS304A	COMPUTER NETWORKS	4	-	-	4	1	CC	ETCS222A	COMPUTER ORGANIZATION & ARCHITECTURE	4	-	-	4
	2	CC	ETCS211A	OPERATING SYSTEMS	4	1	-	4	2	CC	ETCS 220A	ANALYSIS AND DESIGN OF ALGORITHMS	4	-	-	4
	3	CC	ETEC 210A	DIGITAL ELECTRONICS	4	-	-	4	3	SE	ETEC218A	COMMUNICATION SYSTEM	3	1	-	4
	4	CC	ETCS219A	FOUNDATION OF COMPUTER SYSTEMS	3	1	-	4	4	CC	ETCS202A	SOFTWARE ENGINEERING	4	-	-	4
	5	CC	ETCS217A	DATA STRUCTURES	4	-	-	4	5	SE	ETCS252A	SOFTWARE ENGINEERING LAB	-	-	2	1
	6	SE	ETCS 257A	DATA STRUCTURES LAB	-	-	2	1	6	SE	ETCS260A	Computer Organization & Architecture Lab	-	-	2	1
	7	SE	ETCS 255A	OPERATING SYSTEMS LAB	-	-	2	1	7	SE	ETCS262A	Analysis and Design of Algorithms Lab	-	-	2	1
	8	SE	ETCS365A	COMPUTER NETWORKS LAB	-	-	2	1	8	SE	ETEC258A	COMMUNICATION SYSTEM LAB	-	-	2	1
	9	SE	ETEC 256A	DIGITAL ELECTRONICS LAB	-	-	2	1								
				TOTAL	19	2	8	24				TOTAL	#REF!	#REF!	#REF!	20
Third	1	CC	ETCS 214A	Theory of Computation	3	1	-	4	1	CC	ETCA324A	.Net FRAMEWORK	4	-	-	4
	2	CC	ETCS 323A	Java Programming	4	-	-	4	2	CC	ETC520A	Internet Technologies	3	-	-	3
	3	CC	ETCS 206A	COMPUTER GRAPHICS	4	-	-	4	3	CC	ETCS401A	Artificial Intelligence	4	-	-	4
	4	SE	ETCS361A	Java Programming Lab	-	-	2	1	4	SE	ETCS451A	Artificial Intelligence Lab	-	-	2	1
	5	SE	ETCS258A	COMPUTER GRAPHICS LAB	-	-	2	1	5	SE	ETCA364A	.Net FRAMEWORK LAB	-	-	2	1
	6	CC	ETCS301A	Programming in MATLAB	2	-	-	2	6	CC	ETCS519A	BLOCKCHAINS	3	1	-	4
	7	SE	ETCS350A	Programming in MATLAB LAB	-	-	2	1	7	CC		DSE -3	4	-	-	4
	8	DE		DSE -1	3	-	-	3	8	SE		DSE -3 LAB	-	-	2	1
	9	DE		DSE -1 LAB	-	-	2	1	9	SE	ETCS464A	MAJOR PROJECT	-	-	-	6
	10	DE		DSE - 2	3	-	-	3								
	11	DE		DSE - 2 LAB	-	-	2	1				TOTAL	18	1	6	28
		SE		Value Added Course	3	-	0	0								
				TOTAL	22	1	10	25				TOTAL CREDITS				148

DSE -1							
(i)	CC	ETCS409A	Advanced Computer Networks	3	-	-	3
	SE	ETCS452A	Advanced Computer Networks Lab	-	-	2	1
(ii)	CC	ETCS410A	Mobile and Wireless Communication	3	-	-	3
	SE	ETCS453A	Mobile and Wireless Communication Lab	-	-	2	1
(iii)	CC	ETCS411A	Machine Learning	3	-	-	3
	SE	ETCS455A	Machine Learning Lab	-	-	2	1

DSE -2							
(i)	CC	ETCS517A	Soft Computing	3	-	-	3
	SE	ETCS559A	Soft Computing Lab	-	-	2	1
(ii)	CC	ETCS518A	Big Data Analytics	3	-	-	3
	SE	ETCS560A	Big Data Analytics Lab	-	-	2	1
(iii)	CC	ETCS515A	Ethical Hacking	3	-	-	3
	SE	ETCS557A	Ethical Hacking Lab	-	-	2	1

DSE -3							
(i)	CC	ETCS416A	Cloud Computing	4	-	-	4
	SE	ETCA362A	Cloud Computing Lab	-	-	2	1
(ii)	CC	ETCS417A	Data Warehousing and Data Mining	3	-	-	3
	SE	ETCS456A	Data Warehousing and Data Mining Lab	-	-	2	1
(iii)	CC	ETCS418A	Internet of Things	3	-	-	3
	SE	ETCS457A	Internet of Things Lab	-	-	2	1

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ETCA368	MAJOR PROJECT	C
		3

The major-project may be a complete hardware or a combination of hardware and software under the guidance of a Supervisor from the Department alone or jointly with a Supervisor drawn from R&D laboratory/Industry. This is expected to provide a good training for the student(s) in R&D work and technical leadership. The assignment to normally include:

1. Review and finalization of the Approach to the Problem relating to the assigned topic.
2. Preparing an Action Plan for conducting the investigation, including team work.
3. Detailed Analysis/Modelling/Simulation/Design/Problem Solving/Experiment as needed.
4. Final development of product/process, testing, results, conclusions and future directions.
5. Preparing a Dissertation in the standard format for being evaluated by the Department.
6. Final Seminar Presentation before a Departmental Committee.

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ETCA368A	MAJOR PROJECT	C
		3

The major-project may be a complete hardware or a combination of hardware and software under the guidance of a Supervisor from the Department alone or jointly with a Supervisor drawn from R&D laboratory/Industry. This is expected to provide a good training for the student(s) in R&D work and technical leadership. The assignment to normally include:

1. Review and finalization of the Approach to the Problem relating to the assigned topic.
2. Preparing an Action Plan for conducting the investigation, including team work.
3. Detailed Analysis/Modeling/Simulation/Design/Problem Solving/Experiment as needed.
4. Final development of product/process, testing, results, conclusions and future directions.
5. Preparing a Dissertation in the standard format for being evaluated by the Department.
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DEAN
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Sohna road, Gurugram
Haryana 122103
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ETCS464A	Major Project	L	T	P	C
Version 1.0		-	-	-	6
Pre-requisites/Exposure	--				
Co-requisites	--				

The course is designed to provide an opportunity to students to demonstrate the ability to devise, select and use a range of methodologies and tools to the Chosen/Given project, applying the theoretical knowledge to a real life situation. Experiential Learning outside classroom through self-exploration, practical experience, Industry, field experience, live experience, research, design projects etc.

The learning process in the Project seeks out and focuses attention on many latent attributes, which do not surface in the normal class room situations. These experiential learning attributes through project includes Intellectual ability, Professional judgment and decision making ability, Inter-disciplinary approach, Skills for data handling, Ability in written and oral presentation, Sense of responsibility Developing professional Skills Application of theory, concepts in given industry /practical / field scenario.

Course Outcomes

On completion of this course, the students will be able to

CO1. Use applied scientific knowledge to identify and implement relevant principles of mathematics and computer science.
C02. Use the relevant tools necessary for engineering practice.
CO3. Define overall needs and constraints to solve a problem and develop/ design a prescribed engineering sub-system.
CO4. Communicate effectively and learn to be a team player.

Catalog Description

Students are expected make a project based on the latest advancements related to the parent branch of Engineering. Students may opt for an in-disciplinary project (if feasible).
The project may be a complete hardware or a combination of hardware and software under the guidance of a Supervisor from the Department. This is expected to provide a good training for the student(s) in technical aspects

Student will be continuously evaluated during the semester in form of Project Progress Seminars. At the end of the semester, assessment of the research/project work of each student will be made by the board of examiners including supervisors on the basis of a viva-voce examination and the report submitted by the student.

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Course Content

The assignment to normally include:

1. Review and finalization of the Approach to the Problem relating to the assigned topic.
2. Preparing an Action Plan for conducting the investigation, including team work.
3. Detailed Analysis/Modelling/Simulation/Design/Problem Solving/Experiment as needed.
4. Final development of product/process, testing, results, conclusions and future directions.
5. Preparing a report in the standard format for being evaluated by the Department.
6. Final project presentation before a Departmental Committee.

Modes of Evaluation: Quiz I/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Quiz I	Attendance	Mid Term Exam	Presentation/ Assignment/ etc.	End Term Exam
Weightage (%)	10	10	20	10	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Use applied scientific knowledge to identify and implement relevant principles of mathematics and computer science.	PO3
CO2	Use the relevant tools necessary for engineering practice.	PO5
CO3	Define overall needs and constraints to solve a problem and develop/ design a prescribed engineering sub-system.	PO3
CO4	Communicate effectively and learn to be a team player.	PO10

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