MCA — **Year 2021-23 (Scheme of Studies as per Choice-Based Credit System (CBCS) and Learning Outcome-Based Curriculum Framework (LOCF))** — **SOET**

Year	SNo	Course Code	Course Title	L	T	P	C	EMP/ENT/SE/OP
			ODD SEMESTER					
FIRST	1	ETCA 801A	Problem Solving and Python Programming	3	1	-	4	EMP
	2	ETCA802A	Data Structures and Algorithms	3	1	-	4	SE
	3		Open Elective	3	-	-	3	SE
	4	ETCS 601A	Mathematical Foundations of Computer Science	3	1	-	4	SE
	5	ETCA 807A	Introduction to Database Management System	3	1	-	4	EMP/ENT
	6	ETCA 851A	Introduction to Database Management System Lab	0	-	2	1	EMP/ENT
	7	ETCA 853A	Problem Solving and Python Programming Lab	0	-	2	1	EMP
	8	ETCA 852A	Data Structures and Algorithms Lab	0	-	2	1	SE
	9		Audit Course - I	-	-	-	-	SE
	10		Value Added Course	3	-	-	-	SE
			TOTAL	**18**	**4**	**6**	**22**	

SNo	Course Code	Course Title	L	T	P	C	EMP/ENT/SE/OP
		EVEN SEMESTER					
1	ETCA 803A	Computer Organization and Assembly Language Programming	3	1	-	4	SE
2	ETCA 804A	Information Systems Analysis Design & Implementations	3	1	-	4	SE
3	ETCA 806A	Advanced Data Mining	3	1	-	4	EMP/ENT
4	ETCA812A	Web Programming	3	-	-	3	EMP/ENT
5	ETCA 810A	System and Network Administration	3	1	-	4	EMP
6	ETCA 858A	Computer Organization and Assembly Language Programming Lab	-	-	2	1	SE
7	ETCA 854A	Advanced Data Mining Lab	-	-	2	1	EMP/ENT
8	ETCA 856A	System and Network Administration Lab	-	-	2	1	EMP
9	ETCA860A	Web Programming Lab	-	-	2	1	EMP/ENT
10		Audit Course - II	-	-	-	-	SE
11		Value Added Course	3	-	-	-	SE
		TOTAL	**18**	**4**	**6**	**23**	

Year	SNo	Course Code	Course Title	L	T	P	C	
Second	1	ETEL 403A	Oral and Technical Communication	3	1	-	4	SE
	2	ETCA 827A	Devops	3	1	-	4	EMP/ENT
	3	ETCA 817A	AI and Applications	3	1	-	4	EMP/ENT
	4	ETCA 819A	Big Data Analytics and Applications	3	1	-	4	EMP/ENT
	5	ETCA 869A	Devops Lab	0	-	2	1	EMP/ENT
	6	ETCA 859A	AI and Applications Lab	0	-	2	1	EMP/ENT
	7	ETCA 861A	Seminar	0	-	2	1	SE
	8		**Departmental Electives - I***					
	i	ETCA 821A	Blockchains	3	1	-	4	EMP/ENT
		ETCA 863A	Blockchains Lab	0	-	2	1	EMP/ENT
	ii	ETCA 823A	Internet of Things and Applications	3	1	-	4	EMP/ENT
		ETCA 865A	Internet of Things Applications Lab	0	-	2	1	EMP/ENT
	iii	ETCA 825A	Quantum Computing	3	1	-	4	EMP/ENT
		ETCA 867A	Quantum Computing Lab	0	-	2	1	EMP/ENT
	9		Value Added Course	3	-	-	0	SE
			TOTAL	**18**	**5**	**8**	**24**	

*** One option to be selected (including Labs) from the adjacent courses based on the availability of faculty and background of the students**

SNo	Course Code	Course Title	L	T	P	C	
1	ETCA 872A	Project*	-	-	10	5	EMP/ENT
2	ETCA 874A	Industrial Training*	-	-	-	5	EMP/ENT

***One option to be selected between project and six month industrial training**

The project will be executed in university campus under supervision of concerned faculty

		TOTAL	**1**	**0**	**10**	**5**	
		Total Hours: Lect [L]+Prac [P]+Tut [T]			**90**		
		Total Credits [C]			**74**		

List of Audit Courses for 1st Semester

SNo	Course Code	Course Title	L	T	P	C	
1	ETCA 809A	Java Technologies	-	-	-	-	SE
2	ETCA 811A	Data Mining Concepts and Techniques	-	-	-	-	
3	ETCS 813A	Software Engineering Applications	-	-	-	-	

List of Audit Courses for 2nd Semester

SNo	Course Code	Course Title	L	T	P	C	
1	ETCA 812A	Linux System Fundamentals	-	-	-	-	SE
2	ETCA 814A	Numerical and Statistical Methods	-	-	-	-	
3	ETCA 816A	Soft Computing : Charaterstics and	-	-	-	-	

Value Added Courses

VAC101	SELF DEVELOPMENT	-	-	-	-	
VAC102	PREPARING STUDENTS FOR FUTURE	-	-	-	-	
VAC103	UNIVERSAL HUMAN VALUES AND PI	-	-	-	-	
VAC104	ETIQUETTE FOR PROFESSIONALS	-	-	-	-	
VAC105	CITIES FOR PEOPLE	-	-	-	-	
VAC106	INDIAN CONSTITUTION	-	-	-	-	
VAC107	ESSENCE OF INDIAN TRADITIONAL I	-	-	-	-	
VAC108	BOUTIQUE MANAGEMENT	-	-	-	-	
VAC109	UNDERSTANDING ADOLESCENTS BE	-	-	-	-	
VAC110	TIME MANAGEMENT	-	-	-	-	

Open Electives

SNo	Course Code	Course Title	L	T	P	C	
1	ETMC709A	Economic Analysis for Business	3	-	-	3	SE
2	ETMC725A	Accounting for Management	3	-	-	3	
3	ETMC731A	People's Behaviour in An Organisation	3	-	-	3	
4	ETMC803A	Ethical Delima and Profitability	3	-	-	3	

EMP	Employability
SE	Skill Enhancement
ENT	Entrepreneurship

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ETCA872A	Project	L	T	P	C
Version 1.0		-	-	10	5
Pre-requisites/Exposure	--				
Co-requisites	--				

Course Objectives

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.
CO2. 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

This course is a scholarly research project/design project that shows evidence of critical analysis and understanding of the topic. Project is design based where a student/group of students work on various aspects of an integrated design, application oriented, work oriented in nature is done under the supervision/guidance of faculty guide and/or external guide depending upon the place of course being undertaken is conducted allowing students to pursue their area of interest to greater depth help students to relate theory to actual practice in the industry help students to be innovative, creative and through independent study/team work.
The 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.

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.
3. Detailed Analysis/Modelling/Simulation/Design/Problem Solving/Experiment as needed.
4. Final development of product/process, testing, results, conclusions and future directions.

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5. Must submit at least two conference paper before evaluation by Department.
6. Preparing a project report in the standard format for being evaluated by the Department.
7. Final Presentation before a Departmental Committee.

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

Examination Scheme:

Components	Quiz	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.	**PO2**
CO4	Communicate effectively and learn to be a team player.	**PO10**

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Verified By: DEAN,SOET

ACADMIC YEAR 2021-2023

PROGRAM : MCA

		Engineering Knowledge	Problem analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The engineer and society	Environment and sustainability	Ethics	Individual or team work	Communication	Project management and finance	Life-long Learning	Application of Concepts	Ethical and Professional	Innovation
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
ETCA872A	Project		3	3		3					3			3		2

1=weakly mapped
2= moderately mapped
3=strongly mapped

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DEAN
School of Engineering & Technology (SOET)
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Haryana 122103

Verified By: DEAN,SOET

ETCA874A	Industrial Training	L	T	P	C
Version 1.0		-	-	-	5
Pre-requisites/Exposure	--				
Co-requisites	--				

Course Objectives

1. To learn how to carry out extensive research/study in the area of project implementation.
2. To be associated with an area of research/research project and contribute towards domain knowledge.
3. To learn technical report/project documentation writing.
4. To learn and implement the technology that in being used is the specific industry where the training is carried out.

Course Outcomes

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

CO1. Carry out the extensive literature survey/study in the area on internship provided.
CO2. Write technical documentation for the project implement.
CO3. Analyze and develop various methods and techniques applicable to the topic to study/area of implementation.
CO4. Have practical knowledge on the applications of project of implementation on society.

Catalog Description

The student will carry out a minimum of six months in industry or appropriate workplace/ academic and research institutions in India/abroad. The internship should give exposure to the practical aspects of the discipline. In addition, the student may also work on a specified task or project which may be assigned to him/her. The outcome of the internship/industrial training should be presented in the form of a report.

Course Content

The assignment will be defined by the organization where the student will carry of his industrial training.

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

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	PSO3	Ethics and Communication Skills

1=weakly mapped
2= moderately mapped
3=strongly mapped

Examination Scheme:

Components	Quiz	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	Carry out the extensive literature survey/study in the area on internship provided.	**PO2**
CO2	Write technical documentation for the project implement.	**PO5**
CO3	Analyze and developvarious methods and techniques applicable to the topic to study/area of implementation.	**PO3**
CO4	Have practical knowledge on the applications of project of implementation on society.	**PO6**

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Innovation	PSO3	2
Ethical and Professional Responsibilities	PSO2	
Application of Concepts	PSO1	3
Life-long Learning	PO12	
Project management and finance	PO11	
Communication	PO10	
Individual or team work	PO9	
Ethics	PO8	
Environment and sustainability	PO7	
The engineer and society	PO6	2
Modern tool usage	PO5	3
Conduct investigations of complex	PO4	
Design/development of solutions	PO3	3
Problem analysis	PO2	3
Engineering Knowledge	PO1	
	Course Title	Industrial Training
	Course Code	ETCA874A

1=weakly mapped
2= moderately mapped
3=strongly mapped

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