COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

(Abstract)

Department of Computer Applications - Modifications in the programme curriculum consequent to the introduction of mandatory MOOC courses - Resolution of the Academic Council - Communicated - Orders issued.

ACADEMIC A SECTION

No.CUSAT/AC(A).A3/4653/2024   Dated,KOCHI-22,31.10.2024

Read:-1. Item No.II (34) (1) of the minutes of the meeting of the Academic Council held on 07.09.2024
2. Notification No: Ac.A3/Faculty of Technology/2021 dated 17.12.2022
3. Notification No: Ac.A3/Faculty of Technology/2021 dated 08.08.2023

ORDER

The Academic Council meeting held on 07.09.2024, vide item referred as (1) above, considered along with the recommendations of it's standing committee and resolved to approve modifications in the programme curriculum of following courses offered by the Department of Computer Applications, consequent to the introduction of mandatory MOOC programmes, with effect from 2023 admission onwards.

a) Master of Computer Applications

b) M.Sc Computer Science with Specialization in Data Science

c) M.Sc Computer Science with Specialization in Artificial Intelligence

The modified curriculum of the above programmes are appended.

Orders are, therefore, issued accordingly.

Dr. Arun A U *
Registrar

To:
1. The Dean, Faculty of Technology
2. The Chairperson, BoS in Computer Applications
3. The Head, Department of Computer Applications
4. All AR/DR Examination wing - with a request to forward to concerned sections
5. The Director, IQAC/ DoA
6. CIRM/Conference Sections
7. PS To VC/PVC;PA To Registrar/CE.

* This is a computer generated document. Hence no signature is required.

MASTER OF COMPUTER APPLICATIONS

SYLLABUS REVISION (2023 admission onwards)

Course Code	Course Name	Marks			Hours			Credit
SEMESTER-1								
		CA	ES	Total	L	T	P	
22-382-0101	Mathematical Foundations for Computing	50	50	100	3	1	0	4
22-382-0102	Data Structures and Algorithm using C	50	50	100	3	1	0	4
22-382-0103	Digital Fundamentals and Computer Architecture	50	50	100	3	1	0	4
22-382-0104	Software Engineering	50	50	100	3	1	0	4
22-382-0105	Python Programming	50	50	100	3	1	0	4
22-382-0106	Data Structures Lab	50	50	100	0	1	2	2
22-382-0107	Python Programming Lab	50	50	100	0	1	2	2
	TOTAL							24
SEMESTER -II								
Course Code	Course Name	Marks			Hours			Credit
		CA	ES	Total	L	T	P	
22-382-0201	Computer Networks	50	50	100	3	1	0	4
22-382-0202	Operating Systems	50	50	100	3	1	0	4
22-382-0203	Machine Learning	50	50	100	3	1	0	4
22-382-0204	Object Oriented Programming	50	50	100	3	1	0	4
22-382-0205	Database Management Systems	50	50	100	3	1	0	4
22-382-0206	Java Lab (OOPS)	50	50	100	0	1	2	2
22-382-0207	Database Management Systems Lab	50	50	100	0	1	2	2
	TOTAL							24

SEMESTER -III								
Course Code	**Course Name**	**Marks**			**Hours**			**Credit**
		CA	ES	Total	L	T	P	
22-382-0301	Web Technologies and Programming	50	50	100	3	1	0	4
22-382-0302	Cryptography and Network Security	50	50	100	3	1	0	4
	Elective 1 -Interdisciplinary Elective	50	50	100	3	0	0	3
	Elective 2 - MOOC	0	100	100				3
	Elective 3	50	50	100	3	0	0	3
22-382-0303	Mini Project	50	0	50	0	1	6	4
	TOTAL							21
SEMESTER -IV								
Course Code	**Course Name**	**Marks**			**Hours**			**Credit**
		CA	ES	Total	L	T	P	
22-382-0401	Internship/Project	200	200	400	0	3	26	16

ELECTIVES

	Subject
ELECTIVE I- INTERDISCIPLINARY ELECTIVE	
24-382-0321	**ELECTIVE 2 -MOOC**
ELECTIVE 3	
22-382-0331	Natural Language Processing
22-382-0332	Internet of Things
22-382-0333	Explainable AI
22-382-0334	Bioinformatics
22-382-0335	Blockchain Technology
22-382-0336	Social Network Analysis
22-382-0337	Malware Analysis
22-382-0338	Design Thinking
22-382-0339	Semantic web
22-382-0340	Computer Vision
22-382-0341	Software Testing
22-382-0342	Network Security Essentials
22-382-0343	Digital Image Processing
22-382-0344	Cloud Computing

22-382-0345	Theory Of Computation
22-382-0346	Software Project Management
22-382-0347	Soft Computing Techniques
22-382-0348	Cyber Forensic
22-382-0349	Android Application Programming
22-382-0350	Deep Learning
22-382-0351	Big Data Analytics

M.Sc. COMPUTER SCIENCE with specialization in ARTIFICIAL INTELLIGENCE

SYLLABUS REVISION (2023 admission onwards)

		Marks			**Credit**	**Hours**		
SEMESTER- I								
Course Code	**Course Name**	**CA**	**ES**	**Total**	**Credit**	**L**	**T**	**P**
23-344-0101	Mathematics for Artificial Intelligence	50	50	100	4	3	1	0
23-344-0102	Python Programming	50	50	100	4	3	1	0
23-344-0103	Data Structures and Algorithms	50	50	100	4	3	1	0
23-344-0104	Statistics for Artificial Intelligence	50	50	100	4	3	1	0
23-344-0105	Advanced Computer Networks	50	50	100	4	3	1	0
23-344-0106	Python Programming Lab	50	50	100	2	0	0	4
23-344-0107	Data Structure Lab using C	50	50	100	2	0	0	4
Total					24	28		

		Marks			**Credit**	**Hours**		
SEMESTER – II								
Course Code	**Course Name**	**CA**	**ES**	**Total**	**Credit**	**L**	**T**	**P**
23-344-0201	Computing Paradigms	50	50	100	4	3	1	0
23-344-0202	Advanced Database Technologies	50	50	100	4	3	1	0
23-344-0203	Ethics in Artificial Intelligence	50	50	100	4	3	1	0
23-344-0204	Artificial Intelligence and Machine Learning	50	50	100	4	3	1	0
	Elective I	50	50	100	3	3	0	0
23-344-0206	Data Management Lab	50	50	100	2	0	0	4
23-344-0207	Minor Project	50		50	2	0	0	4
Total					23	27		

SEMESTER- III								
Course Code	**Course Name**	**Marks**			**Credit**	**Hours**		
		CA	ES	Total		L	T	P
23-344-0301	Deep Learning	50	50	100	4	3	1	0
	Elective II	50	50	100	3	3	0	0
	Elective III	50	50	100	3	3	0	0
	Elective IV – MOOC	0	100	100	3			
	Elective V-IE	50	50	100	3	3	0	0
23-344-0306	Seminar	50		50	2	0	0	4
23-344-0307	Minor Project	50		50	2	0	0	4
Total					20	24		

SEMESTER- IV								
Course Code	**Course Name**	**Marks**			**Credit**	**Hours**		
		CA	ES	Total		L	T	P
23-344-0401	Internship/Project Work and Course Viva	50	50	100	16	0	0	32
Total					16	32		

CA- Continuous Assessment
ES- End Semester
IE- Interdisciplinary Elective

LIST OF ELECTIVES

Elective I

23-344-0211 Fuzzy and Nature Inspired Computation
23-344-0212 Internet of Things
23-344-0213 Digital Image Processing
23-344-0214 Big Data Analytics
23-344-0215 Information Security
23-344-0216 Linux and Shell Programming

Elective II

23-344-0311 Reinforcement Learning

23-344-0312 Blockchain Technology

23-344-0313 Computer Vision

23-344-0314 Medical Image Analysis

23-344-315 Social Network Analysis

23-344-0316 Computer Forensics

23-344-0317 Design Thinking

23-344-0318 Affective Computing

23-344-0319 Cyber Physical Systems

23-344-0320 Bioinformatics

Elective III

23-344-0321 Explainable Artificial Intelligence

23-344-0322 Quantum Computing

23-344-0323 Human Computer Interaction

23-344-0324 Natural Language Processing

23-344-0325 Pattern Recognition

23-344-0326 Data Analytics for Healthcare

23-344-0327 Ethical Hacking

23-344-0328 Software Quality Assurance

23-344-0329 Speech Processing

23-344-0330 Virtual Reality and Augmented Reality

23-344-0331 Mobile Application Development

Elective IV

24-344-0341-MOOC

Elective V-IE

M.Sc. COMPUTER SCIENCE with specialisation in DATA SCIENCE

SYLLABUS REVISION (2023 admission onwards)

SEMESTER I

Course Code	Paper	L	T	P	Marks		Credit
					Sessional	Final	
22-359-0101	Statistical Foundations for Data Science	3	1	0	50	50	4
22-359-0102	Operating System Concepts	3	1	0	50	50	4
22-359-0103	Data Structures and Algorithms	3	1	0	50	50	4
22-359-0104	Python for Data Analytics	3	1	0	50	50	4
22-359-0105	Mathematics for Machine Learning	3	1	0	50	50	4
22-359-0106	Python Programming LAB			4	50		2
22-359-0107	Data Structure LAB			4	50		2
TOTAL							24

SEMESTER II

Course Code	Paper	L	T	P	Marks		Credit
					Sessional	Final	
22-359-0201	Networks and Data Communications	3	1	0	50	50	4
22-359-0202	Database Management Systems	3	1	0	50	50	4
22-359-0203	R for Data Analytics	3	1	0	50	50	4
22-359-0204	Machine Learning	3	1	0	50	50	4
	Elective I	3	1	0	50	50	4
22-359-0206	Data Analytics LAB (ML and R)			4	50		2
22-359-0207	Mini Project			4	50		2
	TOTAL						24

SEMESTER III

Course Code	Paper	L	T	P	Sessional	Final	Credit
					Marks		
22-359-0301	Deep Learning	3	1	0	50	50	4
	Elective II	3	0	0	50	50	3
	Elective III	3	0	0	50	50	3
	Elective IV -MOOC				0	100	3
	Elective V -IE	3	0	0	50	50	3
22-359-0306	Seminar			2	50		2
22-359-0307	Mini Project			4	50		2
	TOTAL						**20**

SEMESTER IV

Course Code	Paper	Sessional	Final	Credit
		Marks		
22-359-0401	Internship/Project Work	200	200	16
TOTAL				**16**

LIST OF ELECTIVES

Elective I

22-359-0211 Blockchain Technology

22-359-0212 Digital Image Processing

22-359-0213 Natural Language Processing

22-359-0214 Cryptography and Network Security

Elective II

22-359-0311 Explainable Artificial Intelligence

22-359-0312 Software Project Management

22-359-0313 Network Security Essentials

22-359-0314 Cloud Computing

22-359-0315 Internet of Things

22-359-0316 Android Application Programming

Elective III

22-359-0321 Big Data Analytics

22-359-0322 Cyber Forensics

22-359-0323 Computer Vision

22-359-0324 Social Network Analysis

22-359-0325 Virtualization and Containers

22-359-0326 Software Testing

Elective IV

24-359-0331-MOOC

Elective V-IE