ODL MCA

MASTER OF COMPUTER APPLICATIONS

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INTRODCUTION

Step into a realm of practicality within MCA classes, where learning mirrors the real-world scenarios. Embrace a diverse array of emerging specializations, ensuring your education resonates with the dynamic landscape of technology.

PROGRAMME OUTCOMES

Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program

1. **Analysis & design of complex problems:** Ability to apply knowledge of computer science concepts, principles & techniques to solve various computing problems.
2. **Coding Skills:** Apply and solve problems using computer programming and simulation.
3. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities for societal benefits.
4. **Communication:** Communicate effectively problem findings, and to be able to assimilate, write and present effective design documents to give and receive clear instructions.
5. **Societal Impact:** Acquire and apply advanced knowledge of concepts and participate in sustainable development.
6. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
7. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of upcoming information technology changes.

PROGRAMME SPECIFIC OUTCOMES

PSOs are statements that describe what the graduates of a specific engineering program should be able to do:

1. **PSO1:** Understand and comprehend advanced level of programming, data structures, databases, networking, mobile computing, information security and data analysis.
2. **PSO2:** Demonstrate competence in using computer science concepts and computational tools for simulation and digital transformation.
3. **PSO3:** Ability to effectively apply the information technology concepts to analyze, design and develop cost effective solutions to the societal problems.
4. **PSO4:** Provide user friendly and need based mobile, web or cloud based solutions to the society.
5. **PSO5:** Utilize computational tools to simulate and transform domains with ML/AI techniques.
6. **PSO6:** Competence in applying computer science concepts to simulate immersive AR/VR experiences.
7. **PSO7:** Apply computational tools to simulate cyber threats and develop defense mechanisms.

SALIENT FEATURES

- **Industrial Visits:** Encourage students to have maximum industrial exposure through visits for problem identification and emerging technologies
- **Industry ready:** Makes student industry ready
- **Holistic Development:** Participation in technical events, sports and cultural activities help in the holistic development of students
- **Projects:** Project driven courses are designed to enhance technical and presentation skills
- **Industry Immersion:** Training, projects and guest lecturers collaborated with industries help to learn from real life situations
- **Professional Enhancement:** In addition to core curricula, course offers subjects like communication, analytical and soft skills to enhance personality and employability.
- **Software Skills:** Curriculum is equipped with 21st century digital technologies for game designing and web designing and Android/iPhone Application Development.
- **Contemporary Curriculum:** Instill knowledge in the major areas of computing such as Programming, Databases, Web Development and Mobile Phone App Development.

PROGRAMMECODE: **DE1624**

DURATION OF THEPROGRAMME:

Minimum Duration 2 years

Maximum Duration 4 years

MEDIUM OF INSTRUCTION/EXAMINATION:

Medium of instruction and Examination shall be English.

PROGRAMME STRUCTURE					
Term	**Core Courses (CR I, CR II, CR III) CR I+II – (8+4) 12 x 4 Credits CR III - 2x 4 Credits**	**Discipline Specific Electives (DSE) 4 x 4 Credits**	**Skill Enhancement Courses (SEC) 4 x 4 Credits**	**Generic Electives (GE) 4 x 4 Credits**	**Credits**
I	Discipline Specific Core- I Discipline Specific Core- II Discipline Specific Core- III Discipline Specific Core- IV Discipline Specific Core- V		**SEC- I**		**24**
II	Discipline Specific Core- VI Discipline Specific Core-VII Discipline Specific Core- VIII Discipline Specific Core- IX Discipline Specific Core- X Discipline Specific Core- XI		**SEC- II**		**28**
III	Discipline Specific Core- XII **CR III –** Seminar on Summer Training OR Course from the GE basket 1 which is not chosen as Generic Elective (GE).	**DSE- I** **DSE- II**	**SEC-III**	**GE-I** **GE- II** **(**Finance, Management, Marketing, Research)	**28**
IV	**CR III -** Project Work	**DSE- III** **DSE-IV**	**SEC-IV**	**GE-III** **GE- IV** **(**Finance, Management, Marketing, Research)	**24**
Total	**56 Credits**	**16 Credits**	**16 Credits**	**16 Credits**	**104**

MASTER OF COMPUTER APPLICATIONS PROGRAMME SCHEME (DE1624)					
COURSE CODE	**COURSE TITLE**	**Cr.**	**CA**	**ETE (Th.)**	**ETE (Pr.)**
TERM 1					
DECAP437	SOFTWARE ENGINEERING PRACTICES	4	30	70	0
DECAP444	OBJECT ORIENTED PROGRAMMING USING C++	4	30	40	30
DECAP446	DATA WAREHOUSING AND DATA MINING	4	30	70	0
DECAP448	LINUX AND SHELL SCRIPTING	4	30	40	30
DECAP453	DATA COMMUNICATION AND NETWORKING	4	30	70	0
SEC-I	SKILL ENHANCEMENT COURSE I	4	-	-	-
DECAP010	PROGRAMMING IN C	S/U			
DECAP011	DATABASE MANAGEMENT SYSTEM	S/U			
Note: DECAP010 and DECAP011 are Bridge Courses. These courses are applicable for the students who completed their graduation in non-computer background (i.e. B.A., B.Com., B.Sc.)					
TERM 2					
DECAP615	PROGRAMMING IN JAVA	4	30	40	30
DECAP770	ADVANCED DATA STRUCTURES	4	30	40	30
DECAP456	INTRODUCTION TO BIG DATA	4	30	40	30
DECAP470	CLOUD COMPUTING	4	30	70	0
DEMTH403	MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE	4	30	70	0
DECAP472	WEB TECHNOLOGIES	4	30	40	30
SEC-II	SKILL ENHANCEMENT COURSE II	4	-	-	-
TERM 3					
DECAP776	PROGRAMMING IN PYTHON	4	30	40	30
SEC-III	SKILL ENHANCEMENT COURSE III	4	-	-	-
DSE-I	DISCIPLINE SPECIFIC ELECTIVE I	4	-	-	-
DSE-II	DISCIPLINE SPECIFIC ELECTIVE II	4	-	-	-
GE-I	GENERIC ELECTIVE I	4	-	-	-
GE-II	GENERIC ELECTIVE II	4	-	-	-
DECAP735	SEMINAR ON SUMMER TRAINING OR Course from the GE basket 1 which is not chosen as Generic Elective (GE).	4	30	0	70
TERM 4					
SEC-IV	SKILL ENHANCEMENT COURSE IV	4	-	-	-
DSE-III	DISCIPLINE SPECIFIC ELECTIVE III	4	-	-	-
DSE-IV	DISCIPLINE SPECIFIC ELECTIVE IV	4	-	-	-
GE-III	GENERIC ELECTIVE III	4	-	-	-
GE-IV	GENERIC ELECTIVE IV	4	-	-	-
DECAP788	PROJECT WORK	4	30	0	70
	TOTAL CREDITS	**104**			

DISCIPLINE SPECIFIC ELECTIVES (DSE)

MACHINE LEARNING & AI								
SR. NO.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**DSE**	**TERM**
1	DECAP737	MACHINE LEARNING	4	30	40	30	DSE-I	3
2	DECAP516	NATURAL LANGUAGE PROCESSING	4	30	40	30	DSE-II	3
3	DECAP527	DEEP LEARNING	4	30	40	30	DSE-III	4
4	DECAP794	ADVANCE DATA VISUALIZATION	4	30	40	30	DSE-IV	4

DATA SCIENCE								
SR. NO.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**DSE**	**TERM**
1	DECAP790	PROBABILITY AND STATISTICS	4	30	40	30	DSE-I	3
2	DECAP792	DATA SCIENCE TOOL BOX	4	30	40	30	DSE-II	3
3	DECAP794	ADVANCE DATA VISUALIZATION	4	30	40	30	DSE-III	4
4	DECAP737	MACHINE LEARNING	4	30	40	30	DSE-IV	4

CYBER SECURITY								
SR. NO.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**DSE**	**TERM**
1	DECAP660	NETWORK ADMINISTRATION	4	30	40	30	DSE-I	3
2	DECAP796	CYBER FORENSIC	4	30	40	30	DSE-II	3
3	DECAP661	SECURING NETWORKS AND IT INFRASTRUCTURE	4	30	40	30	DSE-III	4
4	DECAP662	VULNERABILITY ASSESSMENT AND PENETRATION TESTING	4	30	40	30	DSE-IV	4

FULL STACK WEB DEVELOPMENT								
SR. NO.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**DSE**	**TERM**
1	DECAP510	FRONT END WEB DEVELOPER	4	30	40	30	DSE-I	3
2	DECAP511	WEB DEVELOPMENT USING REACTJS	4	30	40	30	DSE-II	3
3	DECAP513	ADVANCED WEB DEVELOPMENT	4	30	40	30	DSE-III	4
4	DECAP514	WEB DEVELOPMENT IN PYTHON USING DJANGO	4	30	40	30	DSE-IV	4

AR/VR (GAME DEVELOPMENT)								
SR. NO.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**DSE**	**TERM**
1	DECAP473	GAME DEVELOPMENT USING UNITY ENGINE	4	30	40	30	DSE-I	3
2	DECAP824	UNREAL PROGRAMMING USING C++	4	30	40	30	DSE-II	3
3	DECAP825	GAME AI & REINFORCEMENT LEARNING	4	30	40	30	DSE-III	4
4	DECAP826	VIRTUAL REALITY AND AUGMENTED REALITY IN GAME DEVELOPMENT	4	30	40	30	DSE-IV	4

SKILL ENHANCEMENT COURSES (SEC) BASKET								
SR. NO.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**AREA**	**TERM**
1	DEPEA515	ANALYTICAL SKILLS-I	4	30	70	0	PROFESSIONAL ENHANCEMENT	1
2	DEPEA516	ANALYTICAL SKILLS-II	4	30	70	0	PROFESSIONAL ENHANCEMENT	2
3	DECAP538	ALGORITHM DESIGN AND ANALYSIS	4	30	40	30	COMPUTER APPLICATION	3
4	DECAP951	SOFTWARE PROJECT MANAGEMENT	4	30	70	0	COMPUTER APPLICATION	4

GENERIC ELECTIVE (GE) BASKET 1								
SR. No.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**ELECTIVE AREA**	**TERM**
1	DEMGN581	ORGANIZATIONAL BEHAVIOUR AND HUMAN RESOURCE DYNAMICS	4	30	70	0	GENERAL MANAGEMENT	3
2	DEMKT503	MARKETING MANAGEMENT	4	30	70	0	MARKETING	3
3	DEFIN542	CORPORATE FINANCE	4	30	70	0	FINANCE	3
GENERIC ELECTIVE (GE) BASKET 2								
SR. No.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**ELECTIVE AREA**	**TERM**
1	DEMGN578	INTERNATIONAL BUSINESS ENVIRONMENT	4	30	70	0	GENERAL MANAGEMENT	3
2	DEMKT509	CONSUMER BEHAVIOUR	4	30	70	0	MARKETING	3
3	DEFIN548	INTERNATIONAL FINANCIAL MANAGEMENT	4	30	70	0	FINANCE	3
GENERIC ELECTIVE (GE) BASKET 3								
SR. No.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**ELECTIVE AREA**	**TERM**
1	DEMGN801	BUSINESS ANALYTICS	4	30	70	0	GENERAL MANAGEMENT	4
2	DEMKT505	DIGITAL AND SOCIAL MEDIA MARKETING	4	30	70	0	MARKETING	4
3	DEFIN508	INTERNATIONAL BANKING AND FOREX MANAGEMENT	4	30	70	0	FINANCE	4
GENERIC ELECTIVE (GE) BASKET 4								
SR. No.	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**CA**	**ETE (Th.)**	**ETE (Pr.)**	**ELECTIVE AREA**	**TERM**
1	DEOPR639	OPERATIONS MANAGEMENT AND RESEARCH	4	30	70	0	GENERAL MANAGEMENT	4
2	DEMKT517	CUSTOMER RELATIONSHIP MANAGEMENT	4	30	70	0	MARKETING	4
3	DEFIN576	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	4	30	70	0	FINANCE	4

Note:

1. Students can adopt only one area from discipline specific elective basket that will be applicable for the whole program.
2. Students can adopt only one area from generic elective basket that will be applicable for the whole program.
3. In case of Seminar on Summer Training, student may choose one course against Seminar on Summer