

School of Computer Science and IT
कंप्यूटर विज्ञान एवं आईटी विद्याशाखा

PROGRAMME SUMMARY & FEE STRUCTURE

1. **Title of Programme:** Master of Computer Applications
2. **Programme Code:** MCA-21
3. **Programme Mode:** Semester
4. **Admission Cycle:** Twice every Year in Jan. And July
5. **Eligibility:**
 - a. Passed BCA/ Bachelor Degree in Computer Science Engineering or equivalent Degree like PGDCA diploma from UGC recognized University, A- Level from DOEACC with graduation, etc. (obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying Examination).

Or

 - b. B.Sc. / B.Com. / B.A. with Mathematics at 10+2 Level or at Graduation Level (obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying Examination), after admission candidates will complete additional bridge Courses as per the norms of the Uttarakhand Open University. For candidates who do not have Mathematics at 10+2 Level or at Graduation level, they have to enroll and complete an additional Mathematic course available at SWAYAM portal (Sr. Secondary Mathematics paper in SWAYAM portal by Dr. Rajendra Kumar Nayak, NIOS). The equivalent courses shall be identified from time to time and the details shall be provided in the University website.

Or

 - c. Candidates with 3-year polytechnic diploma in CSE/IT, BSc(IT/CS) and relevant BA/BSc programs will be exempted from the bridge course requirement for MCA program.
 - d. The exemption is contingent upon the condition that the completed syllabus of these courses matches more than 70% with the syllabus of the bridge course.

6. Duration:

Min: 2 Years

Max: 4 Years

7. Total Credit: 80

8. Counselling and Attendance as per the UGC-DEB / AICTE guidelines.

9. Programme Structure: The program structure of the MCA program is as follows

Programme Name & Abbreviation	Programme Code	Eligibility	Minimum (Yr)	Maximum (Yr)	SLM	Mode of Exam (Annual/Sem)	Year / Sem	No. of Courses	Programme Fees	Project/Workshop	Exam (@Rs 300/- per course)	Practical Exam	Viva-Voce	Miscellaneous	Degree Fee	Total
MASTER OF SCIENCE (INFORMATION TECHNOLOGY) –MSC(IT)	MSCIT-21	Passed BCA/BSc(IT/CS)/ (B.Sc. with Mathematics at 10+2 Level or at Graduation Level). Candidate not having mathematics at 10+2 or graduation will have to pass one qualifying mathematic course during the course of the programme (Sr. Secondary Mathematics paper in SWAYAM portal by Dr. Rajendra Kumar Nayak, NIOS). The equivalent courses shall be identified from time to time and the details shall be provided in the University website.	2	4	English	Sem	I	4	11100	-	1200	500	-	150	-	12950
							II	3	11100	-	900	500	-	-	-	12500
		III					4	11100	-	1200	500	-	-	-	12800	
		IV					4	11100	1000	1200	500	-	-	500	14300	
MASTER OF COMPUTER APPLICATIONS – MCA-21	MCA-21	Passed BCA/ Bachelor Degree in Computer Science Engineering or equivalent Degree like PGDCA diploma from UGC recognised University, A- Level from DOEACC with graduation, etc. ORB.Sc./ B.Com./ B.A. with Mathematics at 10+2 Level or at Graduation Level (obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying Examination), they have to complete 2 semester DCA program offered by Uttarakhand Open University as a bridge course. After the completion of the bridge course, the DCA diploma shall be awarded to these candidates and they will be admitted to first semester of two-year (four semester) MCA program. For candidates who do not have Mathematics at 10+2 Level or at Graduation level, they have to enrol and complete an additional Mathematic course available at SWAYAM portal (Sr. Secondary Mathematics paper in SWAYAM portal by Dr. Rajendra Kumar Nayak, NIOS). The equivalent courses shall be identified from time to time and the details shall be provided in the University website. Candidates with 3-year polytechnic diploma in CSE/IT, BSc (IT/CS) and relevant BA/BSc programs will be exempted from the bridge course requirement for MCA program. The exemption is contingent upon the condition that the completed syllabus of these courses matches more than 70% with the syllabus of the bridge course.	2	4	English	Sem	I	4	11100	-	1200	500	-	150	-	12950
							II	4	11100	-	1200	500	-	-	-	12800
							III	4	11100	-	1200	500	-	-	-	12800
							IV	3	11100	1000	900	-	-	500	13500	
MASTER OF SCIENCE (CYBER SECURITY) – M.SC. CYBER	MSC-CS-21	Graduation (Science/IT). Lateral Entry(IIIrd Semester): Post Graduate Diploma/Certificate in Cyber Security	2	4	English	Sem	I	5	11100	-	1500	-	-	150	-	12750
							II	4	11100	1000	1200	-	-	-	-	13300
							III	4	11100	-	1200	500	-	-	-	12800
							IV	4	11100	1000	1200	-	-	-	500	13800

Course Structure of 2-year MCA program

Total Credits: 80

SEMESTER I			
MCS-501	Discrete Mathematics	04	100 (80/20)
MCS-502	Object-Oriented Programming through C++	04	100 (80/20)
MCS-503	Software Engineering	04	100 (80/20)
MCS-504	Operating System	04	100 (80/20)
MCS-P1	Practical	04	100
SEMESTER II			
MCS-505	Database Management System	04	100 (80/20)
MCS-506	Introduction to Computer Networks	04	100 (80/20)
MCS-507	Design and Analysis of Algorithm	04	100 (80/20)
MCS-508	Programming in Java	04	100 (80/20)
MCS-P2	Practical	04	100
SEMESTER III			
MCS-601	Information Security Assurance: Framework, Standards & Industry Best Practices	04	100 (80/20)
MCS-602	Computer System Architecture	04	100 (80/20)
	Elective I	04	100 (80/20)
	Elective II	04	100 (80/20)
MCS-P3	Practical	04	100 (80/20)
SEMESTER IV			
MCS-604	Introduction to Mobile Architecture	04	100 (80/20)
	Elective III	04	100 (80/20)
	Elective IV	04	100 (80/20)
MCS-603	Project (200 marks) + Viva-Voce (100 marks)	08	300

Elective I

1. Web Technology (MCS-E1)
2. Introduction to Soft Computing (MCS-E2) (Offered through SWAYAM only)
3. Fuzzy Logic and Neural Networks (MCS-E3) (Offered through SWAYAM only)
4. Basics of Remote Sensing and GIS(MGIS-502)

Elective II

1. Fundamentals of Information Security (MIT(CS)-101)
2. Cyber Security Techniques (MIT(CS)-102)
3. Information System (MIT(CS)-104)
4. Digital Forensics (MIT(CS)-202)

Elective III

1. Formal Languages and Automata (MCA-E13)
2. Python Programming (MCA-E5) (Offered through SWAYAM only)
3. Artificial Intelligence (MCS-E6) (Offered through SWAYAM only)
4. Data Science for Engineers (MCS-E7) (Offered through SWAYAM only)

Elective IV

1. Information System for Business (MCS-E8)
2. Project Management (MCS-E9)
3. Wireless Networks (MCS-E10)
4. Introduction to Internet of Things (MCS-E11) (Offered through SWAYAM only)
5. Cloud Computing (MCS-E12) (Offered through SWAYAM only)

Note: Processing fee of Rs.250/course shall be applicable to facilitate credit transfer along with the application form and transcripts.