

Syllabus Structure
For
Post Graduate Programme
Regulation 2020



MASTER OF COMPUTER APPLICATIONS

Master of Computer Applications 2020-21

1st Semester [First Year]

S. No.	Subject Code	Subjects	Hours / Week			Credits
			L	T	P	
1	MCA20101	Problem Solving and Data Structures	4			3
2	MCA20102	Computer Organization and Architecture	3			3
3	MCA20103	Operating Systems	3			3
4	MCA20104	Computer Oriented Numerical Methods	5			4
5	MCA20105	Business Communication	3			3
Laboratories						
1	MCA20106	Problem Solving and Data Structures using C Laboratory			2	1
2	MCA20107	Computer Organization and Architecture Laboratory			2	1
3	MCA20108	Operating Systems Laboratory			2	1
4	MCA20109	Business Communication Laboratory			2	1
Total			18		8	20

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2nd Semester [First Year]

S. No.	Subject Code	Subjects	Hours / Week			Credits
			L	T	P	
1	MCA20201	Design and Analysis of Algorithms	4			4
2	MCA20202	Object Oriented Programming using JAVA	3			3
3	MCA20203	Database Management Systems	3			3
4	MCA20204	Discrete Mathematics	5			4
5	MCA20205	Professional Elective 1 *	3			3
Laboratories						
1	MCA20206	Design and Analysis of Algorithms Laboratory			2	1
2	MCA20207	Object Oriented Programming using JAVA Laboratory			2	1
3	MCA20208	Database Management Systems Laboratory			2	1
Total			18		6	20

* Professional Elective – I (Choose any one)
1. MCA 205A: Artificial Intelligence & Expert Systems
2. MCA 205B: Cloud Computing
3. MCA 205C: ERP and E-commerce
4. MCA 205D: Advanced Computer architecture
5. MCA 205E: Advanced Computer architecture
6. MCA 205F: PHP and My SQL
7. MCA 205G: Environmental Engineering

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3rd Semester [Second Year]

S. No.	Subject Code	Subjects	Hours / Week			Credits
			L	T	P	
1	MCA20301	Compiler Design	3			3
2	MCA20302	Computer Networks	3			3
3	MCA20303	Python Programming	4			4
4	MCA20304	Software Engineering	4			4
5	MCA20305	Professional Elective 2 **	3			3
Laboratories						
1	MCA20306	Computer Networks Laboratory			2	1
2	MCA20307	Python Programming Laboratory			2	1
3	MCA20308	Software Engineering Laboratory			2	1
Total			17		6	20

**Professional Elective-II (Choose any one)
1. MCA 305A: Data Analytics
2. MCA 305B: Cryptography and Network Security
3. MCA 305C: Machine Learning
4. MCA 305D: Computer Vision
5. MCA 305E: Big Data Analytics
6. MCA 305F: Entrepreneurship Development
7. MCA 305G: Software Testing

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4th Semester [Second Year]

S.No.	Subject Code	Subject	Hours / Week			Credits
			L	T	P	
1	MCA20401	Professional Elective 3 ***	3			3
2	MCA20402	Technical Seminar Result Writing			2	2
3	MCA20403	Industrial Training cum Project/ Entrepreneurship Training cum Project			15	15
Total			3		17	20

*** Professional Elective-III

1. MCA 401A: Internet of Things

2. MCA 401B: Block Chain

3. MCA 401C: Soft Computing

4. MCA 401D: Foundations of Statistical Natural Processing (NLP)

5. MCA 504E: Software Testing

6. MCA 504F: Marketing Management

7. MCA 505G: Open Source Technology

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PROFESSIONAL ELECTIVES

Professional Elective – I (Choose any one)	Professional Elective-II (Choose any one)	Professional Elective-III (Choose any one)
1. MCA 205A: Artificial Intelligence & Expert Systems	1. MCA 305A: Data Analytics	1. MCA 401A: Internet of Things
3. MCA 205B: Cloud Computing	2. MCA 305B: Cryptography and Network Security	2. MCA 401B: Block Chain
4. MCA 205C: ERP and E- commerce	3. MCA 305C: Machine Learning	3. MCA 401C: Soft Computing
5. MCA 205D: Advanced Computer architecture	4. MCA 305D: Computer Vision	4. MCA 401D: Foundations of Statistical Natural Processing (NLP)
5. MCA 205E: Advanced Computer architecture	5. MCA 305E: Big Data Analytics	5. MCA 504E: Software Testing
5. MCA 205F: PHP and My SQL	6. MCA 305F: Entrepreneurship Development	6. MCA 504F: Marketing Management
7. MCA 205G: Environmental Engineering	7. MCA 305G: Software Testing	7. MCA 505G: Open Source Technology

1st Semester [First Year]

Category	Course Particulars		Credit Particulars				Evaluation							Credits	
	CourseCode	CourseName	Hours Per Week				THEORY			PRACTICAL			Total Marks		
			L	T	P	C	CIA	SEE	Total	CIA	SEE	Total			
Professional Core Courses	MCA20101	Problem Solving and Data Structures	4			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20102	Computer Organization and Architecture	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20103	Operating Systems	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20104	Computer Oriented Numerical Methods	5			4	70	30	100	-	-	-	100	4	
Professional Core Courses	MCA20105	Business Communication	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20106	Problem Solving and Data Structures using C Laboratory				2				30	70	100	100	1	
	MCA20107	Computer Organization and Architecture Laboratory				2				30	70	100	100	1	
	MCA20108	Operating Systems Laboratory				2				30	70	100	100	1	
	MCA20109	Business Communication Laboratory				2				30	70	100	100	1	
Total			18			8	20			500			400	900	20

2nd Semester [First Year]

Category	Course Particulars		Credit Particulars				Evaluation							Credits	
	CourseCode	CourseName	Hours Per Week				THEORY			PRACTICAL			Total Marks		
			L	T	P	C	CIA	SEE	Total	CIA	SEE	Total			
Professional Core Courses	MCA20201	Design and Analysis of Algorithms	4			4	70	30	100	-	-	-	100	4	
Professional Core Courses	MCA20202	Object Oriented Programming using JAVA	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20203	Database Management Systems	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20204	Discrete Mathematics	5			4	70	30	100	-	-	-	100	4	
Professional Elective Courses	MCA20205	Professional Elective 1 *	3			3	70	30	100	-	-	-	100	3	
	MCA20206	Design and Analysis of Algorithms Laboratory				2	1				30	70	100	100	1
	MCA20207	Object Oriented Programming using JAVA Laboratory				2	1				30	70	100	100	1
	MCA20208	Database Management Systems Laboratory				2	1				30	70	100	100	1
Total			18			6	20			500			300	800	20

*** Professional Elective – I (Choose any one)**

1. MCA 205A: Artificial Intelligence & Expert Systems

2. MCA 205B: Cloud Computing

3. MCA 205C: ERP and E-commerce

4. MCA 205D: Advanced Computer architecture

5. MCA 205E: Advanced Computer architecture

6. MCA 205F: PHP and My SQL

7. MCA 205G: Environmental Engineering

3rd Semester [Second Year]

Category	Course Particulars		Credit Particulars				Evaluation							Credits	
	CourseCode	CourseName	Hours Per Week				THEORY			PRACTICAL			Total Marks		
			L	T	P	C	CIA	SEE	Total	CIA	SEE	Total			
Professional Core Courses	MCA20301	Compiler Design	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20302	Computer Networks	3			3	70	30	100	-	-	-	100	3	
Professional Core Courses	MCA20303	Python Programming	4			4	70	30	100	-	-	-	100	4	
Professional Core Courses	MCA20304	Software Engineering	4			4	70	30	100	-	-	-	100	4	
Professional Elective Courses	MCA20305	Professional Elective 2 **	3			3	70	30	100	-	-	-	100	3	
	MCA20306	Computer Networks Laboratory				2	1				30	70	100	100	1
	MCA20307	Python Programming Laboratory				2	1				30	70	100	100	1
	MCA20308	Software Engineering Laboratory				2	1				30	70	100	100	1
Total			17			6	20			500			300	800	20

****Professional Elective-II (Choose any one)**

1. MCA 305A: Data Analytics

2. MCA 305B: Cryptography and Network Security

3. MCA 305C: Machine Learning

4. MCA 305D: Computer Vision

5. MCA 305E: Big Data Analytics

6. MCA 305F: Entrepreneurship Development

7. MCA 305G: Software Testing

4th Semester [Second Year]

Category	Course Particulars		Credit Particulars				Evaluation							Credits
	CourseCode	CourseName	Hours Per Week				THEORY			PRACTICAL			Total Marks	
			L	T	P	C	CIA	SEE	Total	CIA	SEE	Total		
Professional Elective Courses	MCA20401	Professional Elective 3 ***	3			3	70	30	100	-	-	-	100	3
	MCA20402	Technical Seminar Result Writing			2	2							100	2
	MCA20403	Industrial Training cum Project/ Entrepreneurship Training cum Project			15	15							100	15
Total			3		17	20			100				200	20

***** Professional Elective-III**

1. MCA 401A: Internet of Things

2. MCA 401B: Block Chain

3. MCA 401C: Soft Computing

4. MCA 401D: Foundations of Statistical Natural Processing (NLP)

5. MCA 504E: Software Testing

6. MCA 504F: Marketing Management

7. MCA 505G: Open Source Technology