
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
Board of Studies (Computer Science)
Syllabus
of
M. Sc. (Computer Science)
Choice Based Credit System (Semester Pattern)
wef. 2023-24 as per NEP 2020

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Prasanna

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N. D. Shore

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M. Sc. (Computer Science)
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Pre-requisites to enrol for the M. Sc. Computer Science Programme:

The student who has completed the B. Sc. Course with Computer Science as one of the optional subject or Bachelor of Computer Application (BCA) or B. Sc. (IT) or B. Sc. (Data Science) with not less than 45% of aggregate marks (40% in case of student from reserved category) or equivalent CGPA from any of the recognised university is eligible to enrol for M. Sc. (Computer Science) Part I (Semester I). However, the student who has completed four-year B. Sc. course [B. Sc. (Honours)/(Research) as per NEP- 2020] with Computer Science/Information Technology/Data Science as the major subject or Bachelor of Computer Application (BCA) with not less than 45% of aggregate marks (40% in case of student from reserved category) or equivalent CGPA from any of the recognised university is eligible to enrol directly to M. Sc. (Computer Science) Part II (Semester III).

Credit distribution structure for two years Post Graduate Programme in Computer Science*

Year (2 Yr PG)	Level	Sem. (2 Yr)	Major		RM	OJT/FP	RP	Cum. Cr.	Degree
			Mandatory	Electives					
I	6.0	Sem. I	12 (3 theory + 2 Practical)	4	4			20	One Year PG Diploma
		Sem. II	12 (3 theory + 2 Practical)	4		4		20	
		Cum. Cr. For PG Diploma/ I year of PG		24	8	4	4	-	
Exit option: One Year PG Diploma 40 credits									
II	6.5	Sem. III	12 (3 theory +2 Practical)	4			4	20	PG Degree After 3 Yr UG or PG degree after 4-Ys UG
		Sem. IV	12 (3 theory +2 Practical)	4			6	22	
		Cum. Cr. For II year of PG		24	8		10	42	
Cum. Cr. For 2 year of PG degree			48	16	4	4	10	82	

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Semester I

S N	Course Category	Name of Course	Course Code	Teaching Scheme (hrs.)			Total Credit	Examination Scheme								
				(Th)	TU	P		Theory				Practical			Total	
								Exam Hrs.	SEE	CIE	Mi n.	SEE	CI E	Mi n.		
1	DSC	Artificial Intelligence	MCS1T01	4	-	-	4	3	80	20	40	-	-	-	100	
2	DSC	Compiler Construction	MCS1T02	4	-	-	4	3	80	20	40	-	-	-	100	
3	DSE	Elective 1	MCS1T03	4	-	-	4	3	80	20	40	-	-	-	100	
4	RM	Research Methodology	MCS1T04	4	-	-	4	3	80	20	40	-	-	-	100	
5	DSC	Practical Based on Paper MCS1T01 and MCS1T02	MCS1P01	-	-	6	3	-	-	-	-	50	50	50	100	
6	DSC	Practical Based on Paper MCS1T03 and MCS1T04	MCS1P02	-	-	6	3	-	-	-	-	50	50	50	100	
Total				16	-	12	22		320	80		100	100		600	

CIE = Continuous Internal Evaluation and SEE = Semester End Examination

Semester II

S N	Course Category	Name of Course	Course Code	Teaching Scheme (hrs.)			Total Credit	Examination Scheme								
				(Th)	TU	P		Theory				Practical				
								Exam Hrs.	SEE	CIE	Mi n.	SEE	CIE	Mi n.		
1	DSC	Cloud Computing	MCS2T05	4	-	-	4	3	80	20	40	-	-	-	100	
2	DSC	Machine Learning	MCS2T06	4	-	-	4	3	80	20	40	-	-	-	100	
3	DSE	Elective 2	MCS2T07	4	-	-	4	3	80	20	40	-	-	-	100	
4	OJT	Apprenticeship/Min i Project (Related to DSC)	MOJ2P01	-	-	8	4	3	-	-	-	50	50	50	100	
5	DSC	Practical Based on Paper MCS2T05and MCS2T06	MCS1P03	-	-	6	3	-	-	-	-	50	50	50	100	
6	DSC	Practical Based on Paper MCS2T07	MCS1P04	-	-	6	3	-	-	-	-	50	50	50	100	
Total				12	-	20	22		240	60		150	150		600	






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Semester III

S N	Course Category	Name of Course	Course Code	Teaching Scheme (hrs.)			Total Credit	Examination Scheme								Total
				(Th)	TU	P		Theory				Practical				
								Exam Hrs.	SEE	CIE	Mi n.	SEE	CIE	Mi n.		
1	DSC	Advanced Software Engineering	MCS3T08	4	-	-	4	3	80	20	40	-	-	-	100	
2	DSC	Network Security	MCS3T09	4	-	-	4	3	80	20	40	-	-	-	100	
3	DSC	Digital Image Processing	MCS3T10	4	-	-	4	3	80	20	40	-	-	-	100	
4	DSE	Elective 3	MCS3T11	4	-	-	4	3	80	20	40	-	-	-	100	
5	RP	Research Project/ Dissertation (Core)	MRP3P01	-	-	8	4	-	-	-	-	50	50	50	100	
6	DSC	Practical Based on Paper MCS3T08 .MCS3T09,MCS3 T10 and MCS3T11	MCS1P05	-	-	4	2	-	-	-	-	50	50	50	100	
Total				16	-	12	22		320	80		100	100		600	

Semester IV

S N	Course Category	Name of Course	Course Code	Teaching Scheme (hrs.)			Total Credit	Examination Scheme							Total
				(Th)	TU	P		Theory				Practical			
								Exam Hrs.	SEE	CIE	Mi n.	SEE	CIE	Mi n.	
1	DSC	Big Data Analytics	MCS4T12	4	-	-	4	3	80	20	40	-	-	-	100
2	DSC	Computer Vision	MCS4T13	4	-	-	4	3	80	20	40	-	-	-	100
3	DSC	Deep Learning	MCS4T14	4	-	-	4	3	80	20	40	-	-	-	100
4	DSE	Elective 4	MCS4T15	4	-	-	4	3	80	20	40	-	-	-	100
5	RP	Research Project/ Dissertation (Core)	MRP4P02	-	-	12	6	-	-	-	-	100	100	10 0	200
Total				16	-	12	22		320	80		100	100		600

Total Credits for Four Semesters (Two Year Course): = 88

Total Marks for Four Semesters (Two Year Course):= 2400

Abbreviations:

DSC: Discipline Specific Course, **DSE:** Discipline Specific Elective **SEE:** Semester End Examination, **CIE:** Continuous Internal Evaluation, **OJT:** On the Job Training (Internship/Apprenticeship), **FP:** Field Project, **RM:** Research Methodology, **RP:** Research Project

Elective papers:

In addition to the mandatory papers, the student has to opt for ONE elective paper in each semester from the basket of elective papers mentioned in the following table.

Basket for Elective Courses (4 Credits each)

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