

Autonomous College Affiliated to University of Mumbai, Approved by AICTE and Govt. of Maharashtra Conferred Autonomous Status by University Grants Commission (UGC) for 10 years w.e.f. A.Y. 2024-25 Institute Accredited with A+ Grade by National Assessment and Accreditation Council (NAAC) MCA Program Accredited by National Board of Accreditation (NBA) ISO 21001:2018 Certified

		Choi Propose	Ser ice-Based d TIMSCI	nester-I - Credit Gra DRAutono	M.C.A. (Le ding Schem my Scheme	e vel-6) ne (CBCGS-20 (w.e.f. A.Y. 20	024) 024-25)								
		Course Description	Teaching Scheme						Examination Scheme						
			Modes of Teaching / Learning / Weightage						Modes of Continuous Assessment / Evaluation						
	Course Code								Theory	/					
Sr. No.		Course Title		Hour	s Per Week		a r	50		50	Practical / Oral	Term Work/ Presentation			
							Credits	I	SA	DOD			lotal		
			Theory	Tutorial	Practical	Contact Hours		CA	MSE	ESE	ESE	TW			
1	MM-MCA-11	Mathematical Foundation for Data Science	3	1	-	4	4	25	25	50	-	25	125		
2	MM-MCA-12	Information Security	3	1	-	4	4	25	25	50	-	25	125		
3	MM-MCA-13	Java for Software Development	3	-	-	3	3	25	25	50	-	-	100		
4	MM-MCA-14	Advanced Database System and Data Mining Techniques	3	-	-	3	3	25	25	50	-	-	100		
5	ME-MCA-11X	Open Elective I	3	1	-	4	4	25	25	50	-	25	125		
6	MM-MCA-L11	Java for Software Development Lab	-	-	2	2	1	-	-	-	50	50	100		
7	MM-MCA-L12	Advanced Database System and Data Mining Techniques Lab using Python	-	-	2	2	1	I	-	-	50	50	100		
8	MM-MCA-L13	Data structure and Applications Lab using Java	-	-	4	4	2	-	-	-	50	50	100		
9	MM-MCA-L14	Advanced Web Technology Lab	-	-	4	4	2	-	-	-	50	50	100		
10	OJT-MCA-11	In-Semester Capstone Project	-	-	2	2	1	-	-	-	-	25+25	50		
		Sub-Total	15	3	14	32	25			Tot	tal marks (Academic))	1025		
		Course Description			Audit Co	urse (Passing	is mandato	ry fo	r this c	ourse)		Term Work			
1	AC-MCA-11	Competitive Programming	1	-	-	1	(Non Credit)				-	25	25		
		Sub-Total	1	-	-	1	-			Tota	l marks (Audit cours	e)	25		
		Total	16	3	14	33	25			(Grand Total marks		1050		



Thakur Educational Trust's (Regd.)

THAKUR INSTITUTE OF MANAGEMENT STUDIES, CAREER DEVELOPMENT & RESEARCH

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	Open Elective I											
Sr. No.	Course code	Course Name										
1	ME-MCA-111	Research Ethics, IPR and Patents										
2	ME-MCA-112	Operational Research										
3	ME-MCA-113	Green IT & Sustainability										
4	ME-MCA-114	Financial Accounting and Management										
5	ME-MCA-115	Entrepreneurship Management										

Bridge Course (Non IT/ CS Students)

		Choi Proposec	Se ce-Based I TIMSC	emester – l Credit G DRAutor	I- M.C.A. trading Scl tomy Sche	(Level-6) neme (CBCG me (w.e.f. A.	S-2024) Y. 2024) -25)						
Course Description				Т	eaching Scl	heme		Examination Scheme						
			Mod	les of Teac	ching / Lea	rning / Weight	tage	Modes of Continuous Assessment / Evaluation						
									Theory					
Sr. No.	Course Code	Course Title	Hours Per Week Credits					50		50	Practical / Oral	Term Work		
								ISA					Total	
			Theory	Tutorial	Practical	Contact Hours		СА	MSE	ESE	ESE	TW		
1	BR-MCA-11	Object Oriented Programming with Java	3	-	-	3	-	25	25	50	-	-	100	
2	BR-MCA-L11	Object Oriented Programming with Java Lab	-	-	2	2	-	-	-	-	50	50	100	
3	BR-MCA-L12	Fundamentals of Web Technologies Lab	-	-	4	4	-	-	-	-	50	50	100	
		Sub-Total	3	-	6	9	-			Total n	arks (Academic)		300	



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		Pr	Choice-H roposed TI	Semester Based Credit MSCDRAu	–II- M.C.A t Grading Scl tonomy Sche	. (Level-6) heme (CBCGS-2 me (w.e.f. A.Y. 2	2024) 2024-25)							
	C	Course Description			Teaching S	cheme		Examination Scheme						
]	Modes of T	eaching / Le	arning / Weight	tage		Modes	of Cont	inuous Assessmen	t / Evaluation		
									Theory			Term Work/ Presentation		
Sr. No.	Course Code	Course Title		Hour	s Per Week			5	50	50	Practical / Oral			
110.							Credits	ISA					Total	
			Theory	Tutorial	Practical	Contact Hours		CA	MSE	ESE	ESE	ТW		
1	MM-MCA-21	Artificial Intelligence & Machine Learning	3	-	-	3	3	25	25	50	-	-	100	
2	RM-MCA-21	Research Methodology	3	1	-	4	4	25	25	50	-	25	125	
3	ME-MCA-21X	Track Elective I	3	-	-	3	3	25	25	50	-	-	100	
4	ME-MCA-22X	Track Elective II	3	-	-	3	3	25	25	50	-	-	100	
5	MM-MCA-L21	Artificial Intelligence & Machine Learning Lab using Python	-	-	2	2	1	-	-	-	50	50	100	
6	ME-MCA-L21X	Track Elective I Lab	-	-	2	2	1	-	-	-	50	50	100	
7	ME-MCA-L22X	Track Elective II Lab	-	-	2	2	1	-	-	-	50	50	100	
8	MM-MCA-L22	Full-stack Development Lab	-	-	4	4	2	-	-	-	50	50	100	
9	MM-MCA-L23	Skill based Lab Course-Devops Lab	-	-	2	2	1	-	-	-	50	50	100	
10	MM-MCA-L24	Communication & Soft Skill Development Lab	-	-	2	2	1	-	-	-	-	50	50	
11	OJT-MCA-21	In-semester Capstone Project	-	-	2	2	1	-	-	-	-	25+25	50	
		Sub-Total	12	1	16	29	21			Total m	arks (Academic)		1025	
	C	course Description			Audit (Course (Passing	is mandatory	for this	s course)			Term Work		
1	AC-MCA-21	Competitive Programming and Aptitude Development	1	-	-	1	(Non Credit)			-		25	25	
		Sub-Total	1	-	-	1	-		Т	otal mar	ks (Audit Course))	25	
		Total	13	1	16	30	21			Gran	d Total marks		1050	

Exit option with Post Graduate Diploma with Computer Applications (46 Credits) after Three Year UG Degree with additional 4 credits of OJT.



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	Track Electives I												
		-	Frack Elective I Theory		Track Elective I Lab								
Sr. No.	Track Name	Course Code	Course 1 (Sem II)	Course Code	Course 1 Lab (Sem II)								
1	Software Testing	ME-MCA-211	Software Testing and Quality Assurance	ME-MCA-L211	Software Testing and Quality Assurance Lab								
2	Digital Marketing	ME-MCA-212	Digital Marketing Essentials	ME-MCA-L212	Digital Marketing Essentials Lab								
3	Cyber Security	ME-MCA-213	Ethical Hacking	ME-MCA-L213	Ethical Hacking Lab								
			Track Electives II										
		1	Frack Elective II Theory	Track Elective II Lab									
Sr. No.	Track Name	Course Code	Course 2 (Sem II)	Course Code	Course 2 Lab (Sem II)								
1	Software Testing	ME-MCA-221	Quality Metric and Performance Measurement	ME-MCA-L221	Quality Metric and Performance Measurement Lab								
2	Digital Marketing	ME-MCA-222	Advanced Digital Marketing	ME-MCA-L222	Advanced Digital Marketing Lab								
3	Cyber Security	ME-MCA-223	Digital Forensic	ME-MCA-L223	Digital Forensic Lab								



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		Choice	Semest Based C	t <mark>er –III-</mark> redit Gra	M.C.A. (ding Sch	(Level-6.5) eme (CBC) GS-2024	-)						
		Proposed T	TIMSCDF	Autono	my Scher	ne (w.e.f. A	A.Y. 2024	4-25)						
		Course Description		Te	aching Sc	heme				Exan	ination Scher	ne		
			Mode	s of Teacl	ning / Lea	rning / Wei	ghtage	Modes of Continuous Assessment / Evaluation						
								Theory						
Sr.	Course Code	Course Title		Hours	Per Weel	ĸ		50		50	Practical / Oral	Term Work/ Presentation		
NO.								ISA					Total	
			Theory	Tutorial	Practical	Contact Hours		CA	MSE	ESE	ESE	TW		
1	MM-MCA-31	Deep Learning	3	-	-	3	3	25	25	50	-	-	100	
2	ME-MCA-31X	Professional Elective I	3	-	-	3	3	25	25	50	-	-	100	
3	ME-MCA-32X	Track Elective III	3	-	-	3	3	25	25	50	-	-	100	
4	ME-MCA-33X	Open Elective II	3	1	-	4	4	25	25	50	-	25	125	
5	MM-MCA-L31	Deep Learning Lab	-	-	2	2	1	-	-	-	50	50	100	
6	ME-MCA-L31X	Professional Elective I Lab	-	-	2	2	1	-	-	-	50	50	100	
7	ME-MCA-L32X	Track Elective III Lab	-	-	2	2	1	-	-	-	50	50	100	
8	MM-MCA-L32	Mobile Computing Lab	-	-	4	4	2	-	-	-	50	50	100	
9	RP-MCA-31	Research Project	-	-	1+7#	1+7#	4	-	-	-	-	75+75	150	
10	RP-MCA-32	Technical Research Paper writing	-	-	1+3#	1+3#	2	-	-	-	-	25+25	50	
11	FP-MCA-31	Institute Social Responsibility (ISR)	-	-	-	40*	1	-	-	-	-	50	50	
		Total	12	1	12	25	25		Grand Total marks 107					

Work load only for students

* Credit allocated in Sem III is based on 40 hrs of ISR work completed by the student in semesters I-III.



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	Track Electives III												
]	Frack Elective III Theory	Track Elective III Lab									
Sr. No.	Track Name	Course Code	Course 3 (Sem III)	Course Code	Course 3 Lab (Sem III)								
1	Software Testing	ME-MCA-321	Risk Analysis and Management	ME-MCA-L321	Risk Analysis and Management Lab								
2	Digital Marketing	ME-MCA-322	Digital Marketing Trends and Emerging Technologies	ME-MCA-L322	Digital Marketing Trends and Emerging Technologies Lab								
3	Cyber Security	ME-MCA-323	Vulnerability Assessment & Penetration Testing	ME-MCA-L323	Vulnerability Assessment & Penetration Testing Lab								

	Professional Electives I											
]	Professional Elective Theory	Professional Elective Lab									
Sr. No.	Course Code	Course Name	Course Code	Course Name								
1	ME-MCA-311	Big Data Analytics	ME-MCA-L311	Big Data Analytics Lab								
2	ME-MCA-312	Internet of Things	ME-MCA-L312	Internet of Things Lab								
3	ME-MCA-313	Block Chain	ME-MCA-L313	BlockChain Lab								
4	ME-MCA-314	Robotic Process Automation	ME-MCA-L314	Robotic Process Automation Lab								
5	ME-MCA-315	Distributed System & Cloud Computing	ME-MCA-L315	Distributed System & Cloud Computing Lab								
6	ME-MCA-316	Natural Language Processing	ME-MCA-L316	Natural Language Processing Lab								

	Open Electives II										
Sr. No.	Course code	Course Name									
1	ME-MCA-331	Design Thinking									
2	ME-MCA-332	Management Information System									
3	ME-MCA-333	Information Technology in Healthcare									
4	ME-MCA-334	Information Technology in Agriculture									
5	ME-MCA-335	Renewable Energy Technologies									



Website : www.timscdrmumbai.in www.thakureducation.org

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	Semester –IV/M.C.A. (Level-6.5) Choice-Based Credit Grading Scheme (CBCGS-2024) Proposed TIMSCDRAutonomy Scheme (w.e.f. A.Y.2024-25)												
	Course De	escription		Те	aching Sc	cheme		Ex	amination Scher	ne			
	Course Code			Hours	Per Wee	k		IS	SA	ESE			
Sr. No.		Course Title	Theory	Tutorial	Practical	Contact Hours	Credits	Mid Term Presentation I	Mid Term Presentation II	Internship Project Final Presentation	Total		
1	OJT-MCA-41	Master Thesis (Internship Project)	-	-	40	40	14	75	75	150	300		
2	ME-MCA-41	MOOCs	6#	-	-	-	6!	-	-	-	-		
	Tot	tal	6	-	40	40	20		Total marks		300		

Work load only for students

! Credits transferred from MOOC course, MOOC may be taken in any of semesters I - IV

Award of Master of Computer Applications Degree , MCA (91 Credits)

Guidelines for the Semester:

Semester Conduct:

- 1. The Academic year will be conducted through two semesters. Odd Semester (1st July-31st December) and Even Semester (1st January-30th June).
- 2. The credit calculation is
 - a. Theory/Tutorial:1 credit=1 hr
 - b. Practical/Project Based Learning: 1 credit = 2 hrs
 - c. Research Based Learning: 1 credit=1 hrs
 - d. Experiential Learning/Internship: 1 credit= 40 hrs
 - e. Syllabus is linked with level 6 of NSQF for 1st year and 6.5 for 2nd year.
- 3. Track elective chosen by a student in Semester II will continue in Semester III.



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Evaluation and Assessment:

- 1. Summative assessment will be done through the following
 - a. ISA In-Semester Assessment(50 marks) evaluated through MSE(Mid Semester Examination) and CA(Continuous Assessment)
 - b. ESE End Semester Examination(50 marks).
- 2. MSE of 25 marks shall be conducted for 1 hour 15 Minutes after completion of 40-50% of the Syllabus.
- 3. Two CAs of 25 marks will be conducted, average of which will be taken
- 4. ESE shall be conducted for 50 marks at semester end of 2 hours duration.
- 5. The In-Semester Capstone Project will be evaluated at the end of semester.
- 6. Formative assessment will be carried out in every subject through polls/ quiz / case studies / discussions/ presentations/ assignments or any other tool.
- 7. Credits allotted in semester III to ISR are based on the work done during Semester I III.
- 8. MOOC may be taken in any of semesters I IV but accounted for in semester IV only. MOOC can be done from SWAYAM-NPTEL/MKCL /NITTER/ISRO/NIELIT/Institute having NIRF ranking within 100 etc.
- 9. Master Thesis (Industry Project) will be evaluated 2 times in-semester followed by the end semester presentation.
- 10. In-semester Capstone Project may be based on Healthcare, Agriculture, Education, Banking and Insurance etc.