

Pre Revision

Syllabus of M.Tech.(CSE) – College of Computing Sciences &IT, TMU Moradabad .



Study & Evaluation Scheme

Of

Master of Technology Computer Science & Engineering
[Applicable for the Batch 2018-19]



**COLLEGE OF COMPUTING SCIENCES &
INFORMATION TECHNOLOGY**

Syllabus Applicable w. e. f. Academic Session 2018-19

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Study and Evaluation Scheme
Course: M.Tech. (CSE)

SEMESTER I

S.N	Subject Code	Subject	Periods			Credits	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	MCS107	Data Warehousing and Mining	3	1	0	4	40	60	100
2	MCS 111	Advanced Database System	3	1	0	4	40	60	100
3	MCS 112	Advanced Data Structure and Algorithms.	3	1	0	4	40	60	100
Elective I									
4	MCS102	Advanced Computer Architecture	3	1	0	4	40	60	100
	MCS104	Advanced Software Engineering							
	MCS106	Advanced Real Time Operating System							
5	MCS 153	Data Warehousing and Mining Lab	0	0	4	2	50	50	100
6	MCS 154	Advanced Database System Lab	0	0	4	2	50	50	100
7	MCS 155	Advanced Data Structure and Algorithms Lab	0	0	4	2	50	50	100
		Total	12	4	12	22	310	390	700

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SEMESTER II

S.N.	Subject Code	Subject	Periods			Credits	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	MCS202	Advanced Computer Network	3	1	0	4	40	60	100
2	MCS204	Big Data Analytics and Business Intelligence	3	1	0	4	40	60	100
Elective II									
3	MCS 235	Genetic Algorithms	3	1	0	4	40	60	100
	MCS 236	Software Project Management							
	MCS 237	Mobile Computing							
	MCS 238	Natural Language Processing							
Elective III									
4	MCS 231	Pattern Recognition and Image Processing	3	1	0	4	40	60	100
	MCS 232	Neural Networks							
	MCS 240	Software Testing							
5	MCS 252	Advanced Computer Network Lab	0	0	4	2	50	50	100
6	MCS 253	Big Data Lab	0	0	4	2	50	50	100
7	MCS 291	Seminar	0	0	0	2	50	50	100
		Total	12	4	8	22	310	390	700

SEMESTER III





S.N.	Subject Code	Subject	Periods			Credits	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	MCS303	Network Security and Cryptography	3	1	0	4	40	60	100
2	MCS304	Artificial Intelligence and Machine Learning	3	1	0	4	40	60	100
3	MCS339	Cloud Computing	3	1	0	4	40	60	100
Elective IV									
4	MCS 337	Distributed and Parallel Computing	3	1	0	4	40	60	100
	MCS 344	Computational Technique using Matlab							
	MCS345	Digital Image Processing							
5	MCS 353	Artificial Intelligence And Machine Learning Lab	0	0	4	2	50	50	100
6	MCS 392	Dissertation Phase-I	0	0	0	4	50	50	100
		Total	12	4	4	22	260	340	600



SEMESTER IV

S.N.	Subject Code	Subject	Periods			Credits	Evaluation Scheme		
			L	T	P		Internal	External	Total
1	MCS 491	Dissertation Phase-2	0	0	0	12	50	50	100
		Total	0	0	0	12	50	50	100

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Post Revision

Syllabus of M.Tech CSE -College of Computing Sciences & IT, TMU Moradabad



Study & Evaluation Scheme

of

Master of Technology Computer Science & Engineering

[Applicable w.e.f. Academic Session – 2019-20 till revised]

[As per CBCS guidelines given by UGC]



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M.Tech. (CSE) Curriculum

M.Tech. (CSE)-Semester I

S.N	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	PCC-1	MCS107	Data Warehousing and Mining	3	1	0	4	40	60	100
2	PCC-2	MCS 111	Advanced Database System	3	1	0	4	40	60	100
3	PCC-3	MCS 112	Advanced Data Structure and Algorithms.	3	1	0	4	40	60	100
4	PEC-1		Professional Elective Course I: Elective-1	3	1	0	4	40	60	100
			Elective-2							
			Elective-3							
5	LC-1	MCS 153	Data Warehousing and Mining Lab	0	0	4	2	50	50	100
6	LC-2	MCS 154	Advanced Database System Lab	0	0	4	2	50	50	100
7	LC-3	MCS 155	Advanced Data Structure and Algorithms Lab	0	0	4	2	50	50	100
Total				12	4	12	22	310	390	700





M.Tech. (CSE)-Semester II

S.N	Category	Course	Course	Periods			Credit	Evaluation Scheme		
		Code		L	T	P		Internal	External	Total
1	PCC-4	MCS 202	Advanced Computer Network	3	1	0	4	40	60	100
2	PCC-5	MCS 204	Big Data Analytics and Business Intelligence	3	1	0	4	40	60	100
3	PCC-6	MCS 205	Semantic Web and Social Networks	3	1	0	4	40	60	100
4	PEC-2		Professional Elective Course II:	3	1	0	4	40	60	100
			Elective-1							
			Elective-2							
			Elective-3							
			Elective-4							
			Elective-5							
5	LC-4	MCS 252	Advanced Computer Network Lab	0	0	4	2	50	50	100
6	LC-5	MCS 253	Big Data Lab	0	0	4	2	50	50	100
7	Seminar	MCS 291	Seminar	0	0	0	2	50	50	100
Total				12	4	8	22	310	390	700





M.Tech. (CSE)-Semester III

S.N	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	PCC-7	MCS 303	Network Security and Cryptography	3	1	0	4	40	60	100
2	PCC-8	MCS 304	Artificial Intelligence and Machine Learning	3	1	0	4	40	60	100
3	PCC-9	MCS 339	Cloud Computing	3	1	0	4	40	60	100
4	PEC-3		Professional Elective Course III: Elective-1	3	1	0	4	40	60	100
			Elective-2							
			Elective-3							
5	LC-6	MCS 353	Artificial Intelligence And Machine Learning Lab	0	0	4	2	50	50	100
6	Dissertation	MCS 392	Dissertation I	0	0	0	4	50	50	100
			Total	12	4	4	22	260	340	600

M.Tech. (CSE)-Semester IV

S. N	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	Dissertation	MCS 491	Dissertation II	0	0	0	12	50	50	100
			Total	0	0	0	12	50	50	100





ELECTIVE COURSES OFFERED

Professional Elective Courses (PEC)

S.No	Code	Course	L	T	P	Credit
Semester I (Any One)						
1	MCS102	Advanced Computer Architecture	3	1	0	4
2	MCS104	Advanced Software Engineering	3	1	0	4
3	MCS106	Advanced Real Time Operating System	3	1	0	4
Semester II (Any One)						
4	MCS 231	Pattern Recognition and Image Processing	3	1	0	4
5	MCS 232	Neural Networks	3	1	0	4
6	MCS 235	Genetic Algorithms	3	1	0	4
7	MCS 238	Natural Language Processing	3	1	0	4
8	MCS 240	Software Testing	3	1	0	4
Semester III (Any One)						
9	MCS 337	Distributed and Parallel Computing	3	1	0	4
10	MCS 344	Computational Technique using Matlab	3	1	0	4
11	MCS 345	Digital Image Processing	3	1	0	4





Course Code: MCS 205	Professional Core Course-6 M.Tech- Semester II SEMANTIC WEB AND SOCIAL NETWORKS	L-3 T-1 P-0 C-4
Course Outcomes:	On completion of the course, the students will be :	
CO1	Understanding the concepts of AI and their role in the semantic web	
CO2	Understanding and analyzing the concepts of Ontology's languages.	
CO3	Understanding and analyzing the concepts of Ontology Engineering, Ontology Methods.	
CO4	Understanding and Analyzing the concepts of Semantic Web and Semantic Search Technology	
CO5	Applying and analyzing the concepts of social networks analysis.	
Course Content		
Unit-1:	Web Intelligence Thinking and Intelligent Web Applications, The Information Age ,The World Wide Web, Limitations of Today's Web, The Next Generation Web, Machine Intelligence, Artificial Intelligence, Ontology, Inference engines, Software Agents, Berners-Lee www, Semantic Road Map, Logic on the semantic Web.	8 Hours
Unit-2:	Knowledge Representation for the Semantic Web Ontologies and their role in the semantic web, Ontologies Languages for the Semantic Web – Resource Description Framework(RDF) / RDF Schema, Ontology Web Language(OWL), UML, XML/XML Schema.	8 Hours
Unit-3:	Ontology Engineering Ontology Engineering, Constructing Ontology, Ontology Development Tools, Ontology Methods, Ontology Sharing and Merging, Ontology Libraries and Ontology Mapping, Logic, Rule and Inference Engines.	8 Hours
Unit-4:	Semantic Web Applications, Services and Technology Semantic Web applications and services, Semantic Search, e-learning, Semantic Bioinformatics, Knowledge Base ,XML Based Web Services, Creating an OWL-S Ontology for Web Services, Semantic Search Technology, Web Search Agents and Semantic Methods.	8 Hours
Unit-5:	Social Network Analysis and semantic web What is social Networks analysis, development of the social networks analysis, Electronic Sources for Network Analysis – Electronic Discussion networks, Blogs and Online Communities, Web Based Networks. Building Semantic Web Applications with social network features.	8 Hours
Text Book:	1. Berners Lee, Godel and Turing , "Thinking on the Web", Wiley , 2008.	
Reference Books:	1. J.Davies, R.Studer, P.Warren, <i>Semantic Web Technologies, Trends and Research in Ontology Based Systems</i> , John Wiley & Sons, 2006. 2. Liyang Lu Chapman , <i>Semantic Web and Semantic Web Services</i> ,Hall/CRC Publishers, 2007. 3. HeinerStucken Schmidt, Frank Van Harmelen, <i>Information Sharing on the semantic Web</i> , Springer Publications, 2006. *Latest editions of all the suggested books are recommended.	



<u>Additional Electronic Reference material</u>	1. https://www.slideshare.net/marinasantini1/lecture-ontologies-and-the-semantic-web 2. http://courses.daiict.ac.in/pluginfile.php/8224/mod_resource/content/0/IT556_SOC/lecture_notes/The_Semantic_Web_and_its_Applications.pdf	





Course Code: MCS 253	Laboratory Course-5 M.Tech- Semester II BIG DATA LAB	L-0 T-0 P-4 C-2
Course Outcomes:	On completion of the course, the students will be :	
CO1	Applying and analyzing Hadoop related tools such as HBase, Cassandra, Pig, and Hive for big data Analytics.	
CO2	Applying and analyzing clustering algorithms.	
CO3	Applying and analyzing algorithms for large Datasets using Map Reduce techniques.	
CO4	Applying and analyzing Page Rank Computation.	
CO5	Creating NoSQL query with API.	
<u>LIST OF EXPERIMENTS:</u>		
	1. Introduction, use and assessment of most recent advancements in Big Data technology along with their usage and implementation with relevant tools and technologies. 2. Map Reduce application for word counting on Hadoop cluster. 3. Unstructured data into NoSQL data and do all operations such as NoSQL query with API. 4. K-means clustering using map reduce. 5. Page Rank Computation. 6. Data retrieval from AQL. 7. Data Retrieval from JQL 8. Use Hadoop related tools such as HBase, Cassandra, Pig, and Hive for big data Analytics	

