NATIONAL INSTITUTE OF TECHNOLGY, JAMSHEDPUR

DEPARTMENT OF COMPUTER APPLICATIONS

MASTER OF COMPUTER APPLICATIONS (M.C.A.)

(Six Semester Course)

Course Structure

FIRST SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	MA3101	Mathematical Foundation of Computer Application	3-1-0	4
2	MA3103	Probability and Statistical Computing	3-1-0	4
3	CA3101	Computer Programming and Problem Solving using C	3-1-0	4
4	CA3102	Computer Organization and Architecture	3-1-0	4
5	CA3103	Resource Management Techniques	3-1-0	4
6	CA3104	Computer Programming in C Lab	0-0-3	2
7	CA3105	Statistical and Optimization Techniques Lab	0-0-3	2
		Total Credits	15-5-6	24

SECOND SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	MA3201	Numerical Methods	3-1-0	4
2	CA3201	Object Oriented Programming using C++	3-1-0	4
3	CA3202	Data Structures	3-1-0	4
4	CA3203	Object Oriented Analysis and Design	3-1-0	4
5	CA3203	Operating System	3-1-0	4
6	CA3205	Numerical Computing Lab	0-0-3	2
7	CA3206	Data Structures Lab	0-0-3	2
		Total Credits	15-5-6	24

THIRD SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	CA3301	Database Management System	3-1-0	4
2	CA3302	Computer Communication and Networks	3-1-0	4
3	CA3303	Design and Analysis of Algorithms	3-1-0	4
4	CA3304	Computer Graphics	3-1-0	4
5	CA3305	Java Programming	3-1-0	4
6	CA3306	Database Management Lab	0-0-3	2
7	CA3307	Computer Graphics & Java Programming Lab	0-0-3	2
		Total Credits	15-5-6	24

FOURTH SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	CA3401	Software Engineering	3-1-0	4
2	CA3402	Artificial Intelligence	3-1-0	4
3	CA3403	Internet and Web Technology	3-1-0	4
4	CA3404	Elective – I	3-1-0	4
5	CA3405	Elective – II	3-1-0	4
6	CA3406	Web Technology Lab	0-0-3	2
7	CA3407	Elective Lab	0-0-3	2
		Total Credits	15-5-6	24

FIFTH SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	HS3501	Financial Management	3-1-0	4
2	HS3502	Organization Behaviour and Management	3-1-0	4
3	CA3501	Unix & Shell Programming	3-1-0	4
4	CA3502	Elective – III	3-1-0	4
5	CA3503	Elective – IV	3-1-0	4
6	CA3504	OS and Network Lab	0-0-3	2
7	CA3505	Mini Project Work	0-0-3	2
		Total Credits	15-5-6	24

SIXTH SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	CA3601	Thesis / Project / Industrial Project	0-0-20	20
		Total Credits	0-0-20	20

Total Credits of six semesters: 140

List of Electives:

1. System Analysis and Design
2. E-Commerce and E-business
3. Information Storage and Management
4. Supply Chain Management
5. Managerial Economics
6. Data Ware-housing and Data Mining
7. ERP System
8. Client Server Technology
9. Information Security
10. Systems Simulation and Modelling
11. Graph Theory and Network Flows
12. Parallel and Distributed Processing
13. Image Processing
14. Windows Application Programming
15. Microprocessors and their Interfacing
16. Computer-Aided Design
17. Industrial Robotics and Automation
18. Soft Computing
19. Pattern Recognition
20. Advanced Computer Architecture
21. Advanced Database Management System
22. Neural Networks
23. Embedded System
24. Formal Language and Automata Theory
25. Computer Oriented Statistical Methods
26. Mathematical Logic and Logic Programming
27. Software Project Management
28. Software Reliability
29. Software Safety
30. Fault-Tolerant Computing
31. Bluetooth Technology
32. Multimedia Technology
33. Mobile Computing
34. Real Time Systems
35. Cluster and Grid Computing
36. Internet of Things
37. Machine Learning
38. Data Analytics
39. Compiler Design
40. Cloud Computing
41. Big Data Management
42. Evolutionary Computation
43. Fuzzy Logic
44. Robotic Process Automation
45. Python Programming

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Sl.No.	Course Code	Course Title	L-T-P	Credits
1	MA3201	Numerical Methods	3-1-0	4
2	CA3201	Object Oriented Programming using C++	3-1-0	4
3	CA3202	Data Structures	3-1-0	4
4	CA3203	Object Oriented Analysis and Design	3-1-0	4
5	CA3203	Operating System	3-1-0	4
6	CA3205	Numerical Computing Lab	0-0-3	2
7	CA3206	Data Structures Lab	0-0-3	2
		Total Credits	15-5-6	24

THIRD SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	CA3301	Database Management System	3-1-0	4
2	CA3302	Computer Communication and Networks	3-1-0	4
3	CA3303	Design and Analysis of Algorithms	3-1-0	4
4	CA3304	Computer Graphics	3-1-0	4
5	CA3305	Java Programming	3-1-0	4
6	CA3306	Database Management Lab	0-0-3	2
7	CA3307	Computer Graphics & Java Programming Lab	0-0-3	2
		Total Credits	15-5-6	24

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3	CA3403	Internet and Web Technology	3-1-0	4
4	CA3404	Elective – I	3-1-0	4
5	CA3405	Elective – II	3-1-0	4
6	CA3406	Web Technology Lab	0-0-3	2
7	CA3407	Elective Lab	0-0-3	2
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4	CA3502	Elective – III	3-1-0	4
5	CA3503	Elective – IV	3-1-0	4
6	CA3504	OS and Network Lab	0-0-3	2
7	CA3505	Mini Project Work	0-0-3	2
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SIXTH SEMESTER

Sl.No.	Course Code	Course Title	L-T-P	Credits
1	CA3601	Thesis / Project / Industrial Project	0-0-20	20
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