Indian Institute of Engineering Science and Technology, Shibpur
Course Structure for Two-Year M. Tech. Programme
Department of Computer Science and Technology

A. First Semester

Sl. No.	Paper	Credit
1	Paper-I (Departmental Core) – Group A	3
2	Paper-II (Departmental Core) – Group B	3
3	Paper-III (Departmental Core) – Group C	3
4	Paper-IV (Departmental Elective/ Open Elective)	3
5	Paper-V (Departmental Elective/ Open Elective)	3
	Theory Subtotal	**15**
6	Lab - I/ Mini Project – I / Sessional on CORE - I	2
7	Lab - II/Mini Project – II / Sessional on CORE – II	2
8	Lab - III/Mini Project – III / Sessional on CORE – III	2
	Practical / Sessional Subtotal	**6**
	Total Credit	**21**

Paper - I (Departmental Core) – Group A (Any one from the Group)
- Advanced Algorithms (CS 5101)
- Principles of Programming Languages (CS 5102)

Paper - II (Departmental Core) – Group B (Any one from the Group)
- Logics for Computer Science (CS 5105)
- Mathematics for Computer Science (CS 5106)

Paper - III (Departmental Core) – Group C (Any one from the Group)
- Advanced Computer Architecture (CS 5109)
- High Performance Computing (CS 5110)

Paper - IV (Departmental Elective)
- Machine Learning (CS 5121)
- Information and Coding Theory (CS 5122)
- VLSI System Design (CS 5123)
- Digital Signal Processing (CS 5124)
- Cognitive Science (CS 5125)
- Computational Topology (CS 5126)
- Cryptography and Network Security (CS 5127)

Paper - V (Open Elective)
- Soft Computing (CS 5161)
- Image Processing and Pattern Recognition (CS 5162)
- Database Management System (CS 5163)
- Data Structure and Algorithm (CS 5164)

Sessional on CORE - I
- Advanced Algorithms Sessional (CS 5171)
- Principles of Programming Languages Sessional (CS 5172)

Sessional on CORE - II
- Sessional on Logics for Computer Science (CS 5173)
- Sessional on Mathematics for Computer Science (CS 5174)

Sessional on CORE - III
- Sessional on Advanced Computer Architecture (CS 5175)
- Sessional on High Performance Computing (CS 5176)

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B. Second Semester

Sl. No.	Paper	Credit
1	Paper - VI (Departmental Core) - Group D	3
2	Paper - VII (Departmental Core) – Group E	3
3	Paper - VIII (Departmental Core) – Group F	3
4	Paper-IX (Departmental Elective/ Open Elective)	3
5	Paper-X (Departmental Elective/ Open Elective)	3
	Theory Subtotal	**15**
6	M. Tech Project Part - I (Term Paper) (CS 5291)	4
7	Term Paper Seminar & Viva-voce (CS 5292)	2
8	**Practical / Sessional Subtotal**	**6**
	Total Credit	**21**

Paper - VI (Departmental Core) - Group D (Any one from the Group)
- Advanced Operating Systems (CS 5201)
- Real Time Systems (CS 5202)

Paper - VII (Departmental Core) - Group E (Any one from the Group)
- Advanced Database Management System (CS 5205)
- Information Retrieval (CS 5206)

Paper - VIII (Departmental Core) - Group F (Any one from the Group)
- Advanced Networking (CS 5209)
- Distributed Systems (CS 5210)

Paper - IX (Departmental Elective)
- Embedded Systems for Secured Hardware Design (CS 5221)
- Natural Language Processing (CS 5222)
- Computational Geometry (CS 5223)
- IoT and Cloud Computing (CS 5224)
- Quantum Computing (CS 5225)
- Graph Algorithms (CS 5226)
- Big Data Analytics (CS 5227)
- Cyber Security and Forensics (CS 5228)

Paper - X (Open Elective)
- Data mining and Knowledge Discovery (CS 5261)
- Information Security and Cryptography (CS 5262)
- Computer Graphics (CS 5263)
- Computer Control of Industrial Processes (CS 5264)

C. Third Semester

Sl. No.	Paper	Credit
1	M. Tech Thesis Part - II (Progress Report) (CS 6191)	12
2	Progress Report Seminar & Viva-voce (CS 6192)	6
	Total Credit	**18**

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D. Fourth Semester

Sl. No.	Paper	Credit
1	M. Tech Final Thesis (CS 6291)	22
2	Thesis Seminar & Viva-voce (CS 6292)	8
	Total Credit	**30**