INDIRA GANDHI UNIVERSITY, MEERPUR REWARI
SCHEME OF STUDIES AND EXAMINATION
M.TECH 2nd YEAR (COMPUTER SCIENCE & ENGINEERING)
SEMESTER 3rd
CBCS Scheme effective from 2018-19

Sl. No	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of Exam (Hours)	No of hours/ week
			L	T	P	Total credits	Marks of Class works	Theory	Practical	Total		
1	16CSE23C1	Knowledge Based System	4	0	-	4	50	100	-	150	3	4
2	16CSE23C2	Network Security	4	0	-	4	50	100	-	150	3	4
3	16CSE23C3	Literature Survey (Dissertation Stage 1)	-	-	2	2	100	-	-	100		4
4	16CSE23C4	Seminar	-		2	2	50	-	-	50		2
5	16CSE23CL1	Knowledge Based System Lab	-	-	2	2	50	-	50	100		2
6	16CSE23CL2	Project	-	-	2	2	50	-	50	100		2
7		Open Elective				3						
		TOTAL	**21**									

NOTE: Examiner will set nine questions in total. Question One will be compulsory and will comprise of all sections and remaining eight questions to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each Unit.

OPEN ELECTIVE
A candidate has to select this paper from the pool of open electives provided by the University.

INDIRA GANDHI UNIVERSITY, MEERPUR REWARI

SCHEME OF STUDIES AND EXAMINATION
M.TECH 2nd YEAR (COMPUTER SCIENCE & ENGINEERING)
SEMESTER 4th
CBCS Scheme effective from 2018-19

Sl. No	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				No of Credits
			L	T	P	Total	Marks of Class works	Theory	Practical	Total	
1.	16CSE24C1	Dissertation and viva (Dissertation Stage 2)	-	-	-	-	250	-	500	750	**20**
		TOTAL	-	-	-	-					

NOTE:

1. **Students have to publish a research paper in a UGC approved journal of the research work done in the semester.**
2. **Students will have to submit a soft copy of their thesis with the hard copies.**
3. **Students have to submit a plagiarism report with the thesis report obtained from Turnitin software. This software is available in IGU Library. Upto 25% of similarity of matter is permitted.**

16CSE23C1   **KNOWLEDGE BASED SYSTEM DESIGN**

		Marks	credits
L T P	Exam :	100	4
4 - -	Sessional :	50	
	Total :	150	4

NOTE:
Examiner will set nine questions in total. Question One will be compulsory and will comprise of all sections and remaining eight questions to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each Unit.

UNIT-I
Introduction to Logic, Propositional Logic concepts, Semantic Tebleaux and Resolution in Propositional Logic, FOPL, Semantic Tebleaux in Predicate Logic, and Resolution in Predicate Logic, Logic Programming in Prolog.

UNIT-II
Knowledge Representation, Semantic Nets, Partitioned Nets, Parallel Implementation of Semantic Nets. Frames, Common Sense Reasoning and Thematic Role Frames, Architecture of Knowledge Based System, Rule Based Systems, Frame based systems. Forward and Backward Chaining,

UNIT-III
Search Techniques. Uninformed Search: DFS, BFS, Iterative Deepening, Heuristic Search: A*, Hill Climbing etc.

UNIT-IV
Uncertainty Management in Expert Systems, Fuzzy Logic, Probabilistic Methods, Bayesian Theory, Dempster Shafer Theory, Baye's Network,
Introduction to Agents and their Application in Intelligent Systems.

References:
1. Artificial Intelligence-Nilsl J Nilson
2. Artificial Intelligence-Elain Rich and Kevin Knight
3. Artificial Intelligence: A modern approach-Staurt Russel and Peter Norvig
4. Artificial Intelligence-Patrick Henry Winston
5. The Essence of Logic- John Kelly

16CSE23C2   **NETWORK SECURITY**

			Marks	credits
L T P	Exam	:	100	4
4 - -	Sessional	:	50	
	Total	:	150	4

NOTE:
Examiner will set nine questions in total. Question One will be compulsory and will comprise of all sections and remaining eight questions to be set by taking two questions from each unit. The students have to attempt five questions in total, first being compulsory and selecting one from each Unit.

Unit -1
Introduction: Services, Mechanisms and attacks-the OSI security architecture-Network security model-Classical Encryption techniques (Symmetric cipher model, substitution techniques, transposition techniques, steganography).Plain text and cipher text, substitution techniques, transposition techniques, encryption and decryption, symmetric and asymmetric key cryptography.

UNIT -II
BLOCK CIPHERS & PUBLIC KEY CRYPTOGRAPHY: Data Encryption Standard-Block cipher principles-block cipher modes of operation-Advanced Encryption Standard (AES)-Triple DES-Blowfish-RC5 algorithm.
Public key cryptography: Principles of public key cryptosystems-The RSA algorithm-Key management – Diffie Hellman Key exchange-Elliptic curve arithmetic-Elliptic curve cryptography.

Unit-III
Internet security protocols: basic concepts, Secure Socket Layer (SSL), Transport Layer Security (TLS), Secure Hyper Text Transfer protocol (SHTTP), Time Stamping Protocol (TSP), Secure Electronic Transaction (SET), SSL versus SET, Electronic Money, Email Security.

UNIT -IV
SECURITY PRACTICE & SYSTEM SECURITY : Authentication applications – Kerberos – X.509 Authentication services – Internet Firewalls for Trusted System: Roles of Firewalls – Firewall related terminology- Types of Firewalls – Firewall designs – SET for E -Commerce Transactions. Intruder – Intrusion detection system – Virus and related threats – Countermeasures – Firewalls design principles – Trusted systems – Practical implementation of cryptography and security

Reference:
1. Cryprotography and Network Security, 2nd Edition by Atul Kahate, TMH
2. Network Management Principles & Practices by Subramanian, Mani (AWL)
3. SNMP, Stalling, Willian (AWL) SNMP: A Guide to Network Management (MGH)
4. 4.Network Management by U. Dlack (MGH)
5. Behrouz A. Ferouzan, "Cryptography & Network Security", Tata Mc Graw Hill, 2007.

16CSE23C3   **LITERATURE SURVEY**
                              (DISSERTATION STAGE-1)

                                    Marks   Credits
L   T   P
      - 2   Sessional Exam :   100   2

A candidate has to prepare a report covering identification of research topic, literature review, planning of research scheme and systematic documentation. The marks will be given on the basis of a report prepared covering the above said contents, contents of the presentation, communication and presentation skills.

16CSE23C4   **SEMINAR**

		Marks	Credits
L T P	Sessional Exam:	50	2
- - 2			

A candidate has to present a seminar on a recent topic/ technology/ research advancement and has to submit a seminar report. The marks will be given on the basis of seminar report, contents of the presentation, communication and presentation skills.

16CSE23CL1   **KNOWLEDGE BASED SYSTEM LAB**

		Marks	Credits
L T P	EXAM :	50	2
- - 2	Sessional	50	

Practical's based on theory paper

16CSE23CL2   **Project**

		Marks	Credits
L T P	EXAM :	50	2
- - 2	Sessional	50	

A student has to make a Project based on latest technology.