DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
COMPUTER NETWORKS Programme
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

KAKINADA

I-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCN1101	**Program Core-1** Transport Control Protocol/Internet Protocol (TCP/IP)	PC	3	0	0	3
2	MTCN1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTCN1103	**Program Elective-1** 1. Software Define Networks 2. Network Coding Theory 3. Adhoc & Sensor Networks	PE	3	0	0	3
4	MTCN1104	**Program Elective-2** 1. Distributed Systems 2. Grid and Cluster Computing 3. Wireless Networks	PE	3	0	0	3
5	MTCN1105	**Research Methodology and IPR**	CC	2	0	0	2
6	MTCN1106	**Laboratory-1** Transport Control Protocol/Internet Protocol (TCP/IP) Lab	LB	0	0	4	2
7	MTCN1107	**Laboartory-2** Advanced Data Structures Lab	LB	0	0	4	2
8	MTCN1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

*Student has to choose any one audit course listed below.

II- SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCN1201	**Program Core-3** Network Security	PC	3	0	0	3
2	MTCN1202	**Program Core-4** Wireless Sensor Networks	PC	3	0	0	3
3	MTCN1203	**Program Elective-3** 1. Web Security 2. Internet of Things 3. Intrusion Detection & Prevention Systems	PE	3	0	0	3
4	MTCN1204	**Program Elective-4** 1. Firewall & VPN Security 2. Machine Learning 3. Service Oriented Architecture	PE	3	0	0	3
5	MTCN1205	**Laboratory-3** Network Security Lab	LB	0	0	4	2
6	MTCN1206	**Laboartory-4** Advanced Network Programming Lab	LB	0	0	4	2
7	MTCN1207	**Mini Project with Seminar**	MP	0	0	0	2
8	MTCN1208	**Audit Course-2**	AC	2	0	0	0
		Total Credits					18

*Student has to choose any one audit course listed below.

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education

5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III-SEMESTER

S. No	Course Code	Courses	Category	L	T	P	C
1	MTCN2101	**Program Elective-5** 1. Trustworthy Computing 2. Advanced Storage Area Networks 3. Cloud Computing 4. MOOCs-1 (NPTEL/SWAYAM)-12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTCN2102	**Open Elective** 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering /Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTCN2103	**Dissertation-I/Industrial Project #**		0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCN2201	**Dissertation-II**		0	0	32	16
		Total Credits					16

Open Electives offered by the Department of CSE for other Departments Students

01. Python Programming
02. Principles of Cyber Security
03. Internet of Things
04. Artificial Intelligence and Machine Learning

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Academic Planning
JNTUK Kakinada

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
COMPUTER NETWORKS & INFORMATION SECURITY Programme
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I - SEMESTER

S. No	Course Code	Courses	Category	L	T	P	C
1	MTCNIS1101	**Program Core-1** Transport Control Protocol/Internet Protocol (TCP/IP)	PC	3	0	0	3
2	MTCNIS1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTCNIS1103	**Program Elective-1** 1. Advanced Computer Networks 2. Distributed Systems 3. Intrusion Detection & Prevention Systems	PE	3	0	0	3
4	MTCNIS1104	**Program Elective-2** 1. Data Storage Technologies and Networks 2. Wireless Sensor Networks 3. Network Programming	PE	3	0	0	3
5	MTCNIS1105	**Research Methodology and IPR**	CC	2	0	0	2
6	MTCNIS1106	**Laboratory-1** Transport Control Protocol/Internet Protocol (TCP/IP) Lab	LB	0	0	4	2
7	MTCNIS1107	**Laboartory-2** Advanced Data Structures Lab	LB	0	0	4	2
8	MTCNIS1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

II -SEMESTER

S. No	Course Code	Courses	Category	L	T	P	C
1	MTCNIS1201	**Program Core-3** Principles of Cyber Security	PC	3	0	0	3
2	MTCNIS1202	**Program Core-4** Cyber Crime Investigation & Digital Forensics	PC	3	0	0	3
3	MTCNIS1203	**Program Elective-3** 1. Wireless and Mobile Security 2. Android Security Design and Internals 3. Firewall and VPN Security 4. Information Theory & Coding	PE	3	0	0	3
4	MTCNIS1204	**Program Elective-4** 1. Vulnerability Assessment & Penetration Testing 2. Cloud & IoT Security 3. Applied Cryptography 4. Secure Coding	PE	3	0	0	3
5	MTCNIS1205	**Laboratory-3** Cyber Security Lab	LB	0	0	4	2
6	MTCNIS1206	**Laboartory-4** Cyber Crime Investigation & Digital Forensics Lab	LB	0	0	4	2
7	MTCNIS1207	**Mini Project with Seminar**	MP	0	0	0	2
8	MTCNIS1208	**Audit Course-2***	AC	2	0	0	0
		Total Credits					18

-- (1)

*Student has to choose any one audit course listed below.

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III -SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCNIS2101	**Program Elective-5** 1. Cloud Architectures and Security 2. Information Security Management and Standards 3. Cyber Laws and Security Policies 4. MOOCs-1 (NPTEL/SWAYAM)-12 Week Program related to the programme which is not listed in the course structure		3	0	0	3
2	MTCNIS2102	**Open Elective** 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering /Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college		3	0	0	3
3	MTCNIS2103	**Dissertation-I/Industrial Project#**		0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV -SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCNIS2201	**Dissertation-II**		0	0	32	16
		Total Credits					16

Open Electives offered by the Department of CSE for other Departments Students

1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Artificial Intelligence and Machine Learning

Director(i/c)
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
COMPUTER SCIENCE & TECHNOLOGY PROGRAMME
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCST1101	**Program Core-1** Mathematical Foundations of Computer Science	PC	3	0	0	3
2	MTCST1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTCST1103	**Program Elective-1** 1. Artificial Intelligence 2. Cloud Computing 3. Digital Image Processing 4. Advanced Operating System 5. Optimization Techniques	PE	3	0	0	3
4	MTCST1104	**Program Elective-2** 1. Big Data Analytics 2. Applied Cryptography 3. Advanced Computer Networks 4. Embedded Computing 5. Parallel Computer Architecture	PE	3	0	0	3
5	MTCST1105	**Research Methodology and IPR**	CC			0	2
6	MTCST1106	**Laboratory-1** Advanced Data Structures Lab	LB	0	0	4	2
7	MTCST1107	**Laboartory-2** Computing Lab	LB	0	0	4	2
8	MTCST1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

II SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCST1201	**Program Core-3** Advanced Algorithms	PC	3	0	0	3
2	MTCST1202	**Program Core-4** Machine Learning	PC	3	0	0	3
3	MTCST1203	**Program Elective-3** 1. Soft Computing 2. Advanced Network Principles and Protocols 3. Internet of Things 4. Open Source Programming 5. Pattern Recognition	PE	3	0	0	3
4	MTCST1204	**Program Elective-4** 1. Natural Language Processing 2. Full Stack Technologies 3. Parallel Algorithms 4. Object Oriented Software Engineering 5. Distributed Database	PE	3	0	0	3
5	MTCST1205	**Laboratory-3** Advance Algorithms Lab	LB	0	0	4	2
6	MTCST1206	**Laboartory-4** Machine Learning Lab	LB	0	0	4	2
7	MTCST1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTCST1208	**Audit Course-2 ***	AC	2	0	0	0
		Total Credits					18

--(1)

Student has to choose any one audit course listed below.

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCST2101	**Program Elective-5** 1. Deep Learning 2. Ethical Hacking 3. MOOCs-1 through NPTEL/SWAYAM- 12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTCST2102	**Open Elective** 1. MOOCs-2 through NPTEL/SWAYAM- any 12 week course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTCST2103	**Dissertation-I/Industrial Project #**	PJ	0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCST2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered to other departments:

1. Python Programming
2. Web Technologies
3. Artificial Intelligence
4. Internet of Things
5. Machine Learning
6. Advanced Data Structures

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA

KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
COMPUTER SCIENCE & ENGINEERING PROGRAMME
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCSE1101	**Program Core-1** Mathematical Foundations of Computer Science	PC	3	0	0	3
2	MTCSE1102	**Program Core-2** Advanced Data Structures & Algorithms	PC	3	0	0	3
3	MTCSE1103	**Program Elective-1** 1. Big Data Analytics 2. Digital Image Processing 3. Advanced Operating Systems	PE	3	0	0	3
4	MTCSE1104	**Program Elective-2** 1. Advanced Computer Networks 2. Internet of Things 3. Object Oriented Software Engineering	PE	3	0	0	3
5	MTCSE1105	**Research Methodology and IPR**	CC			0	2
6	MTCSE1106	**Laboratory-1** Advanced Data Structures & Algorithms Lab	LB	0	0	4	2
7	MTCSE1107	**Laboartory-2** Advanced Computing Lab	LB	0	0	4	2
8	MTCSE1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

***Student has to choose any one audit course listed below.**

II SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCSE1201	**Program Core-3** Machine learning	PC	3	0	0	3
2	MTCSE1202	**Program Core-4** MEAN Stack Technologies	PC	3	0	0	3
3	MTCSE1203	**Program Elective-3** 1. Advanced Databases and Mining 2. Ad Hoc & Sensor Networks 3. Soft Computing	PE	3	0	0	3
4	MTCSE1204	**Program Elective-4** 1. Cloud Computing 2. Principles of computer security 3. High Performance Computing	PE	3	0	0	3
5	MTCSE1205	**Laboratory-3** Machine Learning with python lab	LB	0	0	4	2
6	MTCSE1206	**Laboartory-4** MEAN Stack Technologies Lab	LB	0	0	4	2
7	MTCSE1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTCSE1208	**Audit Course-2 ***	AC	2	0	0	0
		Total Credits					18

*Student has to choose any one audit course listed below.
Audit Course 1 & 2:

1. English for Research Paper Writing	5. Constitution of India
2. Disaster Management	6. Pedagogy Studies
3. Sanskrit for Technical Knowledge	7. Stress Management by Yoga
4. Value Education	8. Personality Development through Life Enlightenment Skills

III-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCSE2101	**Program Elective-5** 1. Deep Learning 2. Social Network Analysis 3. MOOCs-1 (NPTEL/SWAYAM) 12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTCSE2102	**Open Elective** 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTCSE2103	**Dissertation-I/ Industrial Project #**	PJ	0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

M. Tech. (CSE) IV SEMESTER							
S.No	Course Code	Courses	Category	L	T	P	C
1	MTCSE2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered by the Department of CSE
1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Machine Learning
5. Digital forensics
6. Next Generation Databases

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
COMPUTER SCIENCE PROGRAMME
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

M. Tech. (CS) I SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCS1101	**Program Core-1** Mathematical Foundations of Computer Science	PC	3	0	0	3
2	MTCS1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTCS1103	**Program Elective-1** 1. Advanced Operating Systems 2. Advanced Computer Architecture 3. Parallel Computing	PE	3	0	0	3
4	MTCS1104	**Program Elective-2** 1. Advanced Data Bases 2. Advanced Computer Networks 3. Object Oriented Software Engineering	PE	3	0	0	3
5	MTCS1105	**Research Methodology and IPR**	CC			0	2
6	MTCS1106	**Laboratory-1** Advanced Data Structures Lab	LB	0	0	4	2
7	MTCS1107	**Laboartory-2** Advanced Computing Lab-1	LB	0	0	4	2
8	MTCS1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

II SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCS1201	**Program Core-3** Advance Algorithms	PC	3	0	0	3
2	MTCS1202	**Program Core-4** Data Science through Python Programming	PC	3	0	0	3
3	MTCS1203	**Program Elective-3** 1. Machine Learning 2. Ad hoc and Sensor Networks 3. Internet of Things	PE	3	0	0	3
4	MTCS1204	**Program Elective-4** 1. Cryptography and network Security 2. Cloud Computing 3. Web Technologies	PE	3	0	0	3
5	MTCS1205	**Laboratory-3** Advance Algorithms Lab	LB	0	0	4	2
6	MTCS1206	**Laboartory-4** Advanced Computing Lab-2	LB	0	0	4	2
7	MTCS1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTCS1208	**Audit Course-2***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

Audit Course 1 & 2:
1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCS2101	**Program Elective-5** 1. Mobile Applications and Development 2. Big Data Analytics 3. MOOCs-1 through NPTEL/ SWAYAM-12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTCS2102	**Open Elective** 1. MOOCs-2 Through NPTEL /SWAYAM - Any 12 week course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTCS2103	**Dissertation-I/Industrial Project #**	PJ	0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCS2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered by the Department of Computer Science and Engineering for other Departments students
1. Python Programming
2. Data Science
3. Bioinformatics
4. Digital Forensics
5. Web Security
6. Machine Learning

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-- (2)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
CYBER SECURITY PROGRAMME

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I- SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCY1101	**Program Core-1** Principles of Cyber Security	PC	3	0	0	3
2	MTCY1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTCY1103	**Program Elective-1** 1. Cryptanalysis 2. Cyber Crime Investigation & Digital Forensics 3. Operating System Security 4. Firewall and VPN Security	PE	3	0	0	3
4	MTCY1104	**Program Elective-2** 1. Database and Web Application Security 2. Secure Software Design and Development 3. Wireless Network Security 4. Cyberspace Operations and Design	PE	3	0	0	3
5	MTCY1105	**Research Methodology and IPR**	CC	2	0	0	2
6	MTCY1106	**Laboratory-1** Cyber Security Lab	LB	0	0	4	2
7	MTCY1107	**Laboartory-2** Advanced Data Structures Lab	LB	0	0	4	2
8	MTCY1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

II- SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCY1201	**Program Core-3** Vulnerability Assessment & Penetration Testing	PC	3	0	0	3
2	MTCY1202	**Program Core-4** Malware Analysis & Reverse Engineering	PC	3	0	0	3
3	MTCY1203	**Program Elective-3** 1. Cloud and IoT Security 2. Machine Learning 3. Data Privacy	PE	3	0	0	3
4	MTCY1204	**Program Elective-4** 1. Applied Cryptography 2. Principles of Secure Coding 3. Security Assessment and Risk Analysis	PE	3	0	0	3
5	MTCY1205	**Laboratory-3** Vulnerability Assessment & Penetration Testing Lab	LB	0	0	4	2
6	MTCY1206	**Laboartory-4** Malware Analysis & Reverse Engineering Lab	LB	0	0	4	2
7	MTCY1207	**Mini Project with Seminar**	MP	0	0	0	2
8	MTCY1208	**Audit Course-2** 1. Constitution of India 2. Pedagogy Studies 3. Stress Management by Yoga 4. Personality Development through Life Enlightenment Skills	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTCY2101	**Program Elective-5** 1. Information System Audit 2. Cyber Security Governance 3. Cyber Laws and Security Policies 4. MOOCs-1 (NPTEL/SWAYAM)-12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTCY2102	**Open Elective** 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering /Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTCY2103	**Dissertation-I/Industrial Project#**	PJ	0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

M. Tech. (CSE) IV SEMESTER							
S.No	Course Code	Courses	Category	L	T	P	C
1	MTCS2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered by the Department of CSE for other Departments Students

1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Artificial Intelligence and Machine Learning

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- - - (2)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
DATA SCIENCE PROGRAMME
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTDS1101	**Program Core-1** Data Predictive Analytics	PC	3	0	0	3
2	MTDS1102	**Program Core-2** Data Science Applications with Python	PC	3	0	0	3
3	MTDS1103	**Program Elective-1** 1. Advanced Graph Theory 2. Data Warehousing 3. Artificial Intelligence	PE	3	0	0	3
4	MTDS1104	**Program Elective-2** 1. Internet of Things 2. Social Network and Semantic Web 3. Big Data Analytics	PE	3	0	0	3
5	MTDS1105	**Research Methodology and IPR**	CC			0	2
6	MTDS1106	**Laboratory-1** Data Science Applications with Python Lab	LB	0	0	4	2
7	MTDS1107	**Laboartory-2** Advanced Computing with Python-1 Lab	LB	0	0	4	2
8	MTDS1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

II SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTDS1201	**Program Core-3** Advance Algorithms	PC	3	0	0	3
2	MTDS1202	**Program Core-4** Machine Learning Techniques	PC	3	0	0	3
3	MTDS1203	**Program Elective-3** 1. Natural Language Processing 2. High Performance Computing 3. Cloud Computing	PE	3	0	0	3
4	MTDS1204	**Program Elective-4** 1. Principles of Deep Learning 2. Image and Video Analytics 3. Principles of Data Security	PE	3	0	0	3
5	MTDS1205	**Laboratory-3** Advance Algorithms Lab	LB	0	0	4	2
6	MTDS1206	**Laboartory-4** Advanced Computing with Python-2 Lab	LB	0	0	4	2
7	MTDS1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTDS1208	**Audit Course-2***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

--(1)

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTDS2101	**Program Elective-5** 1. Multivariate Analysis 2. Next Generation Databases 3. MOOCs-1 through NPTEL/SWAYAM 12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTDS2102	**Open Elective** 1. MOOCs-2 through NPTEL/SWAYAM - Any 12 week course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTDS2103	**Dissertation-I/Industrial Project**	PJ	0	0	20	10
		Total Credits					16

Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTDS2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered by the Department of Computer Science and Engineering for other Departments students

1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Machine Learning
5. Deep Learning
6. Next Generation Databases

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
INFORMATION TECHNOLOGY PROGRAMME
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-SEMESTER

S. No	Course Code	Courses	Category	L	T	P	C
1	MTIT1101	**Program Core-1** Discrete Mathematical Structures	PC	3	0	0	3
2	MTIT1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTIT1103	**Program Elective-1** 1. Artificial Intelligence 2. Service Oriented Architectures and Web Security 3. Internet of Things 4. Optimization Techniques 5. Parallel Computer Architecture	PE	3	0	0	3
4	MTIT1104	**Program Elective-2** 1. Big Data Analytics 2. Principles of Cryptography 3. Cluster and Grid Computing 4. Imaging and Multimedia Systems 5. Advanced Graph Theory	PE	3	0	0	3
5	MTIT1105	**Research Methodology and IPR**	CC			0	2
6	MTIT1106	**Laboratory-1** Advanced Data Structures Lab	LB	0	0	4	2
7	MTIT1107	**Laboartory-2** Computing Lab	LB	0	0	4	2
8	MTIT1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

II -SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTIT1201	**Program Core-3** Advanced Algorithms	PC	3	0	0	3
2	MTIT1202	**Program Core-4** Full Stack Technologies	PC	3	0	0	3
3	MTIT1203	**Program Elective-3** 1. Machine Learning 2. DevOps 3. Advanced Network Principles and Protocols 4. Distributed Computing 5. Social Network Analytics	PE	3	0	0	3
4	MTIT1204	**Program Elective-4** 1. Digital Image Processing 2. Block Chain Technologies 3. Data Science 4. Soft Computing 5. Natural Language Processing	PE	3	0	0	3
5	MTIT1205	**Laboratory-3** Advance Algorithms Lab	LB	0	0	4	2
6	MTIT1206	**Laboartory-4** Full Stack Technologies Lab	LB	0	0	4	2
7	MTIT1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTIT1208	**Audit Course-2 ***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTIT2101	**Program Elective-5** 1. Deep Learning 2. Embedded Computing 3. Ethical Hacking 4. Digital Marketing 5. MOOCs-1 through NPTEL/SWAYAM- 12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTITS2102	**Open Elective** 1. MOOCs-2 through NPTEL/ SWAYAM - any 12 week course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	OE	3	0	0	3
3	MTIT2103	**Dissertation-I/Industrial Project#**	PJ	0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

M. Tech. (IT) IV SEMESTER							
S.No	Course Code	Courses	Category	L	T	P	C
1	MTIT2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered to other departments:

1. Python Programming
2. Web Technologies
3. Artificial Intelligence
4. Internet of Things
5. Machine Learning
6. Advanced Data Structures

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for
NEURAL NETWORKS PROGRAMME
(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTNN1101	**Program Core-1** Artificial Neural Networks	PC	3	0	0	3
2	MTNN1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTNN1103	**Program Elective-1** 1. Machine Learning 2. Intelligent Systems 3. Expert Systems	PE	3	0	0	3
4	MTNN1104	**Program Elective-2** 1. Data Warehouse and Data Mining 2. Recommender Systems 3. Pattern Recognition	PE	3	0	0	3
5	MTNN1105	**Research Methodology and IPR**	CC			0	2
6	MTNN1106	**Laboratory-1** Advanced Data Structures Lab	LB	0	0	4	2
7	MTNN1107	**Laboartory-2** Neural Networks Lab	LB	0	0	4	2
8	MTNN1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

II-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
		M. Tech. (NN) II SEMESTER					
1	MTNN1201	**Program Core-3** Soft Computing	PC	3	0	0	3
2	MTNN1202	**Program Core-4** Deep Learning	PC	3	0	0	3
3	MTNN1203	**Program Elective-3** 1. Computer Vision 2. Big Data Analytics 3. Remote Sensing	PE	3	0	0	3
4	MTNN1204	**Program Elective-4** 1. Cognitive Systems 2. Knowledge Discovery 3. Natural Language Processing	PE	3	0	0	3
5	MTNN1205	**Laboratory-3** Soft Computing Lab	LB	0	0	4	2
6	MTNN1206	**Laboartory-4** Deep Learning lab	LB	0	0	4	2
7	MTNN1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTNN1208	**Audit Course-2***	AC	2	0	0	0
		Total Credits					18

Student has to choose any one audit course listed below.

Audit Course 1 & 2:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

III SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTNN2101	**Program Elective-5** 1. Reinforcement Learning 2. Bio-Informatics 3. Speech Processing 4. MOOCS-I(NPTEL/SWAYAM-12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTNN2102	**Open Elective** 1. MOOCS-II(NPTEL/SWAYAM-Any 12WeeksProgram-Interdisciplinary Course but not from the Parent Department) 2. Courses offered by other departments in the college	OE	3	0	0	3
3	MTNN2103	**Dissertation-I/Industrial Project#**	PJ	0	0	20	10
		Total Credits					16

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTNN2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered to Other Departments
1. Python Programming
2. Artificial Intelligence
3. Machine Learning
4. Deep Learning

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE M.Tech CSE for

SOFTWARE ENGINEERING PROGRAMME

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTSE1101	**Program Core-1** Software Engineering	PC	3	0	0	3
2	MTSE1102	**Program Core-2** Advanced Data Structures	PC	3	0	0	3
3	MTSE1103	**Program Elective-1** 1. Software Project and Process Management 2. Machine Learning 3. E-Commerce	PE	3	0	0	3
4	MTSE1104	**Program Elective-2** 1. Software Quality Assurance and Testing 2. Cloud Computing 3. Internet of Things	PE	3	0	0	3
5	MTSE1105	**Research Methodology and IPR**	CC			0	2
6	MTSE1106	**Laboratory-1** Advanced Data Structures Lab	LB	0	0	4	2
7	MTSE1107	**Laboartory-2** SE LAB-I	LB	0	0	4	2
8	MTSE1108	**Audit Course-1***	AC	2	0	0	0
		Total Credits					18

*Student has to choose any one audit course listed below.

II-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTSE1201	**Program Core-3** Service Oriented Architecture	PC	3	0	0	3
2	MTSE1202	**Program Core-4** Mathematical Foundations of Computer Science	PC	3	0	0	3
3	MTSE1203	**Program Elective-3** 1. Software Testing Methodologies 2. Agile Software Development 3. ERP &Supply Chain Management	PE	3	0	0	3
4	MTSE1204	**Program Elective-4** 1. Secure Software Engineering 2. Big Data Analytics 3. Design patterns	PE	3	0	0	3
5	MTSE1205	**Laboratory-3** Software Testing Lab	LB	0	0	4	2
6	MTSE1206	**Laboartory-4** SE LAB-II	LB	0	0	4	2
7	MTSE1207	**Mini Project with Seminar**	MP	2	0	0	2
8	MTSE1208	**Audit Course-2 ***	AC	2	0	0	0
		Total Credits					18

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III-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTSE2101	**Program Elective-5** 1. Object Oriented Software Engineering 2. Artificial Intelligence 3. User Interface Design 4. MOOCS-I(NPTEL/SWAYAM- 12 Week Program related to the programme which is not listed in the course structure	PE	3	0	0	3
2	MTSE2102	**Open Elective** 1. MOOCS-II (NPTEL/SWAYAM- Any 12 Weeks Program-Interdisciplinary Course but not from Parent Department) 2. Courses offered by other departments in the college	OE	3	0	0	3
3	MTSE2103	**Dissertation-I/ Industrial Project#**	PJ	0	0	20	10
		Total Credits					16

*Student has to choose any one audit course listed below.
Audit Course 1 & 2:
1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

#Students going for Industrial Project/Thesis will complete these courses through MOOCs

IV-SEMESTER

S.No	Course Code	Courses	Category	L	T	P	C
1	MTSE2201	**Dissertation-II**	PJ	0	0	32	16
		Total Credits					16

Open Electives offered to Other Departments
1. Python Programming
2. Artificial Intelligence
3. Machine Learning
4. Deep Learning

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