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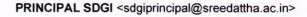
Suggestions for the Board of studies for CSE&ECE – JNTUH Curriculum

1 message

PRINCIPAL SDGI <sdgiprincipal@sreedattha.ac.in>   Mon, Apr 20, 2021 at 3:10 PM
To: DU AAC <duaac@jntuh.ac.in>, registrar@jntuh.ac.in, vcjntu@jntuh.ac.in

Dear Sir,

Herewith we are sending our proposal for revising curriculum based on the feedback from stakeholders. We request

you to kindly consider our request.

Thanking you sir.

With Regards

Dr.M.SENTHIL KUMAR - M.E., M.B.A., PhD
Member of ISTE & IETE
Principal - Sree Dattha Group of Institutions,,
Sheriguda (V), Ibrahimpatnam (M), R. R. Dist, Hyderabad - 501510
+91 8801099932, 8668191136 & 9698974051 (Whatsapp)

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PRINCIPAL
Sree Dattha Group of Institutions
Sheriguda, R.R. Dist - 501510.

To
The Registrar,
JNTUH Kukatpally,
HYDERABAD-500085.

Respected Sir,

Sub: Suggestions for the Board of Studies for CSE & ECE – JNTUH Curriculum – A.Y. 2021-22 – Reg.

With reference to the subject cited above, we would like to bring to your kind attention that regular survey and feedback sessions were conducted through online for various stakeholders. Analysis of the feedback received and the subsequent recommendations are included in the institute's CAC and DAC for the up-dation of curriculum of JNTUH for AY 2021-22. In order to benefit the stakeholders in terms of better placements and best package in industry, the following courses may be included in the curriculum. These will definitely help them to achieve better career prospects.

1. DevOps
2. Python
3. Big Data
4. Node JS, React JS, Django
5. R Programming, Power BI
6. Ui Ux Designing
7. Apache Kafka
8. Internship/Field work

Technologies cited above, would certainly enable majority of the engineering graduates for the employment opportunities from various industries. We hope that the above suggestions may be considered towards curriculum enhancement.

Thanking You Sir.

Yours faithfully,
Principal.

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ACTIONS TAKEN
BY
UNIVERSITY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE STRUCTURE, I & II YEAR SYLLABUS (R22 Regulations)
Applicable from AY 2022-23 Batch

I Year I Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	PH102BS	Applied Physics	3	1	0	4
3.	EC103ES	C Programming for Engineers	3	0	0	3
4.	ME104ES	Engineering Workshop	0	1	3	2.5
5.	EN105HS	English for Skill Enhancement	2	0	0	2
6.	EC106ES	Elements of Electronics and Communication Engineering	0	0	2	1
7.	PH107BS	Applied Physics Laboratory	0	0	3	1.5
8.	EC108ES	C Programming for Engineers Laboratory	0	0	2	1
9.	EN109HS	English Language and Communication Skills Laboratory	0	0	2	1
10.	*MC110	Environmental Science	3	0	0	0
		Induction Programme				
		Total	14	3	12	20

I Year II Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	CH202BS	Engineering Chemistry	3	1	0	4
3.	ME203ES	Computer Aided Engineering Graphics	1	0	4	3
4.	EE204ES	Basic Electrical Engineering	2	0	0	2
5.	EC205ES	Electronic Devices and Circuits	2	0	0	2
6.	EC206ES	Applied Python Programming Laboratory	0	1	2	2
7.	CH207BS	Engineering Chemistry Laboratory	0	0	2	1
8.	EE208ES	Basic Electrical Engineering Laboratory	0	0	2	1
9.	EC209ES	Electronic Devices and Circuits Laboratory	0	0	2	1
		Total	11	3	12	20

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Numerical Methods and Complex Variables	3	1	0	4
2		Analog Circuits	3	0	0	3
3		Network analysis and Synthesis	3	0	0	3
4		Digital Logic Design	3	0	0	3
5		Signals and Systems	3	1	0	4
6		Analog Circuits Laboratory	0	0	2	1
7		Digital logic Design Laboratory	0	0	2	1
8		Basic Simulation Laboratory	0	0	2	1
9	*MC	Constitution of India	3	0	0	0
		Total Credits	18	2	6	20

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II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Probability Theory and Stochastic Processes	3	0	0	3
2		Electromagnetic Fields and Transmission Lines	3	0	0	3
3		Analog and Digital Communications	3	0	0	3
4		Linear and Digital IC Applications	3	0	0	3
5		Electronic Circuit Analysis	3	0	0	3
6		Analog and Digital Communications Laboratory	0	0	2	1
7		Linear and Digital IC Applications Laboratory	0	0	2	1
8		Electronic Circuit Analysis Laboratory	0	0	2	1
9		Real Time Project/ Field Based Project	0	0	4	2
10	*MC	Gender Sensitization Lab	0	0	2	0
		Total Credits	15	0	12	20

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Microcontrollers	3	1	0	4
2		IoT Architectures and Protocols	3	0	0	3
3		Control Systems	3	1	0	4
4		Business Economics & Financial Analysis	3	0	0	3
5		Professional Elective – I	3	0	0	3
6		Microcontrollers Laboratory	0	0	2	1
7		IoT Architectures and Protocols Laboratory	0	0	2	1
8		Advanced English Communication Skills Laboratory	0	0	2	1
9	*MC	Intellectual Property Rights	3	0	0	0
		Total Credits	18	2	6	20

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Antennas and Wave Propagation	3	0	0	3
2		Digital Signal Processing	3	0	0	3
3		CMOS VLSI Design	3	0	0	3
4		Professional Elective - II	3	0	0	3
5		Open Elective – I	3	0	0	3
6		Digital Signal Processing Laboratory	0	0	2	1
7		CMOS VLSI Design Laboratory	0	0	2	1
8		Advanced Communication Laboratory	0	0	2	1
9		Industry Oriented Mini Project/ Internship	0	0	4	2
10	*MC	Environmental Science	3	0	0	0
		Total Credits	18	0	10	20

Environmental Science in III Yr II Sem Should be Registered by Lateral Entry Students Only.

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IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Microwave and Optical Communications	3	1	0	4
2		Professional Elective – III	3	0	0	3
3		Professional Elective – IV	3	0	0	3
4		Open Elective – II	3	0	0	3
5		Professional Practice, Law & Ethics	3	0	0	2
6		Microwave and Optical Communications Laboratory	0	0	4	2
7		Project Stage – I	0	0	6	3
		Total Credits	**15**	**1**	**10**	**20**

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Professional Elective – V	3	0	0	3
2		Professional Elective – VI	3	0	0	3
3		Open Elective – III	3	0	0	3
4		Project Stage – II including Seminar	0	0	22	11
		Total Credits	**9**	**0**	**22**	**20**

*MC – Satisfactory/Unsatisfactory

Professional Elective – I

EC511PE	Computer Organization & Operating Systems
EC512PE	Data Communications and Computer Networks
EC513PE	Electronic Measurements and Instrumentation

Professional Elective – II

EC611PE	Digital Image Processing
EC612PE	Mobile Communications and Networks
EC613PE	Embedded System Design

Professional Elective – III

EC711PE	Radar Systems
EC712PE	CMOS Analog IC Design
EC713PE	Artificial Neural Networks

Professional Elective – IV

EC721PE	Network Security and Cryptography
EC722PE	Satellite Communications
EC723PE	Biomedical Instrumentation

Professional Elective – V

EC811PE	Artificial Intelligence
EC812PE	5G and beyond Communications
EC813PE	Machine learning

Professional Elective – VI

EC821PE	Multimedia Database Management Systems

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EC822PE	System on Chip Architecture
EC823PE	Wireless sensor Networks

Open Electives

Open Elective (OE – I)	Open Elective (OE – II)	Open Elective (OE – III)
1. Fundamentals of Internet of Things 2. Principles of Signal Processing 3. Digital Electronics for Engineering	1. Electronic Sensors 2. Electronics for Health Care 3. Telecommunications for Society	1. Measuring Instruments 2. Communication Technologies 3. Fundamentals of Social Networks

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in COMPUTER SCIENCE AND ENGINEERING
COURSE STRUCTURE, I & II YEAR SYLLABUS (R22 Regulations)
Applicable from AY 2022-23 Batch

I Year I Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	CH102BS	Engineering Chemistry	3	1	0	4
3.	CS103ES	Programming for Problem Solving	3	0	0	3
4.	EE104ES	Basic Electrical Engineering	2	0	0	2
5.	ME105ES	Computer Aided Engineering Graphics	1	0	4	3
6.	CS106ES	Elements of Computer Science & Engineering	0	0	2	1
7.	CH107BS	Engineering Chemistry Laboratory	0	0	2	1
8.	CS108ES	Programming for Problem Solving Laboratory	0	0	2	1
9.	EE109ES	Basic Electrical Engineering Laboratory	0	0	2	1
		Induction Program				
		Total	**12**	**2**	**12**	**20**

I Year II Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	PH202BS	Applied Physics	3	1	0	4
3.	ME203ES	Engineering Workshop	0	1	3	2.5
4.	EN204HS	English for Skill Enhancement	2	0	0	2
5.	EC205ES	Electronic Devices and Circuits	2	0	0	2
6.	CS206ES	Python Programming Laboratory	0	1	2	2
7.	PH207BS	Applied Physics Laboratory	0	0	3	1.5
8.	EN208HS	English Language and Communication Skills Laboratory	0	0	2	1
9.	CS209ES	IT Workshop	0	0	2	1
10.	*MC210	Environmental Science	3	0	0	0
		Total	**13**	**4**	**12**	**20**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Digital Electronics	3	0	0	3
2		Data Structures	3	0	0	3
3		Computer Oriented Statistical Methods	3	1	0	4
4		Computer Organization and Architecture	3	0	0	3
5		Object Oriented Programming through Java	3	0	0	3
6		Data Structures Lab	0	0	3	1.5
7		Object Oriented Programming through Java Lab	0	0	3	1.5
8		Data visualization- R Programming/ Power BI	0	0	2	1
9	*MC	Gender Sensitization Lab	0	0	2	0
		Total	**15**	**1**	**10**	**20**

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II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Discrete Mathematics	3	0	0	3
2		Business Economics & Financial Analysis	3	0	0	3
3		Operating Systems	3	0	0	3
4		Database Management Systems	3	0	0	3
5		Software Engineering	3	0	0	3
6		Operating Systems Lab	0	0	2	1
7		Database Management Systems Lab	0	0	2	1
8		Real-time Research Project/ Societal Related Project	0	0	4	2
9		Node JS/ React JS/ Django	0	0	2	1
10	*MC	Constitution of India	3	0	0	0
		Total	18	0	10	20

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Design and Analysis of Algorithms	3	1	0	4
2		Computer Networks	3	0	0	3
3		DevOps	3	0	0	3
4		Professional Elective-I	3	0	0	3
5		Professional Elective -II	3	0	0	3
6		Computer Networks Lab	0	0	2	1
7		DevOps Lab	0	0	2	1
8		Advanced English Communication Skills Lab	0	0	2	1
9		UI design- Flutter	0	0	2	1
10	*MC	Intellectual Property Rights	3	0	0	0
		Total	18	1	8	20

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Machine Learning	3	0	0	3
2		Formal Languages and Automata Theory	3	0	0	3
3		Artificial Intelligence	3	0	0	3
4		Professional Elective – III	3	0	0	3
5		Open Elective-I	3	0	0	3
6		Machine Learning Lab	0	0	2	1
7		Artificial Intelligence Laboratory	0	0	2	1
8		Professional Elective-III Lab	0	0	2	1
9		Industrial Oriented Mini Project/ Internship/ Skill Development Course (Big data-Spark)	0	0	4	2
10	*MC	Environmental Science	3	0	0	0
		Total	18	0	8	20

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Environmental Science in III Yr II Sem Should be Registered by Lateral Entry Students Only.

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Cryptography and Network Security	3	0	0	3
2		Compiler Design	3	0	0	3
3		Professional Elective -IV	3	0	0	3
4		Professional Elective -V	3	0	0	3
5		Open Elective - II	3	0	0	3
6		Cryptography and Network Security Lab	0	0	2	1
7		Compiler Design Lab	0	0	2	1
8		Project Stage - I	0	0	6	3
		Total Credits	**15**	**0**	**10**	**20**

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Organizational Behavior	3	0	0	3
2		Professional Elective – VI	3	0	0	3
3		Open Elective – III	3	0	0	3
4		Project Stage – II including Seminar	0	0	22	11
		Total Credits	**9**	**0**	**22**	**20**

*MC – Satisfactory/Unsatisfactory

#Skill Course - 1 credit with 2 Practical Hours

Professional Elective - I

	Quantum Computing
	Advanced Computer Architecture
	Data Analytics
	Image Processing
	Principles of Programming Languages

Professional Elective - II

	Computer Graphics
	Embedded Systems
	Information Retrieval Systems
	Distributed Databases
	Natural Language Processing

Professional Elective - III

	Full Stack Development
	Internet of Things
	Scripting Languages
	Mobile Application Development
	Software Testing Methodologies

 # Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

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Professional Elective -IV

	Graph Theory
	Advanced Operating Systems
	Soft Computing
	Cloud Computing
	Ad hoc & Sensor Networks

Professional Elective -V

	Advanced Algorithms
	Agile Methodology
	Robotic Process Automation
	Blockchain Technology
	Software Process & Project Management

Professional Elective – VI

	Computational Complexity
	Distributed Systems
	Deep Learning
	Human Computer Interaction
	Cyber Forensics

Open Elective -1:
1. Data Structures
2. Database Management Systems

Open Elective -2:
1. Operating Systems
2. Software Engineering

Open Elective -3:
1. Algorithms Design and Analysis
2. Introduction to Computer Networks

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)
COURSE STRUCTURE, I & II YEAR SYLLABUS (R22 Regulations)
Applicable from AY 2022-23 Batch

I Year I Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	CH102BS	Engineering Chemistry	3	1	0	4
3.	CS103ES	Programming for Problem Solving	3	0	0	3
4.	EE104ES	Basic Electrical Engineering	2	0	0	2
5.	ME105ES	Computer Aided Engineering Graphics	1	0	4	3
6.	CS106ES	Elements of Computer Science & Engineering	0	0	2	1
7.	CH107BS	Engineering Chemistry Laboratory	0	0	2	1
8.	CS108ES	Programming for Problem Solving Laboratory	0	0	2	1
9.	EE109ES	Basic Electrical Engineering Laboratory	0	0	2	1
		Induction Program				
		Total	**12**	**2**	**12**	**20**

I Year II Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	PH202BS	Applied Physics	3	1	0	4
3.	ME203ES	Engineering Workshop	0	1	3	2.5
4.	EN204HS	English for Skill Enhancement	2	0	0	2
5.	EC205ES	Electronic Devices and Circuits	2	0	0	2
6.	CS206ES	Python Programming Laboratory	0	1	2	2
7.	PH207BS	Applied Physics Laboratory	0	0	3	1.5
8.	EN208HS	English Language and Communication Skills Laboratory	0	0	2	1
9.	CS209ES	IT Workshop	0	0	2	1
10.	*MC210	Environmental Science	3	0	0	0
		Total	**13**	**4**	**12**	**20**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Digital Electronics	3	0	0	3
2		Data Structures	3	0	0	3
3		Computer Oriented Statistical Methods	3	1	0	4
4		Computer Organization and Architecture	3	0	0	3
5		Object Oriented Programming through Java	3	0	0	3
6		Data Structures Lab	0	0	3	1.5
7		Object Oriented Programming through Java Lab	0	0	3	1.5
8		Data visualization- R Programming/ Power BI	0	0	2	1
9	*MC	Gender Sensitization Lab	0	0	2	0
		Total	**15**	**1**	**10**	**20**

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II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Discrete Mathematics	3	0	0	3
2		Business Economics & Financial Analysis	3	0	0	3
3		Operating Systems	3	0	0	3
4		Computer Networks	3	0	0	3
5		Software Engineering	3	0	0	3
6		Operating Systems Lab	0	0	2	1
7		Computer Networks Lab	0	0	2	1
8		Real-time Research Project/ Field Based Project	0	0	4	2
9		Node JS/ React JS/ Django	0	0	2	1
10	*MC	Constitution of India	3	0	0	0
		Total	**18**	**0**	**10**	**20**

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Network Security and Cryptography	3	1	0	4
2		Database Management Systems	3	0	0	3
3		Formal Languages and Automata Theory	3	0	0	3
4		Professional Elective - I	3	0	0	3
5		Professional Elective - II	3	0	0	3
6		Network Security and Cryptography Lab	0	0	2	1
7		Database Management Systems Lab	0	0	2	1
8		Advanced English Communication Skills Lab	0	0	2	1
9		UI design- Flutter	0	0	2	1
10	*MC	Intellectual Property Rights	3	0	0	0
		Total	**18**	**1**	**8**	**20**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Cyber Security	3	0	0	3
2		Cyber Crime Investigation & Digital Forensics	3	0	0	3
3		Algorithm Design and Analysis	3	0	0	3
4		Professional Elective – III	3	0	0	3
5		Open Elective - I	3	0	0	3
6		Cyber Security Lab	0	0	2	1
7		Cyber Crime Investigation & Digital Forensics Lab	0	0	2	1
8		Professional Elective – III Lab	0	0	2	1
9		Industrial Oriented Mini Project / Summer Internship/ Skill Development Course (Big data-Spark)	0	0	4	2
10	*MC	Environmental Science	3	0	0	0
		Total	**18**	**0**	**10**	**20**

Environmental Science in III Yr II Sem Should be Registered by Lateral Entry Students Only.

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IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Vulnerability Assessment & Penetration Testing	3	0	0	3
2		Network Management Systems and Operations	3	0	0	3
3		Professional Elective - IV	3	0	0	3
4		Professional Elective - V	3	0	0	3
5		Open Elective - II	3	0	0	3
6		Vulnerability Assessment & Penetration Testing Lab	0	0	2	1
7		Network Management Systems and Operations Lab	0	0	2	1
8		Project Stage - I	0	0	6	3
		Total	15	0	14	20

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Organizational Behavior	3	0	0	3
2		Professional Elective – VI	3	0	0	3
3		Open Elective – III	3	0	0	3
4		Project Stage – II including Seminar	0	0	22	11
		Total	9	0	22	20

*MC – Satisfactory/Unsatisfactory

Professional Elective - I

	Compiler Design
	Artificial Intelligence
	Data warehousing and Data Mining
	Ad-hoc & Sensor Networks
	Cloud Computing

Professional Elective - II

	Ethical Hacking
	Data Science
	Distributed Systems
	Cyber Laws
	IoT Security

Professional Elective - III

	Mobile Application Security
	Machine Learning
	DevOps
	Mobile Application Development
	Blockchain Technology

 # Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

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Professional Elective -IV

	Edge Analytics
	Web & Database Security
	Computer Security & Audit Assurance
	Social Media Security
	Deep Learning

Professional Elective -V

	Quantum Computing
	Data Analytics for Fraud Detection
	5G Technologies
	Security Incident & Response Management (SOC)
	Authentication Techniques

Professional Elective – VI

	Quantum Cryptography
	IoT Cloud Processing and Analytics
	Cloud Security
	Digital Watermarking and Steganography
	Data Privacy

Open Elective I:
1. Cyber Laws
2. Ethical Hacking

Open Elective II:
1. Computer Security & Audit Assurance
2. Social Media Security

Open Elective III:
1. Data Privacy
2. 5G Technologies

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)
COURSE STRUCTURE, I & II YEAR SYLLABUS (R22 Regulations)

Applicable from AY 2022-23 Batch

I Year I Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	CH102BS	Engineering Chemistry	3	1	0	4
3.	CS103ES	Programming for Problem Solving	3	0	0	3
4.	EE104ES	Basic Electrical Engineering	2	0	0	2
5.	ME105ES	Computer Aided Engineering Graphics	1	0	4	3
6.	CS106ES	Elements of Computer Science & Engineering	0	0	2	1
7.	CH107BS	Engineering Chemistry Laboratory	0	0	2	1
8.	CS108ES	Programming for Problem Solving Laboratory	0	0	2	1
9.	EE109ES	Basic Electrical Engineering Laboratory	0	0	2	1
		Induction Program				
		Total	12	2	12	20

I Year II Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	PH202BS	Applied Physics	3	1	0	4
3.	ME203ES	Engineering Workshop	0	1	3	2.5
4.	EN204HS	English for Skill Enhancement	2	0	0	2
5.	EC205ES	Electronic Devices and Circuits	2	0	0	2
6.	CS206ES	Python Programming Laboratory	0	1	2	2
7.	PH207BS	Applied Physics Laboratory	0	0	3	1.5
8.	EN208HS	English Language and Communication Skills Laboratory	0	0	2	1
9.	CS209ES	IT Workshop	0	0	2	1
10.	*MC210	Environmental Science	3	0	0	0
		Total	13	4	12	20

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Digital Electronics	3	0	0	3
2		Data Structures	3	0	0	3
3		Computer Oriented Statistical Methods	3	1	0	4
4		Computer Organization and Architecture	3	0	0	3
5		Object Oriented Programming through Java	3	0	0	3
6		Data Structures Lab	0	0	3	1.5
7		Object Oriented Programming through Java Lab	0	0	3	1.5
8		Data visualization- R Programming/ Power BI	0	0	2	1
9	*MC	Gender Sensitization Lab	0	0	2	0
		Total	15	1	10	20

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II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Discrete Mathematics	3	0	0	3
2		Business Economics & Financial Analysis	3	0	0	3
3		Operating Systems	3	0	0	3
4		Database Management Systems	3	0	0	3
5		Software Engineering	3	0	0	3
6		Operating Systems Lab	0	0	2	1
7		Database Management Systems Lab	0	0	2	1
8		Real-time Research Project/ Societal Related Project	0	0	4	2
9		Node JS/ React JS/ Django	0	0	2	1
10	*MC	Constitution of India	3	0	0	0
		Total	**18**	**0**	**10**	**20**

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Algorithm Design and Analysis	3	0	0	3
2		Data Science	3	1	0	4
3		Computer Networks	3	0	0	3
4		Professional Elective - I	3	0	0	3
5		Professional Elective - II	3	0	0	3
6		R Programming Lab	0	0	2	1
7		Computer Networks Lab	0	0	2	1
8		Advanced English Communication Skills Lab	0	0	2	1
9		ETL-Kafka/Talend	0	0	2	1
10	*MC	Intellectual Property Rights	3	0	0	0
		Total	**18**	**1**	**08**	**20**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Automata Theory and Compiler Design	3	0	0	3
2		Machine Learning	3	0	0	3
3		Big Data Analytics	3	0	0	3
4		Professional Elective – III	3	0	0	3
5		Open Elective - I	3	0	0	3
6		Machine Learning Lab	0	0	2	1
7		Introduction to Big Data Analytics Lab	0	0	2	1
8		Professional Elective - III Lab	0	0	2	1
9		Industrial Oriented Mini Project/ Summer Internship/ Skill Development Course (UI design- Flutter)	0	0	4	2
10	*MC	Environmental Science	3	0	0	0
		Total	**18**	**0**	**10**	**20**

Environmental Science in III Yr II Sem Should be Registered by Lateral Entry Students Only.

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IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Predictive Analytics	3	0	0	3
2		Web and Social Media Analytics	3	0	0	3
3		Professional Elective – IV	3	0	0	3
4		Professional Elective – V	3	0	0	3
5		Open Elective – II	3	0	0	3
6		Web and Social Media Analytics Lab	0	0	2	1
7		Predictive Analytics Lab	0	0	2	1
8		Project Stage – I	0	0	6	3
		Total Credits	**15**	**0**	**10**	**20**

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Organizational Behavior	3	0	0	3
2		Professional Elective – VI	3	0	0	3
3		Open Elective – III	3	0	0	3
4		Project Stage – II including Seminar	0	0	22	11
		Total Credits	**9**	**0**	**22**	**20**

*MC – Satisfactory/Unsatisfactory

Professional Elective - I

	Data Warehousing and Business Intelligence
	Artificial Intelligence
	Web Programming
	Image Processing
	Computer Graphics

Professional Elective - II

	Spatial and Multimedia Databases
	Information Retrieval Systems
	Software Project Management
	DevOps
	Computer Vision and Robotics

Professional Elective - III

	Software Testing Methodologies
	Data Visualization Techniques
	Scripting Languages
	Mobile Application Development
	Cryptography and Network Security

 # Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

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Professional Elective - IV

	Quantum Computing
	Database Security
	Natural Language Processing
	Information Storage Management
	Internet of Things

Professional Elective - V

	Privacy Preserving in Data Mining
	Cloud Computing
	Data Science Applications
	Mining Massive Datasets
	Exploratory Data Analysis

Professional Elective - VI

	Data Stream Mining
	Web Security
	Video Analytics
	Blockchain Technology
	Parallel and Distributed Computing

Open Elective - I
1. Fundamentals of Data Science
2. R Programming

Open Elective - II
1. Data Mining
2. Data Analytics

Open Elective - III
1. Introduction to social media mining
2. Data Visualization using Python

COMMUNICATION
TO
UNIVERSITY

Suggestions for the Board of studies for CSE&ECE – JNTUH Curriculum

1 message

PRINCIPAL SDGI <sdgiprincipal@sreedattha.ac.in>   Mon, Apr 13, 2020 at 5:20 PM
To: DU AAC <duaac@jntuh.ac.in>, registrar@jntuh.ac.in, vcjntu@jntuh.ac.in

Dear Sir,

Herewith we are sending our proposal for revising curriculum based on the feedback from stakeholders. We request

you to kindly consider our request.

Thanking you sir.

With Regards

Dr. B. Venkata Prasanth,
Principal,
Sree Dattha Group of Institutions,
Sheriguda (V), Ibrahimpatnam (M), R. R. Dist, Hyderabad - 501510
+91 8801099932

📄 **AY 2020-21 JNTUH Request.pdf**
18K

PRINCIPAL
Sree Dattha Group of Institutions
Sheriguda, R.R. Dist - 501510.

To
The Registrar,
JNTUH Kukatpally,
HYDERABAD-500085.

Respected Sir,

Sub: Suggestions for the Board of Studies for CSE & ECE – JNTUH Curriculum – A.Y. 2020-21 – Reg.

With reference to the subject cited above, we would like to bring to your kind attention that regular survey and feedback sessions were conducted through online for various stakeholders. Analysis of the feedback received and the subsequent recommendations are included in the institute's CAC and DAC for the updation of curriculum of JNTUH for AY 2020-21. In order to benefit the stakeholders in terms of better placements and best package in industry, the following courses may be included in the curriculum. These will definitely help them to achieve better career prospects.

1. Machine Learning Lab
2. Natural Language Processing
3. E – CAD Lab
4. Satellite Communications
5. Artificial Neural Networks

Technologies cited above, would certainly enable majority of the engineering graduates for the employment opportunities from various industries. We hope that the above suggestions may be considered towards curriculum enhancement.

Thanking You Sir.

Yours faithfully,
Principal.

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Sree Dattha Group of Institutions
Sheriguda, R.R. Dist - 501510.

ACTIONS TAKEN
BY
UNIVERSITY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	AP102BS	Applied Physics	3	1	0	4
3	CS103ES	Programming for Problem Solving	3	1	0	4
4	ME104ES	Engineering Graphics	1	0	4	3
5	AP105BS	Applied Physics Lab	0	0	3	1.5
6	CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	**13**	**3**	**10**	**18**

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	CH202BS	Chemistry	3	1	0	4
3	EE203ES	Basic Electrical Engineering	3	0	0	3
4	ME205ES	Engineering Workshop	1	0	3	2.5
5	EN205HS	English	2	0	0	2
6	CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN207HS	English Language and Communication Skills Lab	0	0	2	1
8	EE208ES	Basic Electrical Engineering Lab	0	0	2	1
		Total Credits	**12**	**2**	**10**	**19**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC301PC	Electronic Devices and Circuits	3	1	0	4
2	EC302PC	Network Analysis and Transmission Lines	3	0	0	3
3	EC303PC	Digital System Design	3	1	0	4
4	EC304PC	Signals and Systems	3	1	0	4
5	EC305ES	Probability Theory and Stochastic Processes	3	0	0	3
6	EC306PC	Electronic Devices and Circuits Lab	0	0	2	1
7	EC307PC	Digital System Design Lab	0	0	2	1
8	EC308ES	Basic Simulation Lab	0	0	2	1
9	*MC309	Constitution of India	3	0	0	0
		Total Credits	**18**	**3**	**6**	**21**

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA401BS	Laplace Transforms, Numerical Methods & Complex Variables	3	1	0	4
2	EC402PC	Electromagnetic Fields and Waves	3	0	0	3

1

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3	EC403PC	Analog and Digital Communications	3	1	0	4
4	EC404PC	Linear IC Applications	3	0	0	3
5	EC405PC	Electronic Circuit Analysis	3	0	0	3
6	EC406PC	Analog and Digital Communications Lab	0	0	3	1.5
7	EC407PC	IC Applications Lab	0	0	3	1.5
8	EC408PC	Electronic Circuit Analysis Lab	0	0	2	1
9	*MC409	Gender Sensitization Lab	0	0	2	0
		Total Credits	**15**	**2**	**10**	**21**

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC501PC	Microprocessors & Microcontrollers	3	1	0	4
2	EC502PC	Data Communications and Networks	3	1	0	4
3	EC503PC	Control Systems	3	1	0	4
4	SM504MS	Business Economics & Financial Analysis	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	EC505PC	Microprocessors & Microcontrollers Lab	0	0	3	1.5
7	EC506PC	Data Communications and Networks Lab	0	0	3	1.5
8	EN508HS	Advanced Communication Skills Lab	0	0	2	1
9	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC601PC	Antennas and Propagation	3	1	0	4
2	EC602PC	Digital Signal Processing	3	1	0	4
3	EC603PC	VLSI Design	3	1	0	4
4		Professional Elective - II	3	0	0	3
5		Open Elective - I	3	0	0	3
6	EC604PC	Digital Signal Processing Lab	0	0	3	1.5
7	EC605PC	e – CAD Lab	0	0	3	1.5
8	EC606PC	Scripting Languages Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC701PC	Microwave and Optical Communications	3	0	0	3
2		Professional Elective – III	3	0	0	3
3		Professional Elective – IV	3	0	0	3
4		Open Elective - II	3	0	0	3
5	SM702MS	Professional Practice, Law & Ethics	2	0	0	2
6	EC703PC	Microwave and Optical Communications Lab	0	0	2	1
7	EC704PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
8	EC705PC	Seminar	0	0	2	1
9	EC706PC	Project Stage - I	0	0	6	3
		Total Credits	**14**	**0**	**10**	**21**

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IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Professional Elective – V	3	0	0	3
2		Professional Elective – VI	3	0	0	3
3		Open Elective - III	3	0	0	3
4	EC801PC	Project Stage - II	0	0	14	7
		Total Credits	9	0	14	16

*MC - Environmental Science – Should be Registered by Lateral Entry Students Only.
*MC – Satisfactory/Unsatisfactory

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective – I

EC511PE	Computer Organization & Operating Systems
EC512PE	Error Correcting Codes
EC513PE	Electronic Measurements and Instrumentation

Professional Elective – II

EC611PE	Object Oriented Programming through Java
EC612PE	Mobile Communications and Networks
EC613PE	Embedded System Design

Professional Elective – III

EC711PE	Artificial Neural Networks
EC712PE	Scripting Languages
EC713PE	Digital Image Processing

Professional Elective – IV

EC721PE	Biomedical Instrumentation
EC722PE	Database Management Systems
EC723PE	Network Security and Cryptography

Professional Elective – V

EC811PE	Satellite Communications
EC812PE	Radar Systems
EC813PE	Wireless Sensor Networks

Professional Elective – VI

EC821PE	System on Chip Architecture
EC822PE	Test and Testability
EC823PE	Low Power VLSI Design

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in COMPUTER SCIENCE AND ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	CH102BS	Chemistry	3	1	0	4
3	EE103ES	Basic Electrical Engineering	3	0	0	3
4	ME105ES	Engineering Workshop	1	0	3	2.5
5	EN105HS	English	2	0	0	2
6	CH106BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN107HS	English Language and Communication Skills Lab	0	0	2	1
8	EE108ES	Basic Electrical Engineering Lab	0	0	2	1
		Induction Programme				
		Total Credits	**12**	**2**	**10**	**19**

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	AP202BS	Applied Physics	3	1	0	4
3	CS203ES	Programming for Problem Solving	3	1	0	4
4	ME204ES	Engineering Graphics	1	0	4	3
5	AP205BS	Applied Physics Lab	0	0	3	1.5
6	CS206ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC209ES	Environmental Science	3	0	0	0
		Total Credits	**13**	**3**	**10**	**18**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS301ES	Analog and Digital Electronics	3	0	0	3
2	CS302PC	Data Structures	3	1	0	4
3	MA303BS	Computer Oriented Statistical Methods	3	1	0	4
4	CS304PC	Computer Organization and Architecture	3	0	0	3
5	CS305PC	Object Oriented Programming using C++	2	0	0	2
6	CS306ES	Analog and Digital Electronics Lab	0	0	2	1
7	CS307PC	Data Structures Lab	0	0	3	1.5
8	CS308PC	IT Workshop Lab	0	0	3	1.5
9	CS309PC	C++ Programming Lab	0	0	2	1
10	*MC309	Gender Sensitization Lab	0	0	2	0
		Total Credits	**14**	**2**	**12**	**21**

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II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS401PC	Discrete Mathematics	3	0	0	3
2	SM402MS	Business Economics & Financial Analysis	3	0	0	3
3	CS403PC	Operating Systems	3	0	0	3
4	CS404PC	Database Management Systems	3	1	0	4
5	CS405PC	Java Programming	3	1	0	4
6	CS406PC	Operating Systems Lab	0	0	3	1.5
7	CS407PC	Database Management Systems Lab	0	0	3	1.5
8	CS408PC	Java Programming Lab	0	0	2	1
9	*MC409	Constitution of India	3	0	0	0
		Total Credits	**18**	**2**	**8**	**21**

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Formal Languages & Automata Theory	3	0	0	3
2	CS502PC	Software Engineering	3	0	0	3
3	CS503PC	Computer Networks	3	0	0	3
4	CS504PC	Web Technologies	3	0	0	3
5		Professional Elective-I	3	0	0	3
6		Professional Elective -II	3	0	0	3
7	CS505PC	Software Engineering Lab	0	0	3	1.5
8	CS506PC	Computer Networks & Web Technologies Lab	0	0	3	1.5
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	**21**	**0**	**8**	**22**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Machine Learning	3	1	0	4
2	CS602PC	Compiler Design	3	1	0	4
3	CS603PC	Design and Analysis of Algorithms	3	1	0	4
4		Professional Elective – III	3	0	0	3
5		Open Elective-I	3	0	0	3
6	CS604PC	Machine Learning Lab	0	0	3	1.5
7	CS605PC	Compiler Design Lab	0	0	3	1.5
8		Professional Elective-III Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

*MC609 - Environmental Science – Should be Registered by Lateral Entry Students Only.

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2

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS701PC	Cryptography & Network Security	3	0	0	3
2	CS702PC	Data Mining	2	0	0	2
3		Professional Elective -IV	3	0	0	3
4		Professional Elective -V	3	0	0	3
5		Open Elective - II	3	0	0	3
6	CS703PC	Cryptography & Network Security Lab	0	0	2	1
7	CS704PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
8	CS705PC	Seminar	0	0	2	1
9	CS706PC	Project Stage - I	0	0	6	3
		Total Credits	**14**	**0**	**10**	**21**

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	SM801MS	Organizational Behaviour	3	0	0	3
2		Professional Elective - VI	3	0	0	3
3		Open Elective - III	3	0	0	3
4	CS802PC	Project Stage - II	0	0	14	7
		Total Credits	**9**	**0**	**14**	**16**

*MC – Satisfactory/Unsatisfactory

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective - I

CS511PE	Information Theory & Coding
CS512PE	Advanced Computer Architecture
CS513PE	Data Analytics
CS514PE	Image Processing
CS515PE	Principles of Programming Languages

Professional Elective - II

CS521PE	Computer Graphics
CS522PE	Advanced Operating Systems
CS523PE	Informational Retrieval Systems
CS524PE	Distributed Databases
CS525PE	Natural Language Processing

Professional Elective - III

CS611PE	Concurrent Programming
CS612PE	Network Programming
CS613PE	Scripting Languages
CS614PE	Mobile Application Development
CS615PE	Software Testing Methodologies

 # Courses in PE - III and PE - III Lab must be in 1-1 correspondence

3

Professional Elective - IV

CS711PE	Graph Theory
CS712PE	Introduction to Embedded Systems
CS713PE	Artificial Intelligence
CS714PE	Cloud Computing
CS715PE	Ad-hoc & Sensor Networks

Professional Elective - V

CS721PE	Advanced Algorithms
CS722PE	Real Time Systems
CS723PE	Soft Computing
CS724PE	Internet of Things
CS725PE	Software Process & Project Management

Professional Elective – VI

CS811PE	Computational Complexity
CS812PE	Distributed Systems
CS813PE	Neural Networks & Deep Learning
CS814PE	Human Computer Interaction
CS815PE	Cyber Forensics

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Sheriguda, R.R. Dist - 501510.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in CSE (CYBER SECURITY)
III & IV YEAR COURSE STRUCTURE & TENTATIVE SYLLABUS (R18)

Applicable From 2020-21 Admitted Batch

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Design and Analysis of Algorithms	3	0	0	3
2		Cryptography and Network Security	3	0	0	3
3		Database Management Systems	3	0	0	3
4		Formal Languages and Automata Theory	3	0	0	3
5		Professional Elective - I	3	0	0	3
6		Professional Elective - II	3	0	0	3
7		Cryptography and Network Security Lab	0	0	3	1.5
8		Database Management Systems Lab	0	0	3	1.5
9		Advanced Communication Skills Lab	0	0	2	1
10		Intellectual Property Rights	3	0	0	0
		Total Credits	**21**	**0**	**8**	**22**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Cyber Security	3	1	0	4
2		Cyber Crime Investigation & Digital Forensics	3	1	0	4
3		Software Engineering	3	1	0	4
4		Professional Elective – III	3	0	0	3
5		Open Elective - I	3	0	0	3
6		Cyber Security Lab	0	0	3	1.5
7		Cyber Crime Investigation & Digital Forensics Lab	0	0	3	1.5
8		Professional Elective – III Lab	0	0	2	1
9		Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Vulnerability Assessment & Penetration Testing	3	0	0	3
2		Network Management Systems and Operations	2	0	0	2
3		Professional Elective - IV	3	0	0	3
4		Professional Elective - V	3	0	0	3
5		Open Elective - II	3	0	0	3
6		Vulnerability Assessment & Penetration Testing lab	0	0	2	1
7		Industrial Oriented Mini Project / Summer Internship	0	0	0	2*
8		Seminar	0	0	2	1
9		Project Stage - I	0	0	6	3
		Total Credits	**14**	**0**	**10**	**21**

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Sheriguda, R.R. Dist. 501510

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Organizational Behaviour	3	0	0	3
2		Professional Elective - VI	3	0	0	3
3		Open Elective - III	3	0	0	3
4		Project Stage - II	0	0	14	7
		Total Credits	**9**	**0**	**14**	**16**

*Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

MC - Environmental Science – Should be Registered by Lateral Entry Students Only.
MC – Satisfactory/Unsatisfactory.

Professional Elective - I

	Compiler Design
	Artificial Intelligence
	Data warehousing and Data Mining
	Ad-hoc & Sensor Networks
	Cloud Computing

Professional Elective - II

	Ethical Hacking
	Data Science
	Distributed Systems
	Cyber Laws
	IoT Security

Professional Elective - III

	Mobile Application Security
	Machine Learning
	DevOps
	Mobile Application Development
	Blockchain Technology

 # Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

Professional Elective - IV

	Edge Analytics
	Web & Database Security
	Computer Security & Audit Assurance
	Social Media Security
	Deep Learning

Professional Elective - V

	Quantum Computing
	Data Analytics for Fraud Detection
	5G Technologies
	Security Incident & Response Management (SOC)
	Authentication Techniques

Professional Elective – VI

	Quantum Cryptography
	IoT Cloud Processing and Analytics
	Cloud Security
	Digital Watermarking and Steganography
	Data Privacy

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech in CSE (DATA SCIENCE)
III & IV YEAR COURSE STRUCTURE & TENTATIVE SYLLABUS (R18)

Applicable From 2020-21 Admitted Batch

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Design and Analysis of Algorithms	3	0	0	3
2		Introduction to Data Science	3	0	0	3
3		Computer Networks	3	0	0	3
4		Data Mining	3	0	0	3
5		Professional Elective - I	3	0	0	3
6		Professional Elective - II	3	0	0	3
7		Data Mining Lab	0	0	3	1.5
8		Computer Networks Lab	0	0	3	1.5
9		Advanced Communication Skills Lab	0	0	2	1
10		Intellectual Property Rights	3	0	0	0
		Total Credits	**21**	**0**	**8**	**22**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Compiler Design	3	1	0	4
2		Machine Learning	3	1	0	4
3		Big Data Analytics	3	1	0	4
4		Professional Elective – III	3	0	0	3
5		Open Elective - I	3	0	0	3
6		Machine Learning Lab	0	0	3	1.5
7		Big Data Analytics Lab	0	0	3	1.5
8		Professional Elective - III Lab	0	0	2	1
9		Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Predictive Analytics	3	0	0	3
2		Web and Social Media Analytics	2	0	0	2
3		Professional Elective – IV	3	0	0	3
4		Professional Elective – V	3	0	0	3
5		Open Elective – II	3	0	0	3
6		Web and Social Media Analytics Lab	0	0	2	1
7		Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
8		Seminar	0	0	2	1
9		Project Stage – I	0	0	6	3
		Total Credits	**14**	**0**	**10**	**21**

M. Jenvil

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IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Organizational Behaviour	3	0	0	3
2		Professional Elective -VI	3	0	0	3
3		Open Elective-III	3	0	0	3
4		Project Stage - II	0	0	14	7
		Total Credits	**9**	**0**	**14**	**16**

*Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

MC - Environmental Science – Should be Registered by Lateral Entry Students Only.
MC – Satisfactory/Unsatisfactory

Professional Elective-I

	Data Warehousing and Business Intelligence
	Artificial Intelligence
	Web Programming
	Image Processing
	Computer Graphics

Professional Elective - II

	Spatial and Multimedia Databases
	Information Retrieval Systems
	Software Project Management
	DevOps
	Computer Vision and Robotics

Professional Elective - III

	Software Testing Methodologies
	Data Visualization Techniques
	Scripting Languages
	Mobile Application Development
	Cryptography and Network Security

Courses in PE – III and PE – III Lab must be in 1-1 correspondence.

Professional Elective –IV

	Quantum Computing
	Database Security
	Natural Language Processing
	Information Storage Management
	Internet of Things

Professional Elective - V

	Privacy Preserving in Data Mining
	Cloud Computing
	Data Science Applications
	Mining Massive Datasets
	Exploratory Data Analysis

Professional Elective – VI

	Data Stream Mining
	Web Security
	Video Analytics
	Blockchain Technology
	Parallel and Distributed Computing

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