I YEAR I SEMESTER   **COURSE STRUCTURE**

Subject Code	Subject Name	L	T	P/D	Total Credits
A21002	Mathematics-I	3	1	0	4.0
A21003	Applied Physics	3	1	0	4.0
A21201	Basic Electrical Engineering	3	0	0	3.0
A21301	Engineering Graphics & Modeling	1	0	3	2.5
A21501	Programming For Problem Solving-I	2	0	0	2.0
A21082	Applied Physics Lab	0	0	3	1.5
A21281	Basic Electrical Engineering Lab	0	0	2	1.0
A21081	English Language Skills Lab (ELSL)	0	0	2	1.0
A21581	Programming For Problem Solving Lab-I	0	0	2	1.0
TOTAL CREDITS					**20**

I YEAR II SEMESTER   **COURSE STRUCTURE**

Subject Code	Subject Name	L	T	P/D	Total Credits
A22005	English	2	0	0	2.0
A22006	Mathematics-II	3	1	0	4.0
A22008	Chemistry	3	1	0	4.0
A22502	Programming For Problem Solving-II	2	0	0	2.0
A22084	English Communication Skills Lab (ECSL)	0	0	2	1.0
A22086	Chemistry Lab	0	0	3	1.5
A22382	Engineering Workshop	0	1	3	2.5
A22582	Programming For Problem Solving Lab-II	0	0	2	1.0
TOTAL CREDITS					**18**

Note: All End Examinations (Theory and Practical) are of three hours duration.

II YEAR I SEMESTER   **COURSE STRUCTURE**

Subject Code	Subject Name	L	T	P/D	Total Credits
A23012	Probability and Statistics	3	0	0	3
A23405	Digital Logic Design	3	0	0	3
A23401	Electronic Devices & Circuits	3	0	0	3
A23504	Data Structures	3	0	0	3
A23505	Mathematical Foundations of Computer Science	3	0	0	3
A23506	Python Programming	3	0	0	3
A23583	Data Structures & Python Programming Lab	0	0	2	2
A23483	Digital Logic Design and Electronic Devices & Circuits Lab	0	0	2	2
A23MC2	Gender Sensitization/Cyber Laws	2	0	0	--
Total number of Credits					**20**

II YEAR II SEMESTER   **COURSE STRUCTURE**

Subject Code	Subject Name	L	T	P/D	Total Credits
A24507	Design and Analysis of Algorithms	4	0	0	4
A24508	Computer Organization	3	0	0	3
A24509	Java Programming	3	0	0	3
A24510	Software Engineering	3	0	0	3
A24511	Database Management Systems	3	0	0	3
A24015	Professional Communications	2	0	0	2
A24584	Java Programming Lab	0	0	2	1
A24585	Database Management Systems lab	0	0	2	1
A24MC2	Environmental Science	2	0	0	-
Total number of Credits					**20**

Note: All End Examinations (Theory and Practical) are of three hours duration.

L – Lecture   **T – Tutorial**   **P – Practical**   **D – Drawing**

III Year 1st Semester

S. No.	Course Code	Category	Course Title	L	T	P	Credits
1	A25513	PC-9	Computer Networks	3	0	0	3
2	A25514	PC-10	Operating Systems	3	0	0	3
3	A25515	PC-11	Web Technologies	3	0	0	3
4	A25512	PC-12	Formal Languages and Automata Theory	3	0	0	3
5	A25516 A25517 A25518 A25520	PE-1	Human Computer Interaction Linux Programming Software Project Management Computer Graphics	3	0	0	3
6	A25521 A25522 A25523	OE – 1	Basics of Operating Systems Core Java Programming Fundamentals of Computer Networks	3	0	0	3
7	A25586	PC Lab	Computer Networks & Operating Systems Lab	0	0	2	1
8	A25587	PC Lab	Web Technologies Lab	0	0	2	1
9	A25TP2	Value added course -1	Personality Development & Behavioral Skills	2	0	0	1
			Total number of Credits				**21**

III Year 2nd Semester

S. No.		Category	Course Title	L	T	P	Credits
1	A26017	H&S	Managerial Economics and Financial Analysis	3	0	0	3
2	A26524	PC-13	Compiler Design	3	0	0	3
3	A26525	PC-14	Data ware Housing & Data Mining	3	0	0	3
4	A26526	PC-15	Artificial Intelligence	3	0	0	3
5	A26527 A26528 A26529 A26530	PE -2	Object Oriented Analysis & Design Information Security Software Testing Methodologies Principles of Programming Languages	3	0	0	3
6	A26531 A26532 A26533	OE-II	Database Management Systems Software Engineering Fundamentals Essentials of Python Programming	3	0	0	3
7	A26588	PC Lab	Data mining & Case Tools Lab	0	0	2	1
8	A26088	H & S	Advanced Communication Skills Lab	0	0	2	1
9	A26TP1 A26TP2	Value added course -1	Personality Development & Behavioral Skills Quantitative Methods & Logical Reasoning	2	0	0	1
			Total number of Credits				**21**

IV Year 1ˢᵗ Semester

S. No.	Course Code	Category	Course Title	L	T	P	Credits
1	A27534	PC-16	Mobile Application Development	3	0	0	3
2	A27535	PC-17	Cloud Computing	3	0	0	3
3	A27536 A27537 A27538 A27539	PE -3	Big Data Analytics Internet of Things R Programming Image Processing	3	0	0	3
4	A27540 A27541 A27542 A27543	PE-4	Advanced Databases Block-Chain Technologies Information Retrieval Systems Machine Learning	3	0	0	3
5	A27544 A27545 A27546	OE	Web Design Introduction to IOT Fundamentals of Cyber Security	3	0	0	3
6	A27590	PC Lab	Mobile Application Development Lab	0	0	2	1
7	A27591 A27592 A27593 A27594	PE-3 Lab	Big Data Analytics Lab Internet of Things Lab R Programming Lab Image Processing Lab	0	0	2	1
8	A275P1	PW	Mini Project	0	0	0	3
Total number of Credits							**20**

IV Year IIⁿᵈ Semester

S. No.	Course Code	Category	Course Title	L	T	P	Credits
1	A28548	OE-2	E-Commerce	3	0	0	3
2	A28549	OE-3	Semantic Web and Social Networks	3	0	0	3
3	A285TS	PW	Technical Seminar	0	0	0	2
4	A285CV	PW	Comprehensive Viva Voce	0	0	0	2
5	A285P2	PW	Major Project	0	0	0	10
Total number of Credits							**20**

COMPUTER SCIENCE AND ENGINEERING (R15)

COURSE STRUCTURE

I YEAR I SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A11001	English-I	2	0	0	2
A11002	Mathematics - I	4	1	0	3
A11003	Engineering Physics - I	3	1	0	3
A11502	C Programming - I	3	1	0	3
A11004	Engineering Chemistry	3	1	0	3
A11303	Engineering Graphics	2	0	3	3
A11081	English Language Communication Skills Lab – I	0	0	3	2
A11582	C Programming Lab- I	0	0	3	2
A11083	Engineering Physics and Chemistry Lab	0	0	3	2
A11583	IT Workshop	0	0	3	2
	Total	17	07	15	25

I YEAR II SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A12005	English-II	2	0	0	2
A12006	Mathematics – II	4	1	0	3
A12007	Engineering Physics-II	3	1	0	3
A12503	C Programming – II	3	1	0	3
A12009	Mathematics – III	3	1	0	3
A12203	Basic Electrical Engineering	3	1	0	3
A12085	English Language Communication Skills Lab – II	0	0	3	2
A12584	C Programming Lab - II	0	0	3	2
A12382	Engineering Workshop	0	0	3	2
	Total	18	5	9	23

Note: All End Examinations (Theory and Practical) are of three hours duration.

L – Lecture **T – Tutorial** **P – Practical** **D – Drawing**

II YEAR I SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A13014	Probability & Statistics	3	1	0	3
A13504	Mathematical Foundations of Computer Science	3	1	0	3
A13505	Data Structures	4	1	0	4
A13406	Digital Logic Design	3	1	0	3
A13506	Object Oriented Programming	4	1	0	4
A13401	Electronic Devices & Circuits	3	1	0	3
A13585	Data Structures Lab	0	0	3	2
A13483	Electronic Devices & Circuits and Digital Logic Design Lab	0	0	3	2
A13MC3	Professional Communication(15-16)	2	0	0	-
A13MC2	Intellectual Property Rights and Cyber Laws(2017)				
	Total	**22**	**6**	**6**	**24**

II YEAR II SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A14507	Design and Analysis of Algorithms	4	1	0	4
A14508	Computer Organization	3	1	0	3
A14509	Database Management Systems	3	1	0	4
A14510	Software Engineering	3	1	0	3
A14511	Java Programming	3	1	0	4
A14016	Environmental Science	2	1	0	2
A14586	Java Programming Lab	0	0	3	2
A14587	Database Management Systems lab	0	0	3	2
A14MC1	Disaster Management(2015,16)	2	0	0	-
A14MC3	Professional Communication(2017)				
	Total	**20**	**6**	**9**	**24**

Note: All End Examinations (Theory and Practical) are of three hours duration.

L – Lecture   **T – Tutorial**   **P – Practical**   **D – Drawing**

III YEAR I SEMESTER

Subject Code	Subject Name	L	T	P	Total Credits
A15512	Linux Programming	3	1	0	3
A15513	Computer Networks	3	1	0	3
A15514	Operating Systems	3	1	0	3
A15515	Formal Languages & Automata Theory	3	1	0	3
Professional Elective-1	**A15517**-Principles of Programming Languages **A15518** – Human Computer Interaction **A15519** - Software Project Management	3	1	0	3
Open Elective-1	**A15520** – Java Programming **A15521** – Operating Systems	3	1	0	3
A15588	Operating Systems & Computer Networks lab through LINUX.	0	0	3	2
A15089	Advanced Communication Skills Lab	0	0	3	2
A15TP2	Quantitative Methods & Logical Reasoning	2	1	0	2
	Total	20	7	6	**24**

III YEAR II SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A16522	Web Technologies	3	1	0	3
A16523	Compiler Design	3	1	0	3
A16525	Data Warehousing & Data Mining	3	1	0	3
A16018	Managerial Economics & Financial Analysis	3	1	0	3
A16526 A16527 A16528	**Professional Elective-2** • Object Oriented Analysis & Design • Distributed Systems • Information Retrieval Systems	3	1	0	3
Open Elective-2	**A16529** – Database Management System **A16530** – Software Engineering	3	1	0	3
A16589	Web Technologies & Case Tools Lab	0	0	3	2
A16590	Compiler Design & Data Mining Lab	0	0	3	2
A16TP1	Personality Development & Behavioural Skills	2	1	0	2
	Total	20	7	6	**24**

Note: All End Examinations (Theory and Practical) are of three hours duration.

L – Lecture   T – Tutorial   P – Practical   D – Drawing

IV YEAR I SEMESTER

Subject Code	Subject Name	L	T	P	Total Credits
A17531	Mobile Application Development	3	1	0	3
A17532	Information Security	3	1	0	3
A17533	Cloud Computing	3	1	0	3
A17535 A17537 A17536	**Professional Electives-3** 1.Big Data Analytics 2. Internet of Things 3. Image Processing	3	1	0	3
A17538 A17540 A17534	**Professional Electives-4** 1.Advanced Databases 2.Computer Graphics 3.Software Testing Methodologies	3	1	0	3
A17541 A17542	**Open Electives-3** 1. Information System For Engineers 2.Web Design	3	1	0	3
A17593	Mobile Application Development Lab	0	0	3	2
Professional Elective Lab	*A17594:* Hadoop & Bigdata Lab *A17595:* Internet of Things Lab *A17596:* Image Processing With SCI Lab	0	0	3	2
A175P1	Mini Project	0	0	0	2
	Total Credits				**24**

IV YEAR II SEMESTER

Subject Code	Subject Name	L	T	P/D	Total Credits
A18543	Design Patterns	3	1	0	3
A18544	E-Commerce	3	1	0	3
A18545	Semantic Web and Social Networks	3	1	0	3
A185TS	Technical Seminar	0	0	6	2
A185CV	Comprehensive Viva-Voce	0	0	0	2
A185P2	Project	0	0	15	11
	Total Credits				**24**

Note: All End Examinations (Theory and Practical) are of three hours duration.

L – Lecture   T – Tutorial   P – Practical   D – Drawing

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.

B. TECH. COMPUTER SCIENCE AND ENGINEERING

COURSE STRUCTURE- R13

I YEAR

Code	Subject	L	T/P/D	C
A10001	English	2	-	4
A10002	Mathematics – I	3	1	6
A10003	Mathematical Methods	3	-	6
A10004	Engineering Physics	3	-	6
A10005	Engineering Chemistry	3	-	6
A10501	Computer Programming	3	-	6
A10301	Engineering Drawing	2	3	6
A10581	Computer Programming Lab.	-	3	4
A10081	Engineering Physics / Engineering Chemistry Lab.	-	3	4
A10083	English Language Communication Skills Lab.	-	3	4
A10082	IT Workshop / Engineering Workshop	-	3	4
	Total	**19**	**16**	**56**

II YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A30008	Probability and Statistics	4	-	4
A30504	Mathematical Foundations of Computer Science	4	-	4
A30502	Data Structures	4	-	4
A30401	Digital Logic Design	4	-	4
A30404	Electronic Devices and Circuits	4	-	4
A30202	Basic Electrical Engineering	4	-	4
A30282	Electrical and Electronics Lab	-	3	2
A30582	Data Structures Lab	-	3	2
	Total	**24**	**6**	**28**

II YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A40506	Computer Organization	4	-	4
A40507	Database Management Systems	4	-	4
A40503	Java Programming	4	-	4
A40009	Environmental studies	4	-	4
A40509	Formal Languages and Automata Theory	4	-	4
A40508	Design and Analysis of Algorithms	4	-	4
A40585	Java Programming Lab	-	3	2
A40584	Database Management Systems Lab	-	3	2
	Total	24	6	28

III YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A50511	Principles of Programming Languages	4	-	4
A50018 A50017 A50117	**OPEN ELECTIVE** Human Values and Professional Ethics Intellectual Property Rights Disaster Management	4	-	4
A50518	Software Engineering	4	-	4
A50514	Compiler Design	4	-	4
A50510	Operating Systems	4	-	4
A50515	Computer Networks	4	-	4
A50589	Operating Systems Lab	-	3	2
A50587	Compiler Design Lab	-	3	2
	Total	24	6	28

III YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A60521	Distributed Systems	4	-	4
A60522	Information Security	4	-	4
A60524	Object Oriented Analysis and Design	4	-	4
A60525	Software Testing Methodologies	4	-	4
A60010	Managerial Economics and Financial Analysis	4	-	4
A60512	Web Technologies	4	-	4
A60591	Case Tools and Web Technologies Lab	-	3	2
A60086	Advanced Communication Skills Lab	-	3	2
	Total	24	6	28

IV YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A70511	Linux Programming	4	-	4
A70530	Design Patterns	4	-	4
A70520	Data Warehousing and Data Mining	4	-	4
A70519	Cloud Computing	4	-	4
A70540 A70532 A70536 A70529 A70352	**ELECTIVE – I** Software Project Management Image processing and Pattern Recognition Mobile Computing Computer Graphics Operations Research	4	-	4
A70534 A70539 A70533 A70526 A70628	**ELECTIVE – II** Machine Learning Soft Computing Information Retrieval Systems Artificial Intelligence Computer Forensics	4	-	4
A70596	Linux Programming Lab	-	3	2
A70595	Data Warehousing and Mining Lab	-	3	2
	Total	**24**	**6**	**28**

IV YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A80014	Management Science	4	-	4
A80551 A80538 A80537 A80547	**ELECTIVE III** Web Services Semantic Web and Social Networks Scripting Languages Multimedia & Rich Internet Applications	4	-	4
A80542 A80550 A80543 A80439	**ELECTIVE – IV** Ad hoc and Sensor Networks Storage Area Networks Database Security Embedded Systems	4	-	4
A80087	Industry Oriented Mini Project	-	-	2
A80089	Seminar	-	6	2
A80088	Project Work	-	15	10
A80090	Comprehensive Viva	-	-	2
	Total	**12**	**21**	**28**