



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF CSE - COMPUTER SCIENCE & BUSINESS SYSTEMS

COURSE STRUCTURE

For UG – R20

B. Tech - COMPUTER SCIENCE & ENGINEERING with Specialization

Common to

- (i) CSE (COMPUTER SCIENCE & BUSINESS SYSTEMS) – Branch Code: 48**
- (ii) COMPUTER SCIENCE & BUSINESS SYSTEMS - Branch Code: 57**

(Applicable for batches admitted from 2020-2021)



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COURSE STRUCTURE

I Year – I SEMESTER

S. No	Course Code	Subjects	L	T	P	Credits
1	BS1101	Mathematics - I	3	0	0	3
2	BS1104	Applied Physics	3	0	0	3
3	HS1101	Communicative English	3	0	0	3
4	ES1101	Computer Engineering Workshop	1	0	4	3
5	ES1102	Programming for Problem Solving Using C	3	0	0	3
6	HS1102	English Communication skills Laboratory	0	0	3	1.5
7	BS1105	Applied Physics Lab	0	0	3	1.5
8	ES1103	Programming for Problem Solving Using C Lab	0	0	3	1.5
Total Credits						19.5

I Year – II SEMESTER

S. No	Course Code	Subjects	L	T	P	Credits
1	BS1202	Mathematics – II	3	0	0	3
2	BS1206	Applied Chemistry	3	0	0	3
3	ES1204	Problem Solving Using Python	3	0	0	3
4	ES1205	Basic Electrical & Electronics Engineering	3	0	0	3
5	ES1206	Digital Logic Design	3	0	0	3
6	ES1207	Problem Solving Using Python Lab	0	0	3	1.5
7	BS1207	Applied Chemistry Lab	0	0	3	1.5
8	ES1208	Digital Logic Design Lab	0	0	3	1.5
9	MC1203	Constitution of India	2	0	0	0
Total Credits						19.5



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II Year – I SEMESTER

S. No	Course Code	Course Title	L	T	P	C
1.	BSC2101	Mathematics – III	3	0	0	3
2.	PCC2101	Mathematical Foundations of Computer Science	3	0	0	3
3.	PCC2102	Data Structures	3	0	0	3
4.	PCC2103	Formal Languages & Automata Theory	3	0	0	3
5.	PCC2104	Computer Organization & Architecture	3	0	0	3
6.	PCC2105	Data Structures Lab	0	0	3	1.5
7.	PCC2106	Computer Organization & Architecture Lab	0	0	3	1.5
8.	PCC2107	R programming Lab	0	0	3	1.5
9.	SCC2101	Free and Open Source Software	0	0	4	2
10.	MC2101	Essence Of Indian Traditional Knowledge	2	0	0	0
TOTAL						21.5

II Year – II SEMESTER

S. No.	Course Code	Course Title	L	T	P	C
1.	ESC2201	Java Programming	3	0	0	3
2.	BSC2201	Probability and Statistics	3	0	0	3
3.	PCC2201	Operating Systems	3	0	0	3
4.	PCC2202	Database Management System	3	0	0	3
5.	HSMC2201	Fundamentals of Economics	3	0	0	3
6.	ESC2202	Java Programming Lab	0	0	3	1.5
7.	PCC2203	OS&UNIX Programming Lab	0	0	3	1.5
8.	PCC2204	Database Management System Lab	0	0	3	1.5
9.	SC2201	Android Application Development	0	0	4	2
TOTAL						21.5
	Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)		4	0	0	4
	Internship 2 Months (Mandatory) during summer vacation					



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III Year – I SEMESTER

S. No.	Course Code	Course Title	L	T	P	C
1.	PCC3101	Compiler Design	3	0	0	3
2.	PCC3102	Fundamentals of Management	3	0	0	3
3.	PCC3103	Computer Networks	3	0	0	3
4.	OEC3101	Open Elective-I Open Electives offered by other departments/ Web Technologies (Job oriented course)	3	0	0	3
5.	PEC3101	Professional Elective Courses – I 1. Marketing Research and Marketing Management 2. Financials & Cost Accounting 3. Software Engineering 4. Design and Analysis of Algorithms 5. Computer Graphics	3	0	0	3
6.	PCC3104	Compiler Design Lab	3	0	0	1.5
7.	PCC3105	Network Programming Lab	0	0	3	1.5
8.	SC3101	Web Application Development Using Full Stack – Frontend Development –Module -I	0	0	4	2
9.	MC3101	Environmental Science	2	0	0	0
		Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)	0	0	0	1.5
		Total				21.5
		Minor courses	4	0	0	4



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III Year – II SEMESTER

S. No.	Course Code	Course Title	L	T	P	C
1	PCC3201	Operations Research	3	0	0	3
2.	PCC3202	Data Science	3	0	0	3
3.	PCC3203	Fundamentals of Digital Marketing	3	0	0	3
4.	PEC3201	Professional Elective Courses-II (NPTEL/SWAYAM) Duration: 12 Weeks Minimum *Course/subject title can't be repeated	3	0	0	3
5.	OEC3201	Open Elective-II Open Electives offered by other departments/ Web Services(Job Oriented Course)	3	0	0	3
7.	PCC3204	Operations Research Lab	0	0	3	1.5
8	PCC3205	Communication and Leadership Development _ Workshop	0	0	3	1.5
	PCC3206	R Programming Lab	0	0	3	1.5
9.	SC3201	Web Application Development Using Full Stack - Frontend Development –Module -II	0	0	4	2
10.	MC3201	Employability Skills	2	0	0	0
	Total					21.5
	Minor courses		4	0	0	4
	Minor courses through SWAYAM		0	0	0	2
	Industrial/Research Internship (Mandatory) 2 Months during summer vacation					


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IV Year – I SEMESTER

S.No.	Course Code	Course Title	L	T	P	C
1	PEC4101	Professional Elective courses – III 1. Business Strategy 2. Business Environment 3. Internet of Things 4. Machine Learning 5. Social & Web Analytics	3	0	0	3
2.	PEC4102	Professional Elective courses – IV 1. Financial Management 2. Cloud Computing 3. Mean Stack Technologies 4. Business Intelligence 5. IT Project Management	3	0	0	3
3.	PEC4103	Professional Elective courses - V 1. Deep Learning 2. Services Science and Service Operational Management 3. Block chain Technologies 4. Human Resource Management 5. Consumer Buying behaviour	3	0	0	3
4.	OEC4101	Open Elective-III Open Electives offered by other departments/ DevOps (Job Oriented Course)	3	0	0	3
5.	OEC4102	Open Elective-IV Open Electives offered by other departments/ Multimedia And Rich Internet Applications (Job Oriented Course)	3	0	0	3
6.	HSMC4101	Humanities and Social Science Elective 1. Universal Human Values 2. Human Resources Development 3. Innovation And Entrepreneurship 4. Management And Organisational Behaviour 5. Strategic Management	3	0	0	3
7.	SC4101	Multimedia Application Development	0	0	4	2
8.	Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester)		0	0	0	3
Total credits						23
Minor courses			4	0	0	4
Minor courses through SWAYAM			0	0	0	2

IV Year – II SEMESTER

S. No.	Category	Code	Course Title	Hours per week			Credits
1	Major Project	PROJ	Project Project work, seminar and internship in industry	-	-	-	12
INTERNSHIP (6 MONTHS)							
Total credits							12



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Open Electives to be offered by CSBS for Other Branches:

Open Elective I: 1. Data Structures 2. Fundamentals of Management 3. Data Base Management Systems 4. Problem Solving using python	Open Elective II: 1. Java programming 2. Web Technologies 3. Machine Learning 4. Business Strategy
Open Elective III: 1. BigData Analytics 2. IT Project Management 3. Data Science 4. Mean Stack Technologies	Open Elective IV: 1. Internet of things 2. Marketing Research and Marketing Management 3. Human Resource Management 4. Cloud Computing

Minor Degree in CSBS offered to other branches

S. No	Year and Sem	Subject Title	L	T	P	C
1	II Year II Sem	Business Statistics	3	1	0	4
2	III Year I Sem	Financial & Cost Accounting	3	1	0	4
3	III Year II Sem	Human Resource Management	3	1	0	4
4	IV Year I Sem	Entrepreneurship	3	1	0	4
5		02 MOOCS courses @ 2credits each ** 1. Managerial Skills for Interpersonal Dynamics 2. Business Analytics and Data mining modelling using R 3. Web based Technologies and Multimedia Applications 4. Consumer Behaviour				4
Grand Total						20

Note: Out of the 20 Credits, 16 credits shall be earned by specified courses listed above. In addition to the 16 credits, students must pursue at least 2 courses through MOOCs. The courses must be of minimum 8 weeks in duration. Student can register at any time after the completion of II B.Tech. I Sem.

****Choose 02 MOOCS courses @ 2credits each from SWAYAM/NPTEL.**