

COURSE STRUCTURE

B.TECH.

COMPUTER SCIENCE & ENGINEERING

Under

Choice Based Credit System (CBCS)

Credits Distributions

Sr. No.	Category	No. of Credits
1	Humanities and Social Sciences (HS)	25
2	Basic Sciences (BS)	24
3	Engineering Sciences (ES)	24
4	Professional Core (PC)	48
5	Professional Elective (PE)	26
6	Open Elective (OE)	16
7	Project Work (PW)	17
8	Mandatory Non Credit Courses (MNC) (4 Courses)	-
Total		180

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BCHS0101/ BPHS0001	Engineering Chemistry/ Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication I	2	0	0	2	2
4.	BEEG1001/ BECG1001	Basic Electrical Engineering / Electronics Engineering	3	1	0	4	4
5.	BCSG0002	Computer Programming	3	0	0	3	3
PRACTICALS							
1.	BCHS0801/ BPHS0801	Engineering Chemistry Lab / Engineering Physics Lab	0	0	2	1	2
2.	BELH0801	English Language Lab I	0	0	2	1	2
3.	BEEG0800/ BECG0800	Electrical Engineering Lab/ Electronics Lab I	0	0	2	1	2
4.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
5.	BCSG0801	Computer Programming Lab	0	0	2	1	2
		TOTAL	14	3	10	22	27

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BPHS0001/ BCHS0101/	Engineering Physics/ Engineering Chemistry	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication II	2	0	0	2	2
4.	BECG1001/ BEEG1001	Electronics Engineering/ Basic Electrical Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSG1001	Python Programming	3	0	0	3	3
PRACTICALS							
1.	BPHS0801/ BCHS0801	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2	1	2
2.	BELH0802	English Language Lab II	0	0	2	1	2
3.	BECG0800/ BEEG0800	Electronics Lab I/ Electrical Engineering Lab	0	0	2	1	2
4.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
5.	BCSG1800	Python Programming Lab	0	0	2	1	2
		TOTAL	17	4	10	26	31

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC1002	Object Oriented Programming	3	0	0	0	3	3	Programming
2.	BCSC1003/ BCSC0014	Database Management System/ Applied Database Management System	3/4	0	0	0	3/4	3/4	
3.	BCSC0004	Operating Systems	3	0	0	0	3	3	
4.	BCSC1005	Computer Organization	3	0	0	0	3	3	
5.	BCSC0006/ BCSC0015	Data Structures and Algorithms/ Applied Data Structures and Algorithms	3/4	1	0	0	4/5	4/5	Programming
6.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
7.	BCSC0008	Computer Networks	3	1	0	0	4	4	
8.	BCSC0009	Software Engineering	3	0	0	0	3	3	
9.	BCSC1010	Discrete Mathematics	3	1	0	0	4	4	
10.	BCSC0011	Theory of Automata and Formal Language	3	1	0	0	4	4	
11.	BCSC1012	Design and Analysis of Algorithms	3	0	0	0	3	3	Programming, Data Structures
12.	BCSE0101	Digital Image Processing	3	0	0	0	3	3	Mathematics, Programming
PRACTICALS									
1.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
2,	BCSC0802/ BCSC0808	Database Management System Lab/ Applied Database Management System	0	0	2	0	1	2	
3.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
4.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
5.	BCSC0805/ BCSC0809	Data Structures and Algorithms Lab/ Applied Data Structures and Algorithms	0	0	2	0	1	2	Programming Lab
6.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	
7.	BCSC1807	Design and Analysis of Algorithms Lab	0	0	2	0	1	2	Programming, Data Structures
8.	BCSE0131	Digital Image Processing Lab	0	0	2	0	1	2	Programming
Total			36/ 38	4	16	0	48/ 50	56/ 58	

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Computer Network and Security									
THEORY									
1.	BCSE0001	Network Programming and Management	3	0	0	0	3	3	Computer Networks
2.	BCSE1002	Principles of Mobile Computing	3	1	0	0	4	4	Computer Networks
3.	BCSE0003	Ad Hoc Networks	3	0	0	0	3	3	Computer Networks
4.	BCSE1004	Cryptography and Network Security	3	0	0	0	3	3	Computer Networks
5.	BCSE0005	Cyber security and Digital Forensics	3	0	0	0	3	3	Computer Networks
6.	BCSE0006	Information Coding Techniques	3	0	0	0	3	3	Computer Networks
PRACTICALS									
1.	BCSE0070	Network Programming and Management Lab	0	0	2	0	1	2	Computer Networks
2.	BCSE0071	Cryptography and Network Security Lab	0	0	2	0	1	2	Computer Networks
3.	BCSE0072	Information Coding Techniques Lab	0	0	2	0	1	2	Computer Networks

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Software Engineering									
THEORY									
1.	BCSE0051	Software Quality Engineering	3	0	0	0	3	3	Software Engineering
2.	BCSE0052	Service Oriented Architecture	3	0	0	0	3	3	Software Engineering
3.	BCSE0053	Agile Software Development	3	0	0	0	3	3	Software Engineering
4.	BCSE0054	Software Project Management	3	0	0	0	3	3	Software Engineering
5.	BCSE0055	Software Testing	3	0	0	0	3	3	Software Engineering
6.	BCSC0013	Compiler Design	3	1	0	0	4	4	Theory of Automata & Formal Language

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Image Processing and Intelligent System									
THEORY									
1.	BCSE0102	Computer Graphics And Multimedia	3	1	0	0	4	4	Mathematics, Programming
2.	BCSE0103	Soft Computing	3	0	0	0	3	3	Discrete Mathematics
3.	BCSE0104	Artificial Intelligence	3	0	0	0	3	3	Data Structures
4.	BCSE0105	Machine Learning	3	0	0	0	3	3	Mathematics, Programming
5.	BCSE0106	Machine Learning And Its Applications	3	0	0	0	3	3	Mathematics, Programming
PRACTICALS									
1.	BCSE0132	Soft Computing Lab	0	0	2	0	1	2	Programming
2.	BCSE0133	Machine Learning Lab	0	0	2	0	1	2	Programming
PROJECTS									
1.	BCSE0141	Machine Learning Project	0	0	0	-	2	-	Programming

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Advanced Data Processing									
THEORY									
1.	BCSE0151	Advanced Concepts in Database Systems	3	0	0	0	3	3	DBMS
2.	BCSE0152	Data Mining and Warehousing	3	0	0	0	3	3	DBMS
3.	BCSE0153	Business Intelligence	3	0	0	0	3	3	DMW
4.	BCSE0154	Information Retrieval System	3	0	0	0	3	3	Data Structure
5.	BCSE0155	Distributed and Parallel Databases	3	0	0	0	3	3	DBMS
6.	BCSE0156	Natural Language Processing	3	0	0	0	3	3	TAFL/Compiler Design
7.	BCSE0157	Introduction to Big Data Analytics	3	0	0	0	3	3	DBMS
8.	BCSE0158	Big Data Analytics	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0181	Data Mining and Warehousing Lab	0	0	2	0	1	2	
2.	BCSE0182	Business Intelligence Lab	0	0	2	0	1	2	
3.	BCSE0183	Big Data Analytics Lab	0	0	2	0	1	2	
PROJECTS									
1.	BCSE0191	Business Intelligence Project	0	0	0	-	2	-	
2.	BCSE0192	Big Data Analytics Project	0	0	0	-	2	-	Programming

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: High Performance Computing									
THEORY									
1.	BCSE0201	Advanced Computer Architecture	3	0	0	0	3	3	Computer Organization
2.	BCSE0202	Embedded System	3	0	0	0	3	3	Microprocessors
3.	BCSE0203	Internet of Things	3	0	0	0	3	3	Microprocessors
4.	BCSE0204	Internet of Things And Its Applications	3	0	0	0	3	3	
5.	BCSE0205	Distributed System	3	0	0	0	3	3	CN /OS
6.	BCSE0206	Parallel Algorithms	3	0	0	0	3	3	CO & Algorithms
7.	BCSE1207	Cloud Computing	3	0	0	0	3	3	
8.	BCSE0208	Cloud Computing and Virtualization	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0231	Embedded System Lab	0	0	2	0	1	2	
2.	BCSE0232	Internet of Things Lab	0	0	2	0	1	2	
3.	BCSE0233	Parallel Algorithms Lab	0	0	2	0	1	2	
4.	BCSE0234	Cloud Computing lab	0	0	2	0	1	2	
PROJECTS									
1.	BCSE0241	Internet of Things Project	0	0	0	-	2	-	
2.	BCSE0242	Cloud Computing And Virtualization Project	0	0	0	-	2	-	

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Development Tools and Technologies									
THEORY									
1.	BCSE1251	Full Stack Using Scripting Technologies	3	0	0	0	3	3	
2.	BCSE0252	Full Stack Using Node JS	3	0	0	0	3	3	
3.	BCSE0253	Full Stack Using C#.net	3	0	0	0	3	3	
4.	BCSE0254	PHP - Scripting Language	3	0	0	0	3	3	
5.	BCSE0255	Digital Marketing And Transformation	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0281	Full Stack Using Scripting Technologies Lab	0	0	2	0	1	2	
2.	BCSE0282	Full Stack Using Node JS Lab	0	0	2	0	1	2	
3.	BCSE0283	Full Stack Using C#.net Lab	0	0	2	0	1	2	
4.	BCSE0284	PHP - Scripting Language Lab	0	0	2	0	1	2	
PROJECTS									
1.	BCSE0291	Full Stack Using Scripting Technologies Project	0	0	0	0	2	-	
2.	BCSE0292	Full Stack Using Node JS Project	0	0	0	0	2	-	
3.	BCSE0293	Full Stack Using C#.net Project	0	0	0	0	2	-	
4.	BCSE0294	PHP - Scripting Language Project	0	0	0	0	2	-	

Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
TOTAL			0	0	0	0	17	0	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	

Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BELH1014	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0016	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH1003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH1004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
PRACTICALS									
1.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
2.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
3.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
4.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
5.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
6.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
TOTAL			13	0	24	0	25	37	

Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
1.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
2.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			17	5	4	0	24	26	

Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG1001	Python Programming	3	0	0	0	3	3	
5.	BCSG0002	Computer Programming	3	0	0	0	3	3	
PRACTICALS									
1.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
2.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
3.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
4.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
5.	BCSG1800	Python Programming Lab	0	0	2	0	1	2	
6.	BCSG0801	Computer Programming Lab	0	0	2	0	1	2	
Total			15	3	12	0	24	25	

Open Elective (Offer to other Departments)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCS00001	Data Structures and Applications	3	0	0	0	3	3	Programming
2.	BCS00002	Introduction To Object Oriented Programming	3	0	0	0	3	3	Programming
3.	BCS00003	Essentials of Information Technology	3	0	0	0	3	3	Object Oriented Programming
4.	BCS00004	Elements of Soft Computing	3	0	0	0	3	3	
5.	BCS00005	Fundamentals of Computer	2	0	0	0	2	2	
6.	BCS00006	Introduction to Programming	2	0	0	0	2	2	
PRACTICALS									
1.	BCS00070	Data Structures and Applications Lab	0	0	2	0	1	2	Programming
2.	BCS00071	Introduction To Object Oriented Programming Lab	0	0	2	0	1	2	Programming
3.	BCS00072	Essentials of Information Technology Lab	0	0	2	0	1	2	Object Oriented Programming
4.	BCS00073	Elements of Soft Computing Lab	0	0	2	0	1	2	
5.	BCS00074	Fundamentals of Computer Lab	0	0	2	0	1	2	
6.	BCS00075	Programming Lab	0	0	2	0	1	2	

