



Sri Krishna College of Engineering and Technology
An Autonomous Institution, Affiliated to Anna University

Coimbatore – 641 008



DEPARTMENT OF COMPUTER SCIENCE AND BUSINESS SYSTEMS

CURRICULUM AND SYLLABI

B.Tech. COMPUTER SCIENCE AND BUSINESS SYSTEMS

REGULATION 2022

DEPARTMENT OF COMPUTER SCIENCE AND BUSINESS SYSTEMS

VISION AND MISSION OF THE DEPARTMENT

VISION

To produce industry ready professionals with information technology acquaintance and human values to contribute to the society at large.

MISSION

- To develop and to promote student ability thereby to compete globally through excellence in education.
- To inculcate varied skill sets that meets industry standards and to practice moral values.
- To enrich high integrity to lead and to serve the society.

DEPARTMENT OF COMPUTER SCIENCE AND BUSINESS SYSTEMS

PROGRAMME OUTCOMES

PROGRAMME OUTCOMES

PO1 - Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2 - Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 - Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 - Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5 - Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6 - The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7 - Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 - Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 - Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10 - Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11 - Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 - Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

DEPARTMENT OF COMPUTER SCIENCE AND BUSINESS SYSTEMS
PROGRAMME EDUCATIONAL OBJECTIVES & PROGRAMME SPECIFIC OUTCOMES

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1 Challenges in their profession through the application of theory and principles of computer engineering.

PEO2 Problem solving skills in computer science and business systems by applying mathematical, scientific, engineering and business fundamentals and also to pursue higher studies.

PEO3 Good scientific and engineering breadth so as to comprehend, analysis, design, and create novel products and solutions for the real-life problems.

PEO4 Possess professional and ethical attitude, effective communication skills, team working skills, multi-disciplinary approach, and an ability to relate engineering issues to broader social context with leadership qualities and progress through life-long learning.

PROGRAMME SPECIFIC OUTCOMES

At the end of the programme, Graduate shall have

PSO 1 Enriched knowledge in aiding academic excellence in order to adopt to changing demands in the cutting-edge technology.

PSO 2 Design varied solutions for real time problems with critical thinking and implement them by using modern software tools with reasoning in lieu of deploying them in the society towards beneficial grounds.

PSO 3 Knowledge of mathematics, science, business systems fundamentals, and an engineering specialization to the solution of complex engineering problems.

Mapping of PO's to PEO's

Programme Educational Objectives (PEO)	Programme Outcomes (PO)											
	1	2	3	4	5	6	7	8	9	10	11	12
PEO 1	3	3	3	3	3	2	2	2	2	3	3	3
PEO 2	3	3	3	3	3	2	2	2	3	3	3	3
PEO 3	3	3	3	3	3	3	2	2	2	3	3	3
PEO 4	2	3	3	3	3	3	3	3	3	3	3	3

Mapping of PO's to PSO's

Programme Specific Outcomes (PSO)	Programme Outcomes (PO)											
	1	2	3	4	5	6	7	8	9	10	11	12
PSO 1	3	3	3	3	3	2	2	2	2	2	2	2
PSO 2	3	3	3	3	3	3	2	2	3	2	3	3
PSO 3	3	3	3	3	3	3	2	2	3	2	3	2

Mapping of PSO's to PEO's

Programme Specific Outcomes (PSO)	Programme Educational Objectives (PEO)			
	1	2	3	4
PSO 1	3	3	3	2
PSO 2	3	3	3	3
PSO 3	3	3	3	3

1	Reasonably agreed	2	Moderately agreed	3	Strongly agreed
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B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS

REGULATION 2022

SEMESTER I							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credits	Int/Ext	Category
THEORY							
1	22MA106	Discrete Mathematics	3/1/0	4	4	40/60	BSC
2	22MA107	Probability and Statistics	3/1/0	4	4	40/60	BSC
THEORY CUM PRACTICAL							
3	22EE112	Principles of Electrical Engineering	3/0/2	5	4	50/50	ESC
4	22CB101	Computer Programming	3/0/2	5	4	50/50	ESC
5	22PH103	Physics for Computing Science	3/0/2	5	4	50/50	BSC
6	22EN102	Business Communication and Value Science I	2/0/2	4	3	50/50	HSMC
MANDATORY COURSE							
7	22MCXXX	Mandatory Course I	2/0/0	2	0	0/100	MC
Total				29	23	600	

SEMESTER II							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
1	22MA205	Linear Algebra	3/1/0	4	4	40/60	BSC
2	22EN201	Business Communication and Value Science II	2/1/0	3	3	40/60	HSMC
3	22MG211	Fundamentals of Economics	3/0/0	3	3	40/60	ESC
4	22CB201	Data Structures	3/0/0	3	3	40/60	PCC
5	22TA101	Heritage of Tamils	1/0/0	1	1	40/60	HSMC
THEORY CUM PRACTICAL							
6	22EC211	Principles of Electronics Engineering	3/0/2	5	4	50/50	ESC
7	22MA206	Statistical Modelling	3/0/2	5	4	50/50	BSC
PRACTICAL							
8	22CB202	Data Structures laboratory	0/0/3	3	1.5	60/40	PCC
MANDATORY COURSE							
9	22MCXXX	Mandatory Course II	2/0/0	2	0	0/100	MC
Total				29	23.5	800	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
1	22CB301	Computer Organization and Architecture	3/0/0	3	3	40/60	ESC
2	22CB302	Object Oriented Programming	3/0/0	3	3	40/60	PCC
3	22CB303	Database Management Systems	3/0/0	3	3	40/60	PCC
4	22TA201	Tamils and Technology	1/0/0	1	1	40/60	HSMC
THEORY CUM PRACTICAL							
5	22MA308	Computational Statistics	3/0/2	5	4	50/50	BSC
6	22CB304	Software Engineering	3/0/2	5	4	50/50	PCC
PRACTICAL							
7	22CB305	Object Oriented Programming Laboratory	0/0/3	3	1.5	60/40	PCC
8	22CB306	Database Management Systems Laboratory	0/0/3	3	1.5	60/40	PCC
MANDATORY COURSE							
9	22MCXXX	Mandatory Course III	2/0/0	2	0	0/100	MC
Total				28	21	800	

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
1	22CB401	Introduction to Innovation, IP Management and Entrepreneurship	3/0/0	3	3	40/60	ESC
2	22EN401	Business Communication and Value Science III	3/0/0	3	3	40/60	HSMC
3	22GE201	Universal Human Values	3/0/0	3	3	40/60	HSMC
4	22CB402	Design and Analysis of Algorithms	3/1/0	4	4	40/60	PCC
THEORY CUM PRACTICAL							
5	22MA408	Operations Research	3/0/2	5	4	50/50	BSC
6	22CB403	Operating Systems	3/0/2	5	4	50/50	PCC
PRACTICAL							

7	22CB404	Design and Analysis of Algorithms Laboratory	0/0/3	3	1.5	60/40	PCC
MANDATORY COURSE							
8	22MCXXX	Mandatory Course IV	2/0/0	2	0	0/100	MC
Total				28	22.5	700	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
1	22CB501	Formal Languages and Automata Theory	3/0/0	3	3	40/60	PCC
2	22CB502	Business Strategy	3/0/0	3	3	40/60	ESC
3	22CB503	Design Thinking	3/0/0	3	3	40/60	PCC
4	22CB9XX	Professional Elective- 1	3/0/0	3	3	40/60	PEC
THEORY CUM PRACTICAL							
5	22CB504	Software Design with UML	3/0/2	5	4	50/50	PCC
6	22CB505	Information Security	3/0/2	5	4	50/50	PCC
PROJECT WORK							
7	22CB506	Mini Project – 1	0/0/4	4	2	60/40	PW
Total				26	22	700	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
1	22XXXXX	Open Elective – 1	3/0/0	3	3	40/60	OEC
2	22CB9XX	Professional Elective – 2	3/0/0	3	3	40/60	PEC
3	22EN603	Business Communication and Value Science IV	2/0/0	2	2	40/60	HSMC
4	22CB601	Artificial Intelligence	3/0/0	3	3	40/60	PCC
THEORY CUM PRACTICAL							
5	22CB602	Computer Networks	3/0/2	5	4	50/50	PCC
6	22CB603	Compiler Design	3/0/2	5	4	50/50	PCC
PRACTICAL							
7	22CB604	Artificial Intelligence Laboratory	0/0/3	3	1.5	60/40	PCC

EMPLOYABILITY ENHANCEMENT SKILLS					
8	22EES01	Employability Enhancement Skills		2	EES
Total			24	22.5	700

SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
1	22CB9XX	Professional Elective – 3	3/0/0	3	3	40/60	PEC
2	22CB9XX	Professional Elective – 4	3/0/0	3	3	40/60	PEC
3	22CB9XX	Professional Elective – 5	3/0/0	3	3	40/60	PEC
4	22CB7XX	Emerging Elective – 1	3/0/0	3	3	40/60	EEC
5	22XXXXX	Open Elective – 2	3/0/0	3	3	40/60	OEC
THEORY CUM PRACTICAL							
6	22CB7XX	Emerging Elective – 2	3/0/2	5	4	50/50	EEC
PROJECT WORK							
7	22CB701	Mini Project – 2	0/0/3	3	1.5	60/40	PW
Total				23	20.5	700	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
THEORY							
PROJECT WORK							
1	22CB801	Project Evaluation	0/0/24	30	12	60/40	PW
Total				30	12	100	

HUMANITIES SCIENCE AND MANAGEMENT COURSES (16 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
1.	22TA101	Heritage of Tamils	1/0/0	1	1	40/60	HSMC
2.	22EN102	Business Communication and Value Science I	2/0/2	4	3	50/50	HSMC
3.	22TA201	Tamils and Technology	1/0/0	1	1	40/60	HSMC
4.	22EN201	Business Communication and Value Science II	2/1/0	3	3	40/60	HSMC
5.	22EN401	Business Communication and Value Science III	3/0/0	3	3	40/60	HSMC
6.	22GE201	Universal Human Values	3/0/0	3	3	40/60	HSMC
7.	22EN603	Business Communication and Value Science IV	2/0/0	2	2	40/60	HSMC

BASIC SCIENCES COURSE (28 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
1	22MA106	Discrete Mathematics	3/1/0	4	4	40/60	BSC
2	22MA107	Probability and Statistics	3/1/0	4	4	40/60	BSC
3	22PH103	Physics for Computing Science	3/0/2	5	4	50/50	BSC
4	22MA205	Linear Algebra	3/1/0	4	4	40/60	BSC
5	22MA206	Statistical Modelling	3/0/2	5	4	50/50	BSC
6	22MA308	Computational Statistics	3/0/2	5	4	50/50	BSC
7	22MA408	Operations Research	3/0/2	5	4	50/50	BSC

ENGINEERING SCIENCES COURSESS (24 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
1	22EE112	Principles of Electrical Engineering	3/0/2	5	4	50/50	ESC
2	22CB101	Computer Programming	3/0/2	5	4	50/50	ESC
3	22MG211	Fundamentals of Economics	3/0/0	3	3	40/60	ESC
4	22EC211	Principles of Electronics Engineering	3/0/2	5	4	50/50	ESC
5	22CB301	Computer Organization and Architecture	3/0/0	3	3	40/60	ESC
6	22CB401	Introduction to Innovation, IP Management and Entrepreneurship	3/0/0	3	3	40/60	ESC

7	22CB502	Business Strategy	3/0/0	3	3	40/60	ESC
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PROFESSIONAL CORECOURSES (53.5 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
1.	22CB201	Data Structures	3/0/0	3	3	40/60	PCC
2.	22CB202	Data Structures Laboratory	0/0/3	3	1.5	60/40	PCC
3.	22CB302	Object Oriented Programming	3/0/0	3	3	40/60	PCC
4.	22CB303	Database Management Systems	3/0/0	3	3	40/60	PCC
5.	22CB304	Software Engineering	3/0/2	5	4	50/50	PCC
6.	22CB305	Object Oriented Programming Laboratory	0/0/3	3	1.5	60/40	PCC
7.	22CB306	Database Management Systems Laboratory	0/0/3	3	1.5	60/40	PCC
8.	22CB402	Design and Analysis of Algorithms	3/1/0	4	4	40/60	PCC
9.	22CB403	Operating Systems	3/0/2	5	4	50/50	PCC
10.	22CB404	Design and Analysis of Algorithms Laboratory	0/0/3	3	1.5	60/40	PCC
11.	22CB501	Formal Languages and Automata Theory	3/0/0	3	3	40/60	PCC
12.	22CB503	Design Thinking	3/0/0	3	3	40/60	PCC
13.	22CB504	Software Design with UML	3/0/2	5	4	50/50	PCC
14.	22CB505	Information Security	3/0/2	5	4	50/50	PCC
15.	22CB601	Artificial Intelligence	3/0/0	3	3	40/60	PCC
16.	22CB602	Computer Networks	3/0/2	5	4	50/50	PCC
17.	22CB603	Compiler Design	3/0/2	5	4	50/50	PCC
18.	22CB604	Artificial Intelligence Laboratory	0/0/3	3	1.5	60/40	PCC

MANDATORY COURSES

S.No.	Course Code	Course Title	Category
1	22MC101	Induction Program	MC
2	22MC102	Environmental Sciences	MC
3	22MC103	Soft Skills	MC
4	22MC105	General Aptitude	MC
5	22MC106	Life Skills and Ethics	MC
6	22MC107	Stress Management	MC
7	22MC108	Constitution of India	MC
8	22MC109	Essence of Indian Traditional Knowledge	MC

EMPLOYABILITY ENHANCEMENT SKILLS

S. No.	Course Code	Course Title	Duration	Credit	Category
1	22EES01	Employability Enhancement Skills	4 Weeks	2	EES

PROFESSIONAL ELECTIVE COURSES (PEC)

S.No.	Course Code	Course	L	T	P	Credit	Int/Ext
Digital Technology and Data Science							
1	22CB911	Conversational Systems	3	0	0	3	40/60
2	22CB912	Fundamentals of Cloud Application Development	3	0	0	3	40/60
3	22CB913	Machine Learning	3	0	0	3	40/60
4	22CB921	Robotics and its Applications	3	0	0	3	40/60
5	22CB922	Modern Web Applications	3	0	0	3	40/60
6	22CB923	Data Mining and Analytics	3	0	0	3	40/60
7	22CB931	Cognitive Science and Analytics	3	0	0	3	40/60
8	22CB932	Internet of Things	3	0	0	3	40/60
9	22CB933	Cryptology	3	0	0	3	40/60
10	22CB941	Quantum Computation and Quantum Information	3	0	0	3	40/60
11	22CB942	Social Information Network	3	0	0	3	40/60
12	22CB943	Mobile Computing	3	0	0	3	40/60
13	22CB963	Image Processing and Pattern Recognition	3	0	0	3	40/60
14	22CB964	Advanced Java Programming	3	0	0	3	40/60
Business Systems							
1	22CB951	Behavioural Economics	3	0	0	3	40/60
2	22CB952	Computational Finance & Modeling	3	0	0	3	40/60
3	22CB953	Industrial Psychology	3	0	0	3	40/60
4	22CB961	Enterprise Systems	3	0	0	3	40/60
5	22CB962	Advance Finance	3	0	0	3	40/60
6	22CB967	Financial Management	3	0	0	3	40/60
7	22CB968	Financial and Cost Accounting	3	0	0	3	40/60
8	22CB969	Fundamentals of Management	3	0	0	3	40/60
9	22CB970	Human Resource Management	3	0	0	3	40/60

EMERGING ELECTIVE COURSES

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Int/Ext	Category
1	22CB702	Usability Design of Software Applications	3/0/2	5	4	50/50	EEC
2	22CB703	IT Project Management	3/0/2	5	4	50/50	EEC
3	22CB704	Marketing Research and Marketing Management	3/0/0	3	3	40/60	EEC
4	22CB705	Services Science and Service Operations Management	3/0/0	3	3	40/60	EEC

OPEN ELECTIVE COURSES OFFERED TO OTHER DEPARTMENTS

S.No.	Course Code	Course	L	T	P	Credit	Int/Ext
1	22CB001	Java Programming	3	0	0	3	40/60
2	22CB002	Usability Design	3	0	0	3	40/60
3	22CB003	Financial Modelling	3	0	0	3	40/60
4	22CB004	Artificial Intelligence and Expert Systems	3	0	0	3	40/60
5	22CB005	Intellectual Property and Entrepreneurship	3	0	0	3	40/60

VALUE ADDED COURSES

S. No.	Course Code	Course	Credit	Category
1	22VA801	Amazon Web Services	1	VAC
2	22VA802	Industry 4.0	1	VAC
3	22VA803	Mobile Applications and Services	1	VAC
4	22VA804	ReactJS	1	VAC
5	22VA805	Spring Boot	1	VAC

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

S. No	Stream	Credits/Semester								Credits	AICTE NORMS
		I	II	III	IV	V	VI	VII	VIII		
	Humanities Science and Management (HSMC)	3	4	1	6		2			16	12
2.	Basic Sciences (BSC)	12	8	4	4					28	24
3.	Engineering Sciences (ESC)	8	7	3	3	3				24	29
4.	Professional Core(PCC)		4.5	13	9.5	14	12.5			53.5	49
5.	Professional Electives (PEC)					3	3	9		15	18
6.	Open Electives (OEC) / Emerging Elective (EEC)						3	10		13	12
7.	Project Work (PW)					2		1.5	12	15.5	15
8.	Employability Enhancement Skills (EES)						2			2	
9.	Mandatory Course (MC)									Non credit	
Total		23	23.5	21	22.5	22	22.5	20.5	12	167	159