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 2020

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 OF THE DEPARTMENT

PROGRAMME OUTCOMES

PO – a Graduates would be able to apply knowledge of mathematics and computing respectively.

PO – b Graduates would be able to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions by using appropriate techniques, skills, and tools necessary for computing practice.

PO – c Graduates would be able to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

PO – d Graduates would be able to receive the broad education necessary to understand the impact of computer science solutions in a global and societal context.

PO – e Graduates would be able to communicate effectively in a variety of professional contexts.

PO – f Graduates would be able to recognize the responsibilities for the computing profession and make informed judgments in computing practice based on legal and ethical principles

PO – g Graduates would be able to acquire independent thinking, possess problem-solving skills related to professional, ethical, legal, security and social issues, and excel in the capability for self-learning to allow for life-long learning.

PO – h Graduates would be able to recognize the attributes and roles of businessmen, entrepreneur, managers, consultants, which will help to possess acquaintance along with the soft skills and to react aptly when confronted to hit on critical decision making.

PO – i Graduates would clearly understand the Life Cycle and process of Project Management, organizational Behavior, individual process happening in an organization, the group process, performance appraisal, personality and attitudes to adhere to the quality management.

PO – j Graduates would be able to have solid knowledge in computer science and business systems, including programming and languages, algorithms, theory, databases, organizational behavior etc.

PO – k Graduates would be able to apply design and development principles in the construction of software systems of varying complexity and excel in Business tactics towards software evolution.

DEPARTMENT OF COMPUTER SCIENCE AND BUSINESS SYSTEMS

PROGRAMME EDUCATIONAL OBJECTIVES & PROGRAMME SPECIFIC OBJECTIVES OF THE DEPARTMENT

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 engineering by applying mathematical, scientific and engineering 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.
PEO5 Exhibit leadership qualities and progress through life-long learning.

PROGRAMME SPECIFIC OBJECTIVES

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.

Mapping of PO's to PEO's

Programme Educational Objectives	Programme Outcomes										
	a	b	c	d	e	f	g	h	i	j	k
PEO 1	3	3	3	3	1	2	2	1	3	3	2
PEO 2	3	3	3	3	3	2	3	2	3	3	3
PEO 3	3	2	3	3	3	3	1	2	3	3	3
PEO 4	2	3	3	3	3	2	3	3	3	3	3
PEO 5	1	2	2	3	3	3	3	3	2	1	3

1	Reasonably agreed	**2**	Moderately agreed	**3**	Strongly agreed

B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS

REGULATION 2020

SEMESTER I							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credits**	**Ext/Int**	**Category**
THEORY							
1	20MA102	Discrete Mathematics	3/1/0	4	4	50/50	BSC
2	20MA103	Probability and Statistics	3/1/0	4	4	50/50	BSC
THEORY CUM PRACTICAL							
3	20EE112	Principles of Electrical Engineering	3/0/2	5	4	40/60	ESC
4	20CB101	Computer Programming	3/0/2	5	4	40/60	ESC
5	20PH103	Physics for Computing Science	3/0/2	5	4	40/60	BSC
6	20EN102	Business Communication and Value Science I	2/0/2	4	3	40/60	HSMC
MANDATORY COURSE							
7	20MCXXX	Mandatory Course I					MC
			Total	**27**	**23**	**600**	

SEMESTER II							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
1	20MA202	Linear Algebra	3/1/0	4	4	50/50	BSC
2	20MG211	Fundamentals of Economics	3/0/0	3	3	50/50	ESC
3	20EN201	Business Communication and Value Science II	2/1/0	3	3	50/50	HSMC
THEORY CUM PRACTICAL							
4	20CB201	Data Structures	3/0/2	5	4	40/60	PCC
5	20EC211	Principles of Electronics Engineering	3/0/2	5	4	40/60	ESC
6	20MA203	Statistical Modelling	3/0/2	5	4	40/60	BSC
MANDATORY COURSE							
7	20MCXXX	Mandatory Course II					MC
			Total	**25**	**22**	**600**	

SEMESTER III							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
1	20CB301	Formal Languages and Automata Theory	3/1/0	4	4	50/50	PCC
2	20CB302	Computer Organization and Architecture	3/0/0	3	3	50/50	PCC
3	20CB303	Object Oriented Programming	3/0/0	3	3	50/50	PCC
THEORY CUM PRACTICAL							
4	20MA308	Computational Statistics	3/0/2	5	4	40/60	BSC
5	20CB304	Software Engineering	3/0/2	5	4	40/60	PCC
PRACTICAL							
6	20CB305	Object Oriented Programming Laboratory	0/0/3	3	1.5	40/60	PCC
MANDATORY COURSE							
7	20MCXXX	Mandatory Course III					MC
			Total	**23**	**19.5**	**600**	

SEMESTER IV							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
1	20CB401	Database Management Systems	3/1/0	4	4	50/50	PCC
2	20CB402	Introduction to Innovation, IP Management and Entrepreneurship	3/0/0	3	3	50/50	ESC
3	20EN401	Business Communication and Value Science III	2/0/0	2	2	50/50	HSMC
THEORY CUM PRACTICAL							
4	20MA408	Operations Research	2/0/2	4	3	40/60	BSC
5	20CB403	Software Design with UML	3/0/2	5	4	40/60	PCC
6	20CB404	Operating Systems	3/0/2	5	4	40/60	PCC
PRACTICAL							
7	20CB405	Database Management Systems Laboratory	0/0/3	3	1.5	40/60	PCC
MANDATORY COURSE							
8	20MCXXX	Mandatory Course IV					MC
			Total	**26**	**21.5**	**700**	

SEMESTER V							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
1	20CB501	Fundamentals of Management	2/0/0	2	2	50/50	ESC
2	20CB502	Business Strategy	2/0/0	2	2	50/50	ESC
3	20CB506	Design Thinking	3/1/0	4	4	50/50	PCC
4	20CB9XX	Professional Elective– 1	3/0/0	3	3	50/50	PEC
THEORY CUM PRACTICAL							
5	20CB503	Design and Analysis of Algorithms	3/0/2	5	4	40/60	PCC
6	20CB504	Compiler Design	3/0/2	5	4	40/60	PCC
PROJECT WORK							
7	20CB505	Mini Project	0/0/4	4	2	40/60	PW
			Total	**25**	**21**	**700**	

SEMESTER VI							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
1	20XXXXX	Open Elective – 1	3/0/0	3	3	50/50	OEC
2	20CB9XX	Professional Elective – 2	3/0/0	3	3	50/50	PEC
3	20EN603	Business Communication and Value Science IV	2/0/0	2	2	50/50	HSMC
THEORY CUM PRACTICAL							
4	20CB601	Computer Networks	3/0/2	5	4	40/60	PCC
5	20CB602	Information Security	3/0/2	5	4	40/60	PCC
6	20CB603	Artificial Intelligence	3/0/2	5	4	40/60	PCC
EMPLOYABILITY ENHANCEMENT SKILLS							
7	20EES01	Employability Enhancement Skills			2		EES
			Total	**23**	**22**	**600**	

SEMESTER VII							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
1	20CB9XX	Professional Elective – 3	3/0/0	3	3	50/50	PEC
2	20CB9XX	Professional Elective – 4	3/0/0	3	3	50/50	PEC
3	20CB9XX	Professional Elective – 5	3/0/0	3	3	50/50	PEC
4	20CB7XX	Emerging Elective – 1	3/1/0	3	4	50/50	EEC
5	20CB7XX	Emerging Elective – 2	3/1/0	3	4	50/50	EEC
6	20XXXXX	Open Elective - 2	3/0/0	3	3	50/50	OEC
PROJECT WORK							
7	20CB703	Project Evaluation I	0/0/10	10	4	40/60	PW
			Total	**28**	**24**	**700**	

SEMESTER VIII							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
THEORY							
PROJECT WORK							
1	20CB801	Project Evaluation II	0/0/30	30	12	40/60	PW
			Total	**30**	**12**	**100**	

HUMANITIES SCINECE AND MANAGEMENT COURSES (10 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	20EN101	Business Communication and Value Science I	2/0/2	4	3	40/60	HSMC
2	20EN201	Business Communication and Value Science II	2/1/0	3	3	50/50	HSMC
3	20EN401	Business Communication and Value Science III	2/0/0	2	2	50/50	HSMC
4	20EN603	Business Communication and Value Science IV	2/0/0	2	2	50/50	HSMC

BASIC SCIENCES COURSES (27 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	20MA102	Discrete Mathematics	3/1/0	4	4	50/50	BSC
2	20MA103	Probability and Statistics	3/1/0	4	4	50/50	BSC
3	20PH103	Physics for Computing Science	3/0/2	5	4	40/60	BSC
4	20MA202	Linear Algebra	3/1/0	4	4	50/50	BSC
5	20MA203	Statistical Modelling	3/0/2	5	4	40/60	BSC
6	20MA308	Computational Statistics	3/0/2	5	4	40/60	BSC
7	20MA408	Operations Research	2/0/2	4	3	40/60	BSC

ENGINEERING SCIENCES COURSES (22 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	20EE112	Principles of Electrical Engineering	3/0/2	5	4	40/60	ESC
2	20CB101	Computer Programming	3/0/2	5	4	40/60	ESC
3	20MG211	Fundamentals of Economics	3/0/0	3	3	50/50	ESC
4	20EC211	Principles of Electronics Engineering	3/0/2	5	4	40/60	ESC
5	20CB402	Introduction to Innovation, IP Management and Entrepreneurship	3/0/0	3	3	50/50	ESC
6	20CB501	Fundamentals of Management	2/0/0	2	2	50/50	ESC
7	20CB502	Business Strategy	2/0/0	2	2	50/50	ESC

PROFESSIONAL CORE COURSES (57 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	20CB201	Data Structures	3/0/2	5	4	40/60	PCC
2	20CB301	Formal Languages and Automata Theory	3/1/0	4	4	50/50	PCC
3	20CB302	Computer Organization and Architecture	3/0/0	3	3	50/50	PCC
4	20CB303	Object Oriented Programming	3/0/0	3	3	50/50	PCC
5	20CB304	Software Engineering	3/0/2	5	4	40/60	PCC
6	20CB305	Object Oriented Programming Laboratory	0/0/3	3	1.5	40/60	PCC
7	20CB401	Database Management Systems	3/1/0	4	4	50/50	PCC
8	20CB403	Software Design with UML	3/0/2	5	4	40/60	PCC
9	20CB404	Operating Systems	3/0/2	5	4	40/60	PCC
10	20CB405	Database Management Systems Laboratory	0/0/3	3	1.5	40/60	PCC
11	20CB503	Design and Analysis of Algorithms	3/0/2	5	4	40/60	PCC
12	20CB504	Compiler Design	3/0/2	5	4	40/60	PCC
13	20CB506	Design Thinking	3/1/0	4	4	50/50	PCC
14	20CB601	Computer Networks	3/0/2	5	4	40/60	PCC
15	20CB602	Information Security	3/0/2	5	4	40/60	PCC
16	20CB603	Artificial Intelligence	3/0/2	5	4	40/60	PCC

MANDATORY COURSES

S.No.	Course Code	Course Title	Category
1	20MC101	Induction Program	MC
2	20MC102	Environmental Sciences	MC
3	20MC103	Soft Skills	MC
4	20MC105	General Aptitude	MC
5	20MC106	Life Skills and Ethics	MC
6	20MC107	Stress Management	MC
7	20MC108	Constitution of India	MC
8	20MC109	Essence of Indian Traditional Knowledge	MC

EMPLOYABILITY ENHANCEMENT SKILLS

S. No.	Course Code	Course Title	Duration	Credit	Category
1	20EES01	Employability Enhancement Skills	4 Weeks	2	EES

PROFESSIONAL ELECTIVE COURSES (PEC)

S.No.	Course Code	Course	L	T	P	Credit	Ext/Int
Digital Technology and Data Science							
1	20CB911	Conversational Systems	3	0	0	3	50/50
2	20CB912	Fundamentals of Cloud Application Development	3	0	0	3	50/50
3	20CB913	Machine Learning	3	0	0	3	50/50
4	20CB921	Robotics and its Applications	3	0	0	3	50/50
5	20CB922	Modern Web Applications	3	0	0	3	50/50
6	20CB923	Data Mining and Analytics	3	0	0	3	50/50
7	20CB931	Cognitive Science and Analytics	3	0	0	3	50/50
8	20CB932	Internet of Things	3	0	0	3	50/50
9	20CB933	Cryptology	3	0	0	3	50/50
10	20CB941	Quantum Computation and Quantum Information	3	0	0	3	50/50
11	20CB942	Social Information Network	3	0	0	3	50/50
12	20CB943	Mobile Computing	3	0	0	3	50/50
13	20CB963	Image Processing and Pattern Recognition	3	0	0	3	50/50
14	20CB964	Advanced Java Programming	3	0	0	3	50/50
Business Systems							
1	20CB951	Behavioural Economics	3	0	0	3	50/50
2	20CB952	Computational Finance &Modelling	3	0	0	3	50/50
3	20CB953	Industrial Psychology	3	0	0	3	50/50
4	20CB961	Enterprise Systems	3	0	0	3	50/50
5	20CB962	Advance Finance	3	0	0	3	50/50
6	20CB967	Financial Management	3	0	0	3	50/50
7	20CB968	Financial and Cost Accounting	3	0	0	3	50/50

EMERGING ELECTIVE COURSES

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	20CB701	Usability Design of Software Applications	3/1/0	4	4	50/50	EEC
2	20CB702	IT Project Management	3/1/0	4	4	50/50	EEC
3	20CB704	Marketing Research and Marketing Management	3/1/0	4	4	50/50	EEC
4	20CB705	Services Science and Service Operations Management	3/1/0	4	4	50/50	EEC

OPEN ELECTIVE COURSES OFFERED TO OTHER DEPARTMENTS

S.No.	Course Code	Course	L	T	P	Credit	Ext/Int
1	20CB001	Java Programming	3	0	0	3	50/50
2	20CB002	Usability Design	3	0	0	3	50/50
3	20CB003	Financial Modelling	3	0	0	3	50/50
4	20CB004	Artificial Intelligence and Expert Systems	3	0	0	3	50/50
5	20CB005	Intellectual Property and Entrepreneurship	3	0	0	3	50/50

ONE CREDIT COURSES

S. No.	Course Code	Course
1	20CB801	Communicative English
2	20CB802	Business Ethics
3	20CB803	Tensorflow
4	20CB804	Angular JS
5	20CB805	Devops
6	20CB806	Anaconda
7	20CB807	MongoDB

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

S. No	Stream	Credits/Semester								Credits	AICTE NORMS
		I	II	III	IV	V	VI	VII	VIII		
1.	Humanities Science and Management Courses (HSMC)	3	3		2		2			10	12
2.	Basic Sciences Courses (BSc)	12	8	4	3					27	24
3.	Engineering Sciences Courses (ESC)	8	7		3	4				22	29
4.	Professional Core Courses (PCC)		4	15.5	13.5	12	12			57	49
5.	Professional Electives Courses (PEC)					3	3	9		15	18
6.	Open Electives Courses (OEC) / Emerging Electives Courses (EEC)						3	11		14	12
7.	Project Work (PW)					2		4	12	18	15
8.	Employability Enhancement Skills (EES)						2			2	
9.	Mandatory Course (MC)									**Non credit**	
Total		**23**	**22**	**19.5**	**21.5**	**21**	**22**	**24**	**12**	**165**	**159**