

# **JERUSALEM COLLEGE OF ENGINEERING**

**(An Autonomous Institution)**

**Approved by AICTE & Affiliated to Anna University**

**Accredited by NAAC with 'A' Grade**

**Chennai – 600 100**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS**

## **CURRICULUM**

**REGULATION 2021**

**CHOICE BASED CREDIT SYSTEM**

**JERUSALEM COLLEGE OF ENGINEERING**  
**(AN AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI)**  
**B.TECH COMPUTER SCIENCE AND BUSINESS SYSTEMS**  
**REGULATION 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**I TO VIII SEMESTERS CURRICULUM**

**COURSE SUMMARY SHEET**

S.No	Category	Credits as per Semester								Total Credits
		1	2	3	4	5	6	7	8	
1	HS	3	4	3	-	2	-	1	-	13
2	BS	10	6	3	3	3	-	-	-	25
3	ES	10	8	-	-	-	-	-	-	18
4	PC	-	5	14	16	11	11	8	-	65
5	PE	-	-	-	-	3	6	6	-	15
6	OE	-	-	-	3	3	3	3	-	12
7	EEC	-	-	-	1	-	3	3	10	17
<b>TOTAL</b>		<b>23</b>	<b>23</b>	<b>20</b>	<b>23</b>	<b>22</b>	<b>23</b>	<b>21</b>	<b>10</b>	<b>165</b>

**JERUSALEM COLLEGE OF ENGINEERING**  
 (AN AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI)  
**B.Tech Computer Science and Business Systems**  
**REGULATION 2021**

**CHOICE BASED CREDIT SYSTEM**  
**I TO VIII SEMESTERS CURRICULUM AND SYLLABI**

**SEMESTER 1**

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JHS1121	Communicative English and Soft Skills I	HS	4	2	0	2	3
2	JMA1102	Matrices and Multivariate Calculus	BS	4	2	2	0	3
3	JPH1101	Engineering Physics	BS	3	3	0	0	3
4	JCY1101	Engineering Chemistry	BS	3	3	0	0	3
5	JGE1101	Engineering Basics	ES	3	3	0	0	3
6	JGE1102	Programming in C	ES	3	3	0	0	3
<b>PRACTICALS</b>								
7	JPC1111	Physics and Chemistry Laboratory	BS	2	0	0	2	1
8	JGE1112	Programming in C Laboratory	ES	4	0	0	4	2
9	JGE1111	Design Appreciation Laboratory	ES	4	0	0	4	2
<b>TOTAL</b>				<b>30</b>	<b>16</b>	<b>2</b>	<b>12</b>	<b>23</b>

**SEMESTER 2**

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JHS1221	Technical English and Soft Skills II	HS	4	2	0	2	3
2	JMA1202	Linear Algebra	BS	4	2	2	0	3
3	JBE1223	Applied Science for Electronics and information Engineering	BS	4	2	0	2	3
4	JGE1201	Python Programming	ES	3	3	0	0	3
5	JCS1301	Data Structures	PC	3	3	0	0	3
6	JGE1202	Engineering Graphics & Design	ES	5	1	0	4	3
7	JNC1261	Environmental Science	NCM	3	3	0	0	0
8	JGE1209	Heritage of Tamils	HS	2	2	0	0	1
<b>PRACTICALS</b>								
9	JGE1211	Python Programming Laboratory	ES	4	0	0	4	2
10	JCS1311	Data Structures Lab	PC	4	0	0	4	2
<b>TOTAL</b>				<b>36</b>	<b>18</b>	<b>2</b>	<b>16</b>	<b>23</b>

### SEMESTER 3

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JMA1304	Discrete Mathematics for Computer Science	BS	4	2	2	0	3
2	JCS1302	Database Management Systems	PC	3	3	0	0	3
3	JCW1301	Introduction to Business Systems	PC	3	3	0	0	3
4	JCS1403	Design and Analysis of Algorithms	PC	3	3	0	0	3
5	JCS1321 (Integrated)	Object Oriented Programming	PC	4	2	0	2	3
6	JGE1309	Tamils and Technology	HS	1	1	0	0	1
<b>PRACTICALS</b>								
7	JCW1311	Business Communication Laboratory I	HS	4	0	0	4	2
8	JCS1312	Database Management Systems Laboratory	PC	4	0	0	4	2
9	JPT1001	Soft Skill and Aptitude-I	EEC	2	0	0	2	*
<b>TOTAL</b>				<b>28</b>	<b>14</b>	<b>2</b>	<b>12</b>	<b>20</b>

\*Only Internal Assessment

### SEMESTER 4

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JMA1405	Applied Probability and Statistics	BS	4	2	2	0	3
2	JCW1401	IP management and Entrepreneurship	PC	3	3	0	0	3
3	JCS1401	Computer Networks	PC	3	3	0	0	3
4	JCS1404	Software Engineering	PC	3	3	0	0	3
5	JCS1402	Operating Systems	PC	3	3	0	0	3
6		Open Elective-I	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7	JCS1412	Operating Systems Laboratory	PC	4	0	0	4	2
8	JCS1411	Networks Laboratory	PC	4	0	0	4	2
9	JPT1001	Soft Skill and Aptitude- II	EEC	2	0	0	2	1
<b>TOTAL</b>				<b>29</b>	<b>17</b>	<b>2</b>	<b>10</b>	<b>23</b>

### SEMESTER 5

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JMA1501	Mathematical Modelling and Optimization Techniques	BS	4	2	2	0	3
2	JIT1602	Artificial Intelligence	PC	3	3	0	0	3
3	JCW1502	Fundamentals of Economics	PC	3	3	0	0	3
4	JCW1503	Information Management	PC	4	3	0	0	3
5		Professional Elective – I	PE	3	3	0	0	3
6		Open Elective-II	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7	JIT1612	Artificial intelligence Laboratory	PC	4	0	0	4	2
8	JCW1512	Business Communication Laboratory II	HS	4	0	0	4	2
9	JPT1002	Technical Skills and Aptitude-I	EEC	2	0	0	2	*
<b>TOTAL</b>				<b>30</b>	<b>16</b>	<b>4</b>	<b>10</b>	<b>22</b>

\*Only Internal Assessment

### SEMESTER 6

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JCW1601	Automata Theory and Compiler Design	PC	4	2	2	0	3
2	JCW1602	Fundamentals of Management	PC	3	3	0	0	3
3	JCW1603	Business Analytics	PC	3	3	0	0	3
4		Professional Elective – II	PE	3	3	0	0	3
5		Professional Elective – III	PE	3	3	0	0	3
6		Open Elective – III	OE	3	3	0	0	3
<b>PRACTICALS</b>								
7	JCW1611	Business Analytics Laboratory	PC	4	0	0	4	2
8	JPT1002	Technical Skills and Aptitude-II	EEC	2	0	0	2	1
9	JCW1621	Mini Project	EEC	2	0	0	2	1
10	JCW1541	Internship	EEC	-	-	-	2	1
<b>TOTAL</b>				<b>27</b>	<b>17</b>	<b>4</b>	<b>10</b>	<b>23</b>

\*\*Internship of two weeks must be undertaken in Industry through semesters 3,4,5 leading to award of 1 credit in Semester VI

### SEMESTER 7

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JCW1701	Financial Management	PC	3	3	0	0	3
2	JAD1603	Deep Learning	PC	3	3	0	0	3
3		Professional Elective – IV	PE	3	3	0	0	3
4		Professional Elective – V	PE	3	3	0	0	3
5		Open Elective –IV	OE	3	3	0	0	3
6	JNC1361	Essence of Indian Traditional Knowledge	NCM	3	3	0	0	0
<b>PRACTICALS</b>								
7	JBA1711	Entrepreneurship for Engineers	HS	2	0	0	2	1
8	JAD1611	Deep Learning Laboratory	PC	4	0	0	4	2
9	JCW1731	Project work – Phase I	EEC	6	0	0	6	3
<b>TOTAL</b>				30	18	0	12	21

### SEMESTER 8

S. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
<b>THEORY</b>								
1	JNC1861	Indian Constitution	NCM	3	3	0	0	0
<b>PRACTICALS</b>								
2	JCW1851	Comprehension and Technical Seminar	EEC	2	0	0	2	1
3	JCW1832	Project work–Phase II	EEC	18	0	0	18	9
<b>TOTAL</b>				23	3	0	20	10

**TOTAL CREDITS : 165**

## OPEN ELECTIVES

### OPEN ELECTIVES – I

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW1001	Introduction to Big Data Analytics	OE	3	3	0	0	3
2.	JCW1002	Basics of Business system	OE	4	3	0	0	3

### OPEN ELECTIVES – II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW1003	Introduction to Database Systems	OE	3	3	0	0	3
2.	JCW1004	Web Essentials	OE	3	3	0	0	3

### OPEN ELECTIVES – III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW1005	Fundamentals of Graphics	OE	3	3	0	0	3
2.	JCW1006	Business basics for Entrepreneurs	OE	3	3	0	0	3

### OPEN ELECTIVES – IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW1007	Foundation of Robotics	OE	3	3	0	0	3
2.	JCW1008	Privacy and Security in online social Media	OE	3	3	0	0	3

# JERUSALEM COLLEGE OF ENGINEERING

(AN AUTONOMOUS INSTITUTION AFFILIATED TO ANNAUNIVERSITY,CHENNAI)

## REGULATION 2021

### PROFESSIONAL ELECTIVE COURSES: VERTICALS

<b>Vertical I Data Science</b>	<b>Vertical II Creative Media</b>	<b>Vertical III Cyber Security</b>	<b>Vertical IV IoT</b>	<b>Vertical V AI &amp; ML</b>
JAD1301- Foundation of Data science	JCS1025 - Principles of Multimedia	JCB1402 -Foundation of Cyber Security	JIT1036 -Internet of Things: Architecture Protocols and Applications	JAL1401- Principles of Artificial Intelligence
JCS1701- Big Data analytics	JCS1026 -3D Modeling and Rendering	JCB1403 - Cryptographyand Cryptanalysis	JIT1037 -Programming for IoT Boards	JAL1501-Machine Learning
JIT1033- Recommender systems	JCS1027 - Augmented reality and Virtual reality	JCB1501 -Cyber Forensics	JIT1038- Industrial IoT 4.0	JAL1503 -Cognitive Science
JCS1020 - Web and Speech Analysis	JCS1028 - Digital Marketing and Commerce	JCB1502- Intrusion Detection And Prevention	JIT1039 -IoT in Healthcare	JAL1601- Neural Networks and Deep Learning
JCS1021 -Social Media Analytics	JCS1029 - Computer Graphics and Animation	JCB1503 -Hardware Security	JIT1040 -Robotics in IoT	JAL1602 -Knowledge Representation and Reasoning
JCS1022- Data Exploration and Visualization	JCS1030 - Video processing and Analytics	JCB1601 -Cloud Security	JIT1041 - Mobile Application development for IoT	JAL1603 -Time Series Analysis and Forecasting
JCS1023 - Health care analytics	JAD1030- Game Development	JCB1603 -Ethical Hacking	JIT1042 - Cognitive IOT	JAL1701 -Essence of Natural Language Processing
JCS1024 - Image and video Analytics	JCS1031 -Media Security	JCB1702 -Web Application Security	JIT1043 - Privacy and Security for IOT	JAL1702 -Robotic Process Automation