

# **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 BUSINESS SYSTEMS**

**B.Tech. CS & BS**

# **CURRICULUM**

**REGULATION 2023  
CHOICE BASED CREDIT SYSTEM**

# JERUSALEM COLLEGE OF ENGINEERING

(AN AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

## B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS

### REGULATION 2023

### CHOICE BASED CREDIT SYSTEM

### I TO VIII SEMESTERS CURRICULUM AND SYLLABI

#### COURSE SUMMARY SHEET

S.No	Category	Credits as per Semester								Total Credits
		I	II	III	IV	V	VI	VII	VIII	
1	HS	4	4	2	2	-	-	2	-	14
2	BS	10	9	3	3	3	-	-	-	28
3	ES	8	3	-	-	-	-	-	-	11
4	PC	-	5	15	12	13	12	-	10	67
5	PE	-	-	-	3	3	6	6	-	18
6	OE	-	-	-	3	3	3	3	-	12
7	EEC	-	2		3	2	3	6	-	16
<b>TOTAL</b>		<b>22</b>	<b>23</b>	<b>20</b>	<b>26</b>	<b>24</b>	<b>24</b>	<b>17</b>	<b>10</b>	<b>166</b>

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**I TO VIII SEMESTERS CURRICULUM AND SYLLABI**

**SEMESTER 1**

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JHS2121	English for Communicative Competence	I	HS	4	2	0	2	3
2	JGE2102	Heritage of Tamils	T	HS	1	1	0	0	1
3	JMA2101	Matrices and Calculus	T	BS	4	2	2	0	3
4	JPH2101	Engineering Physics I	T	BS	3	3	0	0	3
5	JCY2101	Engineering Chemistry	T	BS	3	3	0	0	3
6	JGE2101	Basic Engineering	T	ES	3	3	0	0	3
7	JCS2121	Programming in C	I	ES	5	3	0	2	4
8	JPC2111	Engineering Physics and Chemistry Laboratory	P	BS	2	0	0	2	1
9	JGE2111	Basic Engineering Laboratory	P	ES	2	0	0	2	1
<b>TOTAL</b>					<b>27</b>	<b>17</b>	<b>2</b>	<b>8</b>	<b>22</b>

**SEMESTER 2**

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JHS2221	English for Science and Technology	I	HS	4	2	0	2	3
2	JGE2202	Tamils and Technology	T	HS	1	1	0	0	1
3	JMA2201	Statistics for Engineers	T	BS	4	2	2	0	3
4	JPH2201	Engineering Physics II	T	BS	3	3	0	0	3
5	JCY2201	Environmental Science and Sustainability	T	BS	2	2	0	0	2
6	JGE2221	Engineering Graphics	I	ES	4	2	0	2	3
7	JCS2201	Python Programming	T	PC	3	3	0	0	3
8	JPC2211	Engineering Physics and Environmental Science Laboratory	P	BS	2	0	0	2	1
9	JCS2211	Python Programming Laboratory	P	PC	4	0	0	4	2
10	JGE2241	Gaming and Crafts studio	P	EEC	4	0	0	4	2
<b>TOTAL</b>					<b>31</b>	<b>15</b>	<b>2</b>	<b>14</b>	<b>23</b>

**B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS  
REGULATION 2023  
SEMESTER 3**

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JMA2302	Mathematical Foundations for Computer Science	T	BS	4	2	2	0	3
2	JCS2301	Data Structures and Algorithms	T	PC	3	3	0	0	3
3	JCW2301	Introduction to Business systems	T	PC	3	3	0	0	3
4	JIT2301	Object Oriented Programming	T	PC	3	3	0	0	3
5	JIT2321	Digital Principles and Computer Organization	I	PC	5	3	0	2	4
6	-	Non-Credit Mandatory Course I	T	NCM	3	3	0	0	-
7	JCW2311	Business Communication Laboratory I	P	HS	4	0	0	4	2
8	JIT2311	Object Oriented Programming Laboratory	P	PC	4	0	0	4	2
9	JPT2041	Soft Skill and Aptitude	P	EEC	2	0	0	2	*
<b>TOTAL</b>					<b>31</b>	<b>17</b>	<b>2</b>	<b>12</b>	<b>20</b>

\*Only Internal Assessment

**SEMESTER 4**

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JMA2402	Applied Linear Algebra	T	BS	4	2	2	0	3
2	JCS2401	Database Management systems	T	PC	3	3	0	0	3
3	JIT2421	Operating systems	I	PC	5	3	0	2	4
4	JCW2401	Fundamentals of Management	T	PC	3	3	0	0	3
5	-	Professional Elective I	T	PE	3	3	0	0	3
6	-	Open Elective I	T	OE	3	3	0	0	3
7	JCS2411	Database Management systems Laboratory	P	PC	4	0	0	4	2
8	JCW2411	Business Communication Laboratory II	P	HS	4	0	0	4	2
9	JPT2041	Soft Skills and Aptitude	P	EEC	2	0	0	2	1
10	JGE2442	Advanced IT Infrastructure Laboratory	P	EEC	4	0	0	4	2
<b>TOTAL</b>					<b>35</b>	<b>17</b>	<b>2</b>	<b>16</b>	<b>26</b>

## SEMESTER 5

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JMA2501	Optimization Techniques	T	BS	4	2	2	0	3
2	JCS2501	Computer networks	T	PC	3	3	0	0	3
3	JCW2521	Object Oriented Software Engineering	I	PC	5	3	0	2	4
4	JCS2521	Automata Theory and Compiler Design	I	PC	5	3	0	2	4
5	-	Professional Elective II	T	PE	3	3	0	0	3
6	-	Open Elective II	T	OE	3	3	0	0	3
7	JCS2511	Computer networks Laboratory	P	PC	4	0	0	4	2
8	JPT2042	Technical Skills and Aptitude	P	EEC	2	0	0	2	*
9	JGE2542	MERN STACK Development Laboratory	P	EEC	4	0	0	4	2
<b>TOTAL</b>					<b>33</b>	<b>17</b>	<b>2</b>	<b>14</b>	<b>24</b>

\*Only Internal Assessment

## SEMESTER 6

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JCW2601	Financial and Cost Accounting	T	PC	3	3	0	0	3
2	JCW2602	Business Analytics	T	PC	3	3	0	0	3
3	JCW2621	Data and information security	I	PC	5	3	0	2	4
4	-	Professional Elective III	T	PE	3	3	0	0	3
5	-	Professional Elective IV	T	PE	3	3	0	0	3
6	-	Open Elective III	T	OE	3	3	0	0	3
7	JCW2611	Business Analytics Laboratory	P	PC	4	0	0	4	2
8	JPT2042	Technical Skills and Aptitude	P	EEC	2	0	0	2	1
9	JGE2642	Computational Intelligence Laboratory	P	EEC	4	0	0	4	2
<b>TOTAL</b>					<b>30</b>	<b>18</b>	<b>0</b>	<b>12</b>	<b>24</b>

## SEMESTER 7

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	-	Professional Elective V	T	PE	3	3	0	0	3
2	-	Professional Elective VI	T	PE	3	3	0	0	3
3	-	Open Elective IV	T	OE	3	3	0	0	3
4	-	Non-Credit Mandatory Course II	T	NCM	3	3	0	0	-
5	JHS2741	Universal Human Values	I	HS	3	1	0	2	2
6	JGE2751	Entrepreneurship Development	I	EEC	4	2	0	2	3
7	JCW2741	Comprehension and Technical Seminar	P	EEC	2	0	0	2	1
7	JCW2742	Internship	P	EEC	-	-	-	4**	2
<b>TOTAL</b>					<b>20</b>	<b>15</b>	<b>0</b>	<b>4</b>	<b>17</b>

\*\* Internship of one month must be undertaken in industry through semester 4, 5 and 6 leading to 2 credit in semester 7

## SEMESTER 8

S. No	COURSE CODE	COURSE TITLE	T/P/I	CATEGORY	CONTACT PERIODS	L	T	P	C
1	JCW2831	Project Work	P	PC	20	0	0	20	10
<b>TOTAL</b>					<b>20</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>10</b>

## OPEN ELECTIVES

### OPEN ELECTIVES – I

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW9201	Object Oriented Programming Concepts	OE	3	3	0	0	3
2.	JCW9202	Basics of Business system	OE	3	2	0	0	3

### OPEN ELECTIVES – II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW9203	Web Technology	OE	3	3	0	0	3
2.	JCW9204	Basics of Ethical Hacking	OE	3	3	0	0	3

### OPEN ELECTIVES – III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW9205	Essentials of Software Project Management	OE	3	3	0	0	3
2.	JCW9206	Fundamentals of Big Data	OE	3	3	0	0	3

### OPEN ELECTIVES – IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	JCW9207	Basics of Block Chain	OE	3	3	0	0	3
2.	JCW9208	Computer Graphics Fundamentals	OE	3	3	0	0	3

**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 AIML</b>	<b>Vertical V Automation Tools</b>	<b>Vertical VI Business Practices</b>
JCS2001 Foundation of Data science	JCS2009 Principles of Multimedia	JCB2001 Cyber Security Fundamentals and Practices	JAL2401 Principles of Artificial Intelligence	JAD2001 Agile Methodology	JCW2001 Business strategy
JCS2002 Big data analytics	JCS2010 3D Modeling and Rendering	JCB2002 Cryptography and Cryptanalysis	JAL2501 Machine Learning	JIT2004 Devops	JCW2002 Social network Analysis
JCS2003 Recommender systems	JCS2011 Augmented reality and Virtual reality	JCB2003 Cyber Forensics	JAL2001 Cognitive Science	JAD2003 Software Testing using Selenium	JCW2003 Business psychology
JCS2004 Web and Speech Analysis	JCS2012 Digital Marketing and Commerce	JCB2004 Intrusion Detection and Prevention	JAL2002 Knowledge Representation and Reasoning	JAD2004 Pandas For Data Analysis	JCW2004 Foundations of Entrepreneurship
JCS2005 Social media analytics	JCS2013 Computer Graphics and Animation	JCB2005 Hardware Security	JAL2003 Time Series Analysis and Prediction	JAD2005 Data Visualization Using Tableau	JCW2005 HR Management
JCS2006 Data exploration and visualization	JCS2014 Video processing and Analytics	JCB2006 Cloud Security	JAL2601 Neural Networks and Deep Learning	JAD2006 Jenkins Automation for Server	JCW2006 Total Quality Management
JCS2007 Health care analytics	JCS2015 Game Development	JCB2007 Ethical Hacking	JAL2602 Natural Language Processing	JAD2007 Cloud Computing Tools	JCW2007 Business Research Methods
JCS2008 Image and video Analytics	JCS2016 Media Security	JCB2008 Web Application Security	JAL2004 Robotic Process Automation Tool	JAD2008 Infrastructure Build Tool Using Terraform	JCW2008 Marketing research and Marketing Management