

# JIS University

## R 21 Syllabus Outline

### Department of Computer Science and Engineering

SEMESTER 1							
Sl. No.	Type	Course No.	Course Name	L	T	P	Credits
1	BS		Mathematics I	3	1	0	4
2	BS		Physics	3	0	0	3
3	ES		Basic Electronics	3	0	0	3
4	HS		English	2	0	0	2
5			Basic Problem Solving	2	1	0	3
6	BS		Physics Lab	0	0	3	1.5
7	ES		Basic Electronics Lab	0	0	3	1.5
8	ES		Workshop Practice	0	0	3	1.5
9	HS		Language Lab	0	0	2	1
<b>TOTAL</b>				13	2	11	20.5

SEMESTER 2							
Sl. No.	Type	Course No.	Course Name	L	T	P	Credits
1	BS		Mathematics II	3	1	0	4
2	BS		Chemistry	3	0	0	3
3	ES		Basic Electrical Engineering	3	0	0	3
4	ES		Fundamentals of Programming	2	1	0	3

5	ES		Engineering Mechanics	3	0	0	3
6	BS		Chemistry Lab	0	0	3	1.5
7	ES		Basic Electrical Engineering Lab	0	0	3	1.5
8	ES		Engineering Graphics	0	0	3	1.5
9	ES		Programming Practices 1	0	0	3	1.5
10	MC		NSS / Physical Activities / Meditation & Yoga / Photography / Nature Club	0	0	0	0
<b>TOTAL</b>				14	2	12	22

SEMESTER 3							
Sl. No.	Type	Course No.	Course Name	L	T	P	Credits
	PC		Digital Circuits and Logic Design	3	1	0	4
	PC		Data Structures and Algorithms	3	1	0	4
	BS		Discrete Structures	3	0	0	3
	ES		Object Oriented Programming	3	0	0	3
	BS		Probability and Statistics	3	0	0	3
	PC		Digital Circuits and Logic Design Lab	0	0	3	1.5
	PC		Data Structures and Algorithms Lab	0	0	3	1.5
	ES		Object Oriented Programming Lab	0	0	3	1.5

	MC		Behavioral and Interpersonal Skills	0	0	3	0
	PROJ		Innovative Project Lab I	0	0	2	1
<b>TOTAL</b>				15	2	14	22.5

SEMESTER 4							
Sl. No	Type	Course No.	Course Name	L	T	P	Credits
	PC		Computer Organization and Architecture I	3	0	0	3
	PC		Design and Analysis of Algorithms	3	1	0	4
	PC		Data Base Management System	3	0	0	3
	PC		Formal Language and Automata	3	0	0	3
	HS		Economics for Engineers	2	0	0	1
	PC		Computer Organization and Architecture Lab	0	0	3	1.5
	PC		Algorithms Lab	0	0	3	1.5
	PC		Data Base Management System Lab	0	0	3	1.5
	PC		Programming Practices II (Python)	0	0	3	1.5
	MC		Constitution of India	3	0	0	0
	PROJ		Innovative Project Lab II	0	0	2	1
<b>TOTAL</b>				17	1	14	21

**SEMESTER 5**

Sl. No.	Type	Course No.	Course Name	L	T	P	Credits
	PC		Operating Systems	3	0	0	3
	PC		Embedded Systems	3	0	0	3
	PC		Introduction to Data Science	3	0	0	3
	PC		Advanced Computer Architecture	3	0	0	3
	OE		Elective I	3	0	0	3
	PC		Operating Systems Lab	0	0	3	1.5
	PC		Embedded Systems Lab	0	0	3	1.5
	ES		Data Science Lab	0	0	3	1.5
	MC		Environmental Science	2	0	0	0
	PROJ		Innovative Project Lab III	0	0	2	1
<b>TOTAL</b>				17	0	11	20.5

SEMESTER 6							
Sl. No.	Type	Course No.	Course Name	L	T	P	Credits
	PC		Computer Networks	3	0	0	3
	PC		Compiler Design	3	0	0	3
	OE		Elective II	3	0	3	4.5
	PC		Software Engineering	3	0	0	3
	PE		Cryptography and Network Security	3	0	0	3
	PC		Computer Networks Lab	0	0	3	1.5

	PC		Software Engineering Lab	1	0	2	1.5
	MC		Technical Report Writing and Presentation Skills	0	0	3	0
	PROJ		Innovative Project Lab IV	0	0	2	1
<b>TOTAL</b>				16	0	13	20.5

<b>SEMESTER 7</b>							
Sl. No.	Type	Course No.	Course Name	L	T	P	Credits
	HS		Value and Ethics in Profession	2	0	0	2
	PE		Elective III	3	0	0	3
	PE		Elective IV	3	0	0	3
	PE		Stream Lab 1	0	0	4	2
	ES		MOOCS Elective	3	0	0	3
	PROJ		Project I	0	0	6	3
	MC		Social Awareness / History of Science and Technology / Indian Liberal Arts	3	0	0	0
<b>TOTAL</b>				14	0	10	16

<b>SEMESTER 8</b>							
Sl. No.	Type	Course No.	Course Name	L	T	P	Credits

	HS		Principles of Management	2	0	0	2
	PE		Elective V	3	0	0	3
	PE		Elective VI	3	0	0	3
	PE		Stream Lab 2	0	0	4	2
	SE		Project II	0	0	6	3
	MC		Indian Culture and Tradition	3	0	0	0
<b>TOTAL</b>				11	0	10	13

#### Elective Pool for Open Electives (Elective I)

Sl. No.	Course No.	Course Name	L	T	P	Credits
1		Multimedia Technology	3	0	3	4.5
2		Operations Research	3	0	3	4.5
3		Communication Engineering	3	0	3	4.5

#### Elective Pool for Open Electives (Elective II)

Sl. No.	Course No.	Course Name	L	T	P	Credits
1		Internet Technology	3	0	3	4.5
2		E-commerce and ERP	3	0	3	4.5
3		Cloud Computing	3	0	3	4.5

#### Elective Pool for Specialization "AI and Machine Learning"

Sl. No.	Course No.	Course Name	L	T	P	Credits
		<b>(Electives III, IV)</b>				
		<b>Artificial Intelligence</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
		<b>Machine Learning</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
		<b>Data Warehousing and Data Mining</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
		<b>(Electives V, VI)</b>				
		<b>Data Analytics</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
		<b>Natural Language Processing</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
		<b>Deep Learning</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>