

**B.E (Computer Science and Engineering) Curriculum – Regulation 2018****Minimum Credits to be Earned : 160**

Semester I								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OA11	Technical English – I	HS	4	3	1	0	4
2	18OB01	Matrices and Calculus	BS	5	4	1	0	5
3	18PC01	Programming Logic and Design	ES	7	3	0	4	5
4	18PC17	Fundamentals of Computers	ES	3	3	0	0	3
5	18PC07	Engineering Practices for Computer Sciences	ES	4	0	0	4	2
6	18OG01	Environmental Science for Engineers	MC	5	3	0	2	-
Total				28	16	2	10	19

Semester II								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OA12	Technical English – II	HS	5	3	0	2	4
2	18OB02	Vector Calculus and Integral Transforms	BS	5	4	1	0	5
3	18OB21	Engineering Physics	BS	6	3	1	2	5
4	18PC04	Advanced C Programming	ES	7	3	0	4	5
5	18PC14	Electronic Devices and Circuits	ES	5	3	0	2	4
Total				28	16	2	10	23

Semester III								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OB11	Discrete Mathematical Structures	BS	5	4	1	0	5
2	18PC09	Digital Electronics and Microprocessors	ES	6	4	0	2	5
3	18PD02	Data Structures	PC	7	3	0	4	5
4	18PD08	Computer Architecture	PC	4	4	0	0	4
5	18PD07	System Software	PC	5	3	0	2	4

Total	27	18	1	8	23
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Semester IV								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OB07	Probability Theory and Mathematical Statistics	BS	5	4	1	0	5
2	18PC12	Fundamentals of Web Scripting	ES	5	3	0	2	4
3	18PD05	Database Management Systems	PC	7	3	0	4	5
4	18PD09	Software Engineering	PC	4	3	1	0	4
5	18PEXX	Elective I	PE	7	3	0	4	5
6	18OG02	Indian Constitution	MC	3	3	0	0	-
Total				31	19	2	10	23

Semester V								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18PD10	Data Warehousing and Data mining	PC	4	4	0	0	4
2	18PD15	Data Communication and Computer Networks	PC	5	3	0	2	4
3	18PD13	Java programming	PC	7	3	0	4	5
4	18PD04	Software Testing	PC	3	3	0	0	3
5	18XXXX	Elective II	OE	4	4	0	0	4
6	18PF01	Soft Skills	EEC	3	-	-	3	-
7	18PF02	Mini Project - I	EEC	2	-	-	2	1
7	18PF05	Internship - I	EEC	2	-	-	2	1
Total				33	17	0	13	22

Semester VI								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18PD11	Object Oriented Analysis and Design	PC	5	3	0	2	4
2	18PD12	Unix and Shell Programming	PC	5	3	0	2	4
3	18XXXX	Elective III	OE	3	3	0	0	3
4	18XXXX	Elective IV	OE	3	3	0	0	3

5	18XXXX	Elective V	OE	4	3	1	0	4
6	18OG03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	-
7	18PF03	Mini Project - II	EEC	2	0	0	2	1
Total				25	18	1	6	19

Semester VII								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OA01	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
2	18PEXX	Elective VI	PE	3	3	0	0	3
3	18PEXX	Elective VII	PE	3	3	0	0	3
4	18PEXX	Elective VIII	PE	5	3	0	2	4
5	18PF03	Comprehension	EEC	-	-	-	-	-
6	18PF25	Project Work – Phase I	EEC	4	0	0	4	2
Total				18	12	0	6	15

Semester VIII								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18PEXX	Elective IX	PE	3	3	0	0	3
2	18XXXX	Elective X	OE	3	3	0	0	3
3	18PF50	Project Work – Phase II	EEC	20	0	0	20	10
Total				26	6	0	20	16

<b>Total Credits</b>	<b>160</b>
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## GROUPING OF COURSES

## 1. Humanities and Social Sciences (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OA01	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
2	18OA03	Professional Practice, Law and Ethics	HS	3	3	0	0	3
3	18OA04	Organizational Behavior	HS	3	3	0	0	3
4	18OA05	Finance and Accounting	HS	3	3	0	0	3
5	18OA11	Technical English – I	HS	4	3	1	0	4
6	18OA12	Technical English – II	HS	5	3	0	2	4
7	18OA13	Business English – I	HS	5	3	0	2	4
8	18OA14	Business English – II	HS	5	3	0	2	4
9	18OA21	Basics of French	HS	4	3	1	0	4
10	18OA22	Functional French	HS	4	3	1	0	4
11	18OA31	Basics of German	HS	4	3	1	0	4
12	18OA32	Functional German	HS	4	3	1	0	4
13	18OA41	Basics of Japanese	HS	4	3	1	0	4
14	18OA42	Functional Japanese	HS	4	3	1	0	4

## 2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OB01	Matrices and Calculus	BS	5	4	1	0	5
2	18OB02	Vector Calculus and Integral Transforms	BS	5	4	1	0	5
3	18OB03	Computational Differential Equations and Mathematical Statistics	BS	5	4	1	0	5
4	18OB04	Partial Differential Equations, Scientific Computing and Complex Variables	BS	5	4	1	0	5
5	18OB05	Z-Transform, Differential Equations and Complex Variables	BS	5	4	1	0	5
6	18OB06	Mathematical Foundations of Computing Sciences	BS	5	4	1	0	5
7	18OB07	Probability Theory and Mathematical Statistics	BS	5	4	1	0	5
8	18OB08	Probability and Random Processes	BS	5	4	1	0	5
9	18OB09	Optimization Techniques	BS	5	4	1	0	5
10	18OB10	Foundations of Computing Sciences	BS	5	4	1	0	5
11	18OB11	Discrete Mathematical Structures	BS	5	4	1	0	5
12	18OB12	Probability and Statistics	BS	5	4	1	0	5
13	18OB13	Mathematical Optimization Techniques	BS	5	4	1	0	5
14	18OB14	Operations Research	BS	3	3	0	0	3
15	18OB15	Numerical Linear Algebra	BS	5	4	1	0	5
16	18OB21	Engineering Physics	BS	6	3	1	2	5
17	18OB22	Physics for Electrical Sciences	BS	4	4	0	0	4
18	18OB23	Physics for Mechanical Sciences	BS	4	4	0	0	4

19	18OB24	Material Science for Civil Engineers	BS	4	4	0	0	4
20	18OB31	Chemistry for Electrical Sciences	BS	5	3	0	2	4
21	18OB32	Applied Chemistry	BS	3	3	0	0	3

**3. Engineering Sciences (ES)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18PC01	Programming Logic and Design	ES	7	3	0	4	5
2	18PC02	C Programming – I	ES	7	3	0	4	5
3	18PC03	C Programming – II	ES	7	3	0	4	5
4	18PC04	Advanced C Programming	ES	7	3	0	4	5
5	18PC05	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
6	18PC06	Basics of Electrical Engineering	ES	5	3	0	2	4
7	18PC07	Engineering Practices for Computer Sciences	ES	4	0	0	4	2
8	18PC08	Engineering Graphics	ES	4	0	0	4	2
9	18PC09	Digital Electronics and Microprocessors	ES	6	4	0	2	5
10	18PC10	Fundamentals of Digital Communication	ES	3	3	0	0	3
11	18PC11	PHP Programming	ES	5	3	0	2	4
12	18PC12	Fundamentals of Web Scripting	ES	5	3	0	2	4
13	18PC13	Information Technology Essentials	ES	3	3	0	0	3
14	18PC14	Electronic Devices and Circuits	ES	5	3	0	2	4
15	18PC15	Progressive C Programming	ES	7	3	0	4	5
16	18PC16	Ethics in Information Technology	ES	3	3	0	0	3
17	18PC17	Fundamentals of Computers	ES	3	3	0	0	3
18	18PC18	Fundamentals of Computer Communication	ES	3	3	0	0	3

**4. Professional Core (PC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18PD01	Python Programming	PC	7	3	0	4	5
2	18PD02	Data Structures	PC	7	3	0	4	5
3	18PD03	Operating Systems	PC	5	3	0	2	4
4	18PD04	Software Testing	PC	3	3	0	0	3
5	18PD05	Database Management Systems	PC	7	3	0	4	5
6	18PD06	Object Oriented Programming	PC	5	3	0	2	4
7	18PD07	System Software	PC	5	3	0	2	4
8	18PD08	Computer Architecture	PC	4	4	0	0	4
9	18PD09	Software Engineering	PC	4	3	1	0	4
10	18PD10	Data Warehousing and Data mining	PC	4	4	0	0	4
11	18PD11	Object Oriented Analysis and Design	PC	5	3	0	2	4
12	18PD12	Unix and Shell Programming	PC	5	3	0	2	4
13	18PD13	Java Programming	PC	7	3	0	4	5
14	18PD14	Computer Graphics and Multimedia	PC	5	3	0	2	4
15	18PD15	Data Communication and Computer Networks	PC	5	3	0	2	4
16	18PD16	XML and Web Services	PC	3	3	0	0	3
17	18PD17	Information Security	PC	3	3	0	0	3
18	18PD18	Formal Language and Automata Theory	PC	3	3	0	0	3

19	18PD19	Principles of Compiler Design	PC	6	3	1	2	5
20	18PD20	Artificial Intelligence	PC	4	3	1	0	4
21	18PD21	Streaming Analytics	PC	5	3	0	2	4
22	18PD22	Statistics and Data Science	PC	4	4	0	0	4
23	18PD23	Data Analytics with R Programming	PC	5	3	0	2	4

**5. Professional Electives (PE)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18PE01	Advanced Data Structures	PE	7	3	0	4	5
2	18PE02	Cloud Computing Techniques	PE	3	3	0	0	3
3	18PE03	Mobile and Pervasive Computing	PE	4	4	0	0	4
4	18PE04	Advanced Java Programming	PE	7	3	0	4	5
5	18PE05	Design and Analysis of Algorithms	PE	7	3	0	4	5
6	18PE06	Information Storage and Management	PE	4	3	1	0	4
7	18PE07	Dot Net Technologies	PE	3	3	0	0	3
8	18PE08	Mobile Application Development	PE	5	3	0	2	4
9	18PE09	Business Intelligence	PE	3	3	0	0	3
10	18PE10	Internet of Things	PE	5	3	0	2	4
11	18PE11	Enterprise Application	PE	3	3	0	0	3
12	18PE12	Service Oriented Architecture	PE	3	3	0	0	3
13	18PE13	Open Source Technologies	PE	5	3	0	2	4
14	18PE14	Cyber Forensics	PE	3	3	0	0	3
15	18PE15	Human Computer Interaction	PE	3	3	0	0	3
16	18PE16	Agile Methodologies	PE	3	3	0	0	3
17	18PE17	Software Project Management	PE	3	3	0	0	3
18	18PE18	Web Application Development Using Java	PE	7	3	0	4	5
19	18PE19	Web Application Development Using Python	PE	7	3	0	4	5
20	18PE20	DevOps in Java	PE	7	3	0	4	5
21	18PE21	DevOps in Python	PE	7	3	0	4	5
22	18PE22	Advanced Algorithms	PE	7	3	0	4	5
23	18PE23	Advanced Python Programming	PE	7	3	0	4	5
24	18PE24	Advanced Database Management Systems	PE	7	3	0	4	5
25	18PE25	Natural Language Processing	PE	3	3	0	0	3
26	18PE26	Software Quality Assurance and Testing	PE	3	3	0	0	3
27	18PE27	E – Commerce Technology	PE	3	3	0	0	3
28	18PE28	Big Data Analytics	PE	5	3	0	2	4
29	18PE29	Robotic Process Automation	PE	5	3	0	2	4
30	18PE30	Linux System Administration	PE	5	3	0	2	4
31	18PE31	User Interface Design	PE	3	3	0	0	3
32	18PE32	Developing Web Applications using Dot Net	PE	3	3	0	0	3

**6. Employability Enhancement Courses (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	

1	18PF01	Soft Skills	EEC	3	-	-	3	-
2	18PF02	Mini Project – I	EEC	2	0	0	2	1
3	18PF03	Mini Project – II	EEC	2	0	0	2	1
4	18PF04	Comprehension	EEC	-	-	-	-	-
5	18PF05	Internship – I	EEC	2	0	0	2	1
6	18PF06	Internship – II	EEC	2	0	0	2	1
7	18PF25	Project Work – Phase I	EEC	4	0	0	4	2
8	18PF50	Project Work – Phase II	EEC	20	0	0	20	10

### 7. Mandatory Courses (MC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	18OG01	Environmental Science for Engineers	MC	5	3	0	2	-
2	18OG02	Indian Constitution	MC	3	3	0	0	-
3	18OG03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	-