

**B.E (Computer Science and Engineering) Curriculum – Regulation 2017****Minimum Credits to be Earned : 180**

Semester I								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17OA11	English for Engineers	HS	5	3	2	0	4
2	17OB01	Matrices and Calculus	BS	6	4	2	0	5
3	17PC02	C Programming - I	ES	7	3	0	4	5
4	17PC01	Introduction to Programming Logics and Design	ES	3	3	0	0	3
5	17OA01	Environmental Science for Engineers	HS	5	3	0	2	4
6	17PC07	Engineering Practices for Computer Sciences	ES	4	0	0	4	2
7	17PC17	Fundamentals of Computers	ES	3	3	0	0	3
<b>TOTAL</b>				<b>33</b>	<b>19</b>	<b>4</b>	<b>10</b>	<b>26</b>

Semester II								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17OA12	Communicative English	HS	5	3	0	2	4
2	17OB02	Vector Calculus and Integral Transforms	BS	6	4	2	0	5
3	17OB21	Physics for Engineers	BS	5	3	0	2	4
4	17OB22	Physics for Electrical Sciences	BS	4	4	0	0	4
5	17PC03	C Programming - II	ES	7	3	0	4	5
6	17PC14	Electronic Devices and Circuits	ES	5	3	0	2	4
<b>TOTAL</b>				<b>32</b>	<b>20</b>	<b>2</b>	<b>10</b>	<b>26</b>

Semester III								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17OB10	Discrete Mathematical Structures	BS	6	4	2	0	5
2	17PC09	Digital Principles and System Design	ES	5	3	0	2	4
3	17PC11	PHP Programming	ES	5	3	0	2	4
4	17PD02	Data Structures	PC	7	3	0	4	5
5	17PD04	Computer Architecture	PC	4	4	0	0	4
6	17PD03	Operating Systems	PC	5	3	0	2	4
<b>TOTAL</b>				<b>32</b>	<b>20</b>	<b>2</b>	<b>10</b>	<b>26</b>

Semester IV								
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S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17OB07	Probability Theory and Mathematical Statistics	BS	6	4	2	0	5
2	17PD08	Microprocessors and Microcontrollers	PC	5	3	0	2	4
3	17PD09	Software Engineering	PC	5	3	0	2	4
4	17PD06	Database Management Systems	PC	7	3	0	4	5
5	17PD13	Java programming	PC	7	3	0	4	5
<b>TOTAL</b>				<b>30</b>	<b>16</b>	<b>2</b>	<b>12</b>	<b>23</b>

Semester V								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PD15	Data Communication and Computer Networks	PC	5	3	0	2	4
2	17PD11	Object Oriented Analysis and Design	PC	5	3	0	2	4
3	17PD22	Principles of Compiler Design	PC	7	3	2	2	5
4	17PEXX	Elective I	PE	5	3	0	2	4
5	17PEXX	Elective II	PE	5	3	0	2	4
6	17PF01	Soft Skills	EEC	4	2	2	0	3
<b>TOTAL</b>				<b>31</b>	<b>17</b>	<b>4</b>	<b>10</b>	<b>24</b>

Semester VI								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PD19	Cryptography and Network Security	PC	7	3	2	2	5
2	17OA02	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
3	17PD12	Unix and Shell Programming	PC	5	3	0	2	4
4	17XXXX	Elective III	OE	3	3	0	0	3
5	17XXXX	Elective IV	OE	3	3	0	0	3
6	17PEXX	Elective V	PE	7	3	0	4	5
<b>TOTAL</b>				<b>28</b>	<b>18</b>	<b>2</b>	<b>8</b>	<b>23</b>

Semester VII								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PD14	Computer Graphics and Multimedia	PC	5	3	0	2	4
2	17PEXX	Elective VI	PE	5	3	2	0	4
3	17PEXX	Elective VII	PE	3	3	0	0	3
4	17XXXX	Elective VIII	OE	3	3	0	0	3
5	17PF25	Project Work – Phase I	EEC	6	0	0	6	3
6	17PF03	Comprehension	EEC	-	-	-	-	-
<b>TOTAL</b>				<b>22</b>	<b>12</b>	<b>2</b>	<b>8</b>	<b>17</b>

Semester VIII								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PF50	Project Work – Phase II	EEC	30	0	0	30	15
<b>TOTAL</b>				<b>30</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>15</b>

<b>Total Credits</b>	<b>180</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	17OA01	Environmental Science for Engineers	HS	5	3	0	2	4
2	17OA02	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
3	17OA11	English for Engineers	HS	5	3	2	0	4
4	17OA12	Communicative English	HS	5	3	0	2	4
5	17OA13	Business English	HS	5	3	0	2	4
6	17OA21	Basics of French	HS	5	3	2	0	4
7	17OA22	Functional French	HS	5	3	2	0	4
8	17OA31	Basics of German	HS	5	3	2	0	4
9	17OA32	Functional German	HS	5	3	2	0	4
10	17OA41	Basics of Japanese	HS	5	3	2	0	4
11	17OA42	Functional Japanese	HS	5	3	2	0	4

## 2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17OB01	Matrices and Calculus	BS	6	4	2	0	5
2	17OB02	Vector Calculus and Integral Transforms	BS	6	4	2	0	5
3	17OB03	Curve Fitting, Partial Differential Equations and Mathematical Statistics	BS	6	4	2	0	5
4	17OB04	Partial Differential Equations, Scientific Computing and Complex Variables	BS	6	4	2	0	5
5	17OB05	Z-Transform, Differential Equations and Complex Variables	BS	6	4	2	0	5
6	17OB06	Mathematical Foundations of Computing Sciences	BS	6	4	2	0	5
7	17OB07	Probability Theory and Mathematical Statistics	BS	6	4	2	0	5
8	17OB08	Probability and Random Processes	BS	6	4	2	0	5
9	17OB09	Curve fitting and Optimization Techniques	BS	6	4	2	0	5
10	17OB10	Discrete Mathematical Structures	BS	6	4	2	0	5
11	17OB11	Probability and Statistics	BS	6	4	2	0	5

12	17OB12	Mathematical Optimization Techniques	BS	6	4	2	0	5
13	17OB21	Physics for Engineers	BS	5	3	0	2	4
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
14	17OB22	Physics for Electrical Sciences	BS	4	4	0	0	4
15	17OB23	Physics for Mechanical Sciences	BS	4	4	0	0	4
16	17OB24	Material Science	BS	4	4	0	0	4
17	17OB25	Basics of Mechanics	BS	5	3	2	0	4
18	17OB31	Engineering Chemistry	BS	4	4	0	0	4
19	17OB32	Applied Chemistry	BS	4	4	0	0	4

### 3. Engineering Sciences (ES)

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

19	17PC19	Ethics in Information Technology	ES	3	3	0	0	3
20	17PC20	Fundamentals of Web Scripting	ES	5	3	0	2	4

#### 4. Professional Core (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PD01	Python Programming	PC	7	3	0	4	5
2	17PD02	Data Structures	PC	7	3	0	4	5
3	17PD03	Operating Systems	PC	5	3	0	2	4
4	17PD04	Computer Architecture	PC	4	4	0	0	4
5	17PD05	Object Oriented Programming	PC	5	3	0	2	4
6	17PD06	Database Management Systems	PC	7	3	0	4	5
7	17PD07	System Software	PC	5	3	0	2	4
8	17PD08	Microprocessors and Microcontrollers	PC	5	3	0	2	4
9	17PD09	Software Engineering	PC	5	3	0	2	4
10	17PD10	Data Warehousing and Data Mining	PC	5	3	0	2	4
11	17PD11	Object Oriented Analysis and Design	PC	5	3	0	2	4
12	17PD12	Unix and Shell Programming	PC	5	3	0	2	4
13	17PD13	Java Programming	PC	7	3	0	4	5
14	17PD14	Computer Graphics and Multimedia	PC	5	3	0	2	4
15	17PD15	Data Communication and Computer Networks	PC	5	3	0	2	4
16	17PD16	XML and Web Services	PC	7	3	2	2	5
17	17PD17	Information Security	PC	3	3	0	0	3
18	17PD18	Software Quality Assurance and Testing	PC	3	3	0	0	3
19	17PD19	Cryptography and Network Security	PC	7	3	2	2	5
20	17PD20	System Software and Operating Systems	PC	5	3	0	2	4
21	17PD21	Cloud Computing Techniques	PC	5	3	0	2	4
22	17PD22	Principles of Compiler Design	PC	7	3	2	2	5
23	17PD23	Artificial Intelligence	PC	5	3	2	0	4
24	17PD24	Data Structures and Algorithms Using C	PC	7	3	0	4	5
25	17PD25	Programming in Java	PC	7	3	0	4	5
26	17PD26	Operating System Concepts	PC	5	3	0	2	4
27	17PD27	Relational Database Management Systems	PC	7	3	0	4	5
28	17PD28	Apache Spark with Scala	PC	5	3	0	2	4
29	17PD29	Applied Data Science	PC	5	4	0	0	4

## 5. Professional Electives (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PE01	Advanced Data Structures	PE	7	3	0	4	5
2	17PE02	Advanced Database Management Systems	PE	7	3	0	4	5
3	17PE03	Advanced Operating Systems	PE	5	3	0	2	4
4	17PE04	Advanced Java Programming	PE	7	3	0	4	5
5	17PE05	Design and Analysis of Algorithms	PE	7	3	0	4	5
6	17PE06	Information Storage and Management	PE	5	3	2	0	4
7	17PE07	Information Retrieval Management	PE	3	3	0	0	3
8	17PE08	Mobile Application Development	PE	5	3	0	2	4
9	17PE09	Business Intelligence	PE	3	3	0	0	3
10	17PE10	Enterprise Application	PE	3	3	0	0	3
11	17PE11	Data Science and Big Data Analytics	PE	5	3	0	2	4
12	17PE12	Mobile and Pervasive Computing	PE	5	3	0	2	4
13	17PE13	Service Oriented Architecture	PE	5	3	0	2	4
14	17PE14	Natural Language Processing	PE	3	3	0	0	3
15	17PE15	Open Source Technologies	PE	5	3	0	2	4
16	17PE16	Cyber Forensics	PE	3	3	0	0	3
17	17PE17	Human Computer Interaction	PE	3	3	0	0	3
18	17PE18	Web Application Development using Java	PE	3	3	0	0	3
19	17PE19	Distributed Computing	PE	3	3	0	0	3
20	17PE20	Software Project Management	PE	3	3	0	0	3
21	17PE21	Machine Learning	PE	3	3	0	0	3
22	17PE22	Agent Based Intelligent Systems	PE	3	3	0	0	3
23	17PE23	E – Commerce Technology	PE	5	3	0	2	4
24	17PE24	Intellectual Property Rights	PE	3	3	0	0	3
25	17PE25	Internet of Things	PE	3	3	0	0	3
26	17PE26	Agile Methodologies	PE	3	3	0	0	3
27	17PE27	Advanced Python Programming	PE	3	3	0	2	4
28	17PE28	Advanced Web Scripting	PE	3	3	0	2	4
29	17PE29	Scripting And Web Development	PE	3	3	0	2	4
30	17PE31	Web Application Development Using Python	PE	3	3	0	4	5
31	17PE32	Analytics with R-Programming alongside with Visualization	PE	3	3	0	2	4

## 6. Employability Enhancement Courses (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	17PF01	Soft Skills	EEC	4	2	2	0	3
2	17PF02	Mini Project	EEC	4	0	0	4	2
3	17PF03	Comprehension	EEC	-	-	-	-	-
4	17PF25	Project Work – Phase I	EEC	6	0	0	6	3
5	17PF50	Project Work – Phase II	EEC	30	0	0	30	15