

**Shree Manibhai Virani and Smt. Navalben Virani Science College, Rajkot  
(Autonomous)  
Affiliated to Saurashtra University, Rajkot**

**Department of Computer Science & Information Technology  
M.Sc. INFORMATION TECHNOLOGY & COMPUTER APPLICATION**

**OBJECTIVES OF THE PROGRAMME**

The Curriculum is designed to attain the following learning goals which students shall accomplish by the time of their post graduation:

- To develop mastery of emerging technologies in IT infrastructures, software development, IT systems management including IT security and to appreciate the necessity for continuing professional development.
- To demonstrate understanding of and apply current theories, models and techniques for the software development process.
- Explain and apply appropriate information technologies to help an individual or organization to achieve its goals and objectives.
- Manage the information technology resources of an individual or organization.
- Specify, design, develop, test and manage application software systems to meet the operational and business requirements of organizations.
- Anticipate the changing direction of information technology and evaluate and communicate the likely utility of new technologies to an individual or organization.
- Demonstrate an understanding of best practices and standards and their application.
- Work in a team using common tools and environments to achieve project objectives.

**SCHEME OF INSTRUCTION AND EXAMINATIONS**  
**For Students Admitted from A.Y. 2016-2017 & Onwards**

<b>Semester - I</b>							
Course Code	Course	Hrs. of Instruction/ week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
<b>Part - I</b>							
16PITCC01	<b>Core 1:</b> Advanced Web Development in LARAVEL	4	3	30	70	100	4
16PITCC02	<b>Core 2:</b> No SQL Database MongoDB	4	3	30	70	100	4
16PITDC01 / 16PITDC02	<b>DSE-1:</b> Application Development using J2EE / Application Development using ASP.NET	5	3	30	70	100	5
16PITCC03	<b>Core Practical 1:</b> Advanced Web Development in LARAVEL Practical and No SQL Database MongoDB Practical	4	3	40	60	100	2
16PITDC03 / 16PITDC04	<b>DSE Practical 1:</b> Application Development using J2EE Practical / Application Development using ASP.NET Practical	4	3	40	60	100	2
16PITCC04	Project	6	3	60	40	100	4
		<b>27</b>				<b>600</b>	<b>21</b>
<b>Part - III</b>							
16PVE01	Value Education	1	-	Remarks			1
		<b>28</b>					<b>22</b>

Semester - II							
Course Code	Course	Hrs. of Instruction / week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
<b>Part - I</b>							
16PITCC05	<b>Core 3:</b> Application Development using Advanced Android	4	3	30	70	100	4
16PITCC06	<b>Core 4:</b> Introduction to Big Data & Hadoop	4	3	30	70	100	4
16PITCC07	<b>Core 5 :</b> Cloud Computing	4	3	30	70	100	4
16PITDC05 / 16PITDC06	<b>DSE 2:</b> Web Searching Technologies & Search Engine Optimization / Wireless Communication & Mobile Programming	4	3	30	70	100	4
16PITCC08	<b>Core Practical 2:</b> Application Development using Advanced Android Practical	4	3	40	60	100	2
16PITCC09	<b>Core Practical 3:</b> Introduction to Big Data & Hadoop Practical & Cloud Computing Practical	4	3	40	60	100	2
16PITCC10	Project	6	3	60	40	100	4
		<b>30</b>				<b>700</b>	<b>24</b>

Semester - III							
Course Code	Course	Hrs. of Instruction / week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
<b>Part - I</b>							
16PITCC11	<b>Core 6:</b> Web Application Development Using DJANGO	5	3	30	70	100	5
16PITCC12	<b>Core 7:</b> Programming With R for Data Science	5	3	30	70	100	5
16PITDC07 / 16PITDC08	<b>DSE 3:</b> Hybrid Mobile Applications Development using Web Technologies / Networking and Server Administration	5	3	30	70	100	5
16PITCC13	<b>Core Practical 2:</b> Web Application Development using DJANGO Practical	4	3	40	60	100	2
16PITCC14	<b>Core Practical 3:</b> Programming With R for Data Science Practical	4	3	40	60	100	2
16PITDC09 / 16PITDC10	<b>DSE Practical 2:</b> Hybrid Mobile Applications Development using Web Technologies Practical / Networking and Server Administration Practical	4	3	40	60	100	2
16PITCC15	Project	6	3	60	40	100	4
		<b>33</b>				<b>700</b>	<b>25</b>
<b>Part - II</b>							
16PITCE01	Business Etiquettes & Interview Techniques	1	-	100	-	100	1
		<b>33</b>				<b>800</b>	<b>26</b>

Semester - IV							
Course Code	Course	Hrs. of Instruction / week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
<b>Part - I</b>							
16PITCC16	Industrial Project	-	03	-	300	300	24
						<b>300</b>	<b>24</b>
<b>Total Marks : 2400</b>							

### TOTAL MARKS AND CREDIT DISTRIBUTION

S.NO	PART	Total Marks	Total Credits
1.	<b>PART I:</b> Core, Discipline Specific Elective Courses	2300	94
2.	<b>PART II :</b> Competency Enhancement Courses	100	1
3.	<b>PART III:</b> Value Education	Remarks	1
<b>TOTAL</b>		<b>2400</b>	<b>96</b>

#### • PART – I : CORE, DSE

##### CORE COURSES [Theory]

S. No	Semester	Course code	Course
1.	I	16PITCC01	Advanced Web Development in LARAVEL
2.		16PITCC02	No SQL Database MongoDB
3.	II	16PITCC05	Application Development using Advanced Android
4.		16PITCC06	Introduction to Big Data & Hadoop
5.		16PITCC07	Cloud Computing
6.	III	16PITCC11	Web Application Development Using DJANGO
7.		16PITCC12	Programming With R for Data Science

##### CORE COURSES [Practical]

S. No	Semester	Course code	Course
1.	I	16PITCC03	Advanced Web Development in LARAVEL and No SQL Database MongoDB
2.	II	16PITCC08	Application Development using Advanced Android
3.		16PITCC09	Introduction to Big Data & Hadoop & Cloud Computing

4.	III	16PITCC13	Web Application Development Using DJANGO
5.		16PITCC14	Programming With R for Data Science

• **OTHER CORE COURSES**

S. No.	Semester	Course Code	Course
1.	I	16PITCC04	Project
2.	II	16PITCC10	Project
3.	III	16PITCC15	Project
4.	IV	16PITCC16	Industrial Project

• **DSE CORE COURSES [Theory & Practical]**

Students are required to opt for any one of the courses offered in 1<sup>st</sup> to 3<sup>rd</sup> semesters respectively.

S. No	Semester	Theory		Practical	
		Course code	Course	Course code	Course
1.	I	16PITDC01/	Application Development using J2EE /	16PITDC03/	Application Development using J2EE /
		16PITDC02	Application Development using ASP.NET	16PITDC04	Application Development using ASP.NET
2.	II	16PITDC05/	Web Searching Technologies & Search Engine Optimization /	-	-
		16PITDC06	Wireless Communication & Mobile Programming	-	-
3.	III	16PITDC07	Hybrid Mobile Applications Development using Web Technologies	16PITDC09	Hybrid Mobile Applications Development using Web Technologies
		16PITDC08	Networking and Server Administration	16PITDC10	Networking and Server Administration

• **PART II : COMPETENCY ENHANCEMENT COURSES**

S. No.	Semester	Course Code	Course
1.	III	16PITCE01	Business Etiquettes & Interview Techniques

• **Part –III VALUE EDUCATION**

S. No.	Semester	Course Code	Course
2.	I	16PVE01	Value Education