PONDICHERRY UNIVERSITY
(A CENTRAL UNIVERSITY)

Kalapet, Puducherry

B.Sc. Information Technology
(Choice Based Credit System)

Regulations & Syllabus

2019-20 onwards
Pondicherry University
Bachelor of Information Technology (B.Sc. IT)
REGULATIONS
(Effective from the Academic year 2019-2020)

1. Aim of the Course
The B.Sc. (Information Technology) course aims to impart the students with fundamental and hands-on knowledge of computers, information technology and communication and information technology management.

2. Eligibility of Admission
Candidates for admission to B.Sc. (IT) shall be required to have passed 10+2 system of Examination or equivalent with Mathematics / Business Mathematics / Computer Science/ Computer Applications as one of the subjects of study.

3. Lateral Entry Admission
Candidates who have passed Diploma in Computer Science / Information Technology/ Computer Technology / Computer Application in I Class (10+3 years of study) are eligible to apply for the lateral entry to the 2nd year of the course subject to availability of seats, but limited to 10% of the sanctioned intake.

4. Duration of the Course
The course shall be of three years’ duration spread over six consecutive semesters. The maximum duration to acquire prescribed number of credits in order to complete the Programme of Study shall be twelve consecutive semesters (six years).

5. Medium
The medium of instruction shall be English.
6. Course Structure

<table>
<thead>
<tr>
<th>Category</th>
<th>Course Name</th>
<th>Number Of Papers</th>
<th>Credits Per Paper</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL</td>
<td>Modern Indian Languages</td>
<td>2</td>
<td>3</td>
<td>6</td>
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<tr>
<td>ENG</td>
<td>English</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>AECC</td>
<td>Ability Enhancement Compulsory</td>
<td>2</td>
<td>2</td>
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<td></td>
<td>Course</td>
<td></td>
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</tr>
<tr>
<td>SEC</td>
<td>Skill Enhancement Course</td>
<td>4</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>GE</td>
<td>Generic Elective Course</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>DSC</td>
<td>Discipline Specific Core Course</td>
<td>Theory- 12</td>
<td>Theory- 3</td>
<td>12x3=36</td>
</tr>
<tr>
<td></td>
<td>Practical – 9 Project -1</td>
<td>Practical – 2</td>
<td>9 x 2 = 18</td>
<td></td>
</tr>
<tr>
<td>DSE</td>
<td>Discipline Specific Elective Course</td>
<td>6</td>
<td>4</td>
<td>6 x 4 =24</td>
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<tr>
<td>OE</td>
<td>Open Elective Course</td>
<td>2</td>
<td>3</td>
<td>2 x 3 =6</td>
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<tr>
<td></td>
<td>Total</td>
<td></td>
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</table>

**MIL, ENG, AECC**

The crediting of MIL, ENG and AECC courses is as per Pondicherry University UG CBCS regulations.

**DSC and DSE**

At least 60% (72 credits) of the total minimum credit requirement must be earned by the student from DSC and DSE courses as follows in order to obtain the degree - 60 credits from Discipline Specific Core and 12 credits from Discipline Specific Elective courses.
**SEC**

Out of the 4 Skill Enhancement Courses, two courses viz. – i) Online Course / In-Plant Training (2 weeks) / One month Internship / mini project is mandatory. The Online Course to be studied, the organization to be chosen for In-Plant Training or One month internship is to be validated or approved by a panel of members comprising of the Department Faculty, before a student pursues the same.

For the remaining 2 SEC courses, any of the 2 credit Skill Enhancement Courses specified in the curriculum (B.Sc. IT) could be credited or substituted with Skill Enhancement Courses in the curriculum of other UG computer science courses or Skill Enhancement Courses of other UG Non-Computer Science Disciplines of study that constitute to skill development or an assortment of these without any overlap of courses.

**GE**

Any 2 of the 3 credit Generic Elective Courses specified in the curriculum (BCA) could be credited to constitute the 6 credits or substituted with Generic Elective courses in the curriculum of other UG Computer Science Disciplines of study or UG Courses of Non-Computer Science Disciplines of study that add proficiency to the students - with the advice of the Faculty Advisor, or an assortment of these without any overlap of courses.

**DSE**

The six 4 credit papers to be credited under DSE can be credited from Discipline Specific Elective specialization stream courses as follows:

a. Three of the 4 credit courses can be credited from one specialization streams, thus completing 2 specialization streams. (or)

b. All six 4 credit papers can be credited from any specialization stream across the different specialization stream courses specified in the curriculum without any overlap of courses credited in above. (or)

c. Another specialization stream courses or across the different specialization stream courses in the curriculum of other UG Computer Science Disciplines of study without any overlap of courses credited in above.

**OE**

Any 2 of the 3 credit Open Elective Courses specified in the curriculum (B.Sc. IT) could be credited to constitute the 6 credits or substituted with Open elective courses in the curriculum
of other UG Computer Science disciplines of study or substituted with UG Courses of Non-
Computer Science Disciplines of study that add proficiency to the students - with the advice
of the Faculty Advisor or an assortment of these without any overlap of courses.

7. **Faculty to Students Ratio**

The Faculty to Student Ratio in all the practical / laboratory classes shall be maintained at
1:25.

8. **Pattern of Examination**

I. The End-Semester examination and internal assessments for MIL, ENG, AECC, DSC,
   GE and OE courses are as per Pondicherry University UG CBCS regulations.

II. All SEC courses (except Online Course / In-Plant Training (2 weeks) / One month
    Internship) to be treated as a practical / laboratory course and the End-Semester
    examination to be conducted as per Pondicherry University UG CBCS regulations.

III. The internal assessments for all practical / laboratory courses (for DSC, SEC courses)
     shall be as follows – 15 marks from two internal practical / laboratory assessment
     tests and 5 marks based on practical / laboratory course based mini application
     development.

IV. The internal assessment for DSE courses shall be conducted as follows - 12 marks
    from two internal assessment tests and 8 marks based only on two internal practical /
    laboratory assessment tests.
V. The marks for attendance (5 marks) applies to all courses and the awarding of attendance marks is as per Pondicherry University UG CBCS regulations.

VI. The Project work is to be evaluated as follows:

i. The internal assessment (25 marks) is awarded as follows:
   a. 10 marks is awarded based on two internal project reviews conducted in periodic intervals by a panel comprising of members of the Department during the tenure of the project.
   b. The student’s project guide awards 10 marks for the project work and 5 marks for attendance (attendance marks as specified in the Pondicherry University UG CBCS regulations).

ii. The End Semester Examination assessment (75 marks) is evaluated under two aspects viz –
   i) Project Work – (50 marks) ii) Project Report and Viva-Voce (25 marks)

**Passing Minimum**

Passing Eligibility and classification for the award of the Degree is as per Pondicherry University UG CBCS regulations.

**Lateral Entry**

The Lateral Entry students have to complete 81 credits from the DSC, DSE, GE, SE, OE courses as per curriculum (IIIrd to VIth semesters). In addition, they should complete the two AECC courses (4 credits) for the award of the degree. One MIL (3 credits) and one ENG (3 credit) courses also need to be completed, if it is not studied in the last three years of the course eligible for lateral entry admission.

Other aspects of CBCS not covered in this document by default conforms to the Pondicherry University UG CBCS regulations.

**Programme Outcomes**

PO1: The students with basic knowledge of computer science or mathematics are admitted to the first year of the course. They get trained in programming with the basics of C language and gain knowledge of digital systems through a course on Digital Electronics in the I semester.

PO2: Python Programming and Data Structures and Algorithms form the skill sets in the II
semester. In addition the students understand about administration and how to preserve nature through courses on Public Administration and Environmental Studies in the I Year.

PO3: In the course on JAVA programming the students learn about JDBC and swing concepts. Software Engineering course provides an in depth knowledge of software processes and software metrics. Networks provide a short description of different layers of communication and Information theory and coding provides knowledge of application of probability, entropy and coding techniques. Students learn the basic techniques of effective communication through a course on Soft Skills.

PO4: Electives for specialization starts from IV semester in different fields of computer science such as Data science, Information and Network Security, Wireless network communications, Multimedia applications and IT Project Management. DBMS and Graphics form the core courses. A course on Linux and shell programming offers the student with much needed knowledge in open source programming.

PO5: Electives continue and specialization courses offered on PHP/Android Programming, Artificial Intelligence and options for online courses, Internship/Mini project along with main course on Operating Systems form the core of the V semester which prepares the student with updated knowledge in latest techniques.

PO6: A course on web technology and electives are provided in the last semester. The student is ready to take any assignment in the field of Information Technology by doing a project on his own in the final semester with the knowledge gained by learning all the courses thoroughly.
### B. Sc – INFORMATION TECHNOLOGY [CBCS PATTERN] COURSE STRUCTURE

From the Academic Year 2019 - 2020

<table>
<thead>
<tr>
<th>Title</th>
<th>No. of papers</th>
<th>No. of credits</th>
<th>Total Credits</th>
<th>Theory / practical</th>
</tr>
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<tbody>
<tr>
<td>MIL</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>Theory</td>
</tr>
<tr>
<td>English</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>Theory</td>
</tr>
<tr>
<td><strong>Discipline Specific Core (DSC) - Core papers – Theory</strong></td>
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<td>3</td>
<td>36</td>
<td>Theory</td>
</tr>
<tr>
<td><strong>DSC – Core papers (LAB)</strong></td>
<td>9</td>
<td>2</td>
<td>18</td>
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</tr>
<tr>
<td><strong>DSC - Project work</strong></td>
<td>1</td>
<td>6</td>
<td>6</td>
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</tr>
<tr>
<td><strong>Discipline Specific Elective (DSE) – Specialization Papers</strong></td>
<td>6</td>
<td>3+1</td>
<td>24</td>
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<tr>
<td><strong>Generic Elective (GE) - Mathematics</strong></td>
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<td>3</td>
<td>6</td>
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<tr>
<td><strong>Open Elective (OE)</strong></td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>Theory</td>
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<tr>
<td><strong>Ability Enhancement Compulsory Core (AECC)</strong> (Environmental Studies &amp; Public Administration)</td>
<td>2</td>
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<td>Theory</td>
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<tr>
<td><strong>Skill Enhancement Core (SEC)</strong></td>
<td>4</td>
<td>2</td>
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<td>Practical</td>
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| Total Credits | **120** |
## PROPOSED STRUCTURE OF THE COURSE UNDER CBCS 2019-2020

### FIRST SEMESTER

<table>
<thead>
<tr>
<th>COURSE</th>
<th>SUBJECT CODE</th>
<th>Paper</th>
<th>CREDITS</th>
<th>HOURS</th>
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<tr>
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<td></td>
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<td>Prac.</td>
</tr>
<tr>
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<tr>
<td>ENG</td>
<td>ENGL112</td>
<td>English-I</td>
<td>3</td>
<td>-</td>
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<tr>
<td>DSC-1</td>
<td>CSIT113</td>
<td>Introduction to Problem Solving using C</td>
<td>3</td>
<td>-</td>
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<tr>
<td>DSC-2</td>
<td>CSIT114</td>
<td>Digital Electronics</td>
<td>3</td>
<td>-</td>
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<tr>
<td>AECC-1</td>
<td>PADM115</td>
<td>Public Administration</td>
<td>2</td>
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<tr>
<td>DSC-1(lab)</td>
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<td>Programming in C lab</td>
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<td>DSC-2 (lab)</td>
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### SECOND SEMESTER

<table>
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<tr>
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<th>CREDITS</th>
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<td>Prac.</td>
</tr>
<tr>
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<td>ENGL122</td>
<td>English-II</td>
<td>3</td>
<td>-</td>
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<td>DSC - 3</td>
<td>CSIT123</td>
<td>PYTHON Programming</td>
<td>3</td>
<td>-</td>
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<tr>
<td>DSC - 4</td>
<td>CSIT124</td>
<td>Data Structures and Algorithms</td>
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<tr>
<td>GE – 1 (1 out of 2)</td>
<td>CSIT125</td>
<td>Discrete Mathematics</td>
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<tr>
<td></td>
<td>CSIT126</td>
<td>Applied Statistics</td>
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<td>AECC-2</td>
<td>ENVS127</td>
<td>EVS</td>
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<td>DSC-3 (lab)</td>
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<td>PYTHON lab</td>
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<tr>
<td>DSC-4 (lab)</td>
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<td>Data Structures and Algorithms Lab</td>
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<td><strong>TOTAL</strong></td>
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### THIRD SEMESTER

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<tr>
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<td>Prac.</td>
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<tr>
<td>DSC – 5</td>
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<td>Object Oriented Programming Using JAVA</td>
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<tr>
<td>DSC – 6</td>
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<td>DSC – 7</td>
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<td>Computer Networks</td>
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<td>DSC – 8</td>
<td>CSIT234</td>
<td>Software Engineering</td>
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<td>GE-2 (1 out of 2)</td>
<td>CSIT235</td>
<td>Operation Research</td>
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<td>CSIT236</td>
<td>Numerical Methods</td>
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<tr>
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<td>CSIT237</td>
<td>JAVA lab</td>
<td>-</td>
<td>2*</td>
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<td>DSC-8(lab)</td>
<td>CSIT238</td>
<td>Computer networks lab</td>
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<td>Theory</td>
<td>Prac.</td>
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<tr>
<td>DSC – 9</td>
<td>CSIT241</td>
<td>Database Management System</td>
<td>3</td>
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<tr>
<td>DSC – 10</td>
<td>CSIT242</td>
<td>Information theory and Coding</td>
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<tr>
<td>Select DSE – 1 DSE – 2 Out of 5</td>
<td>CSIT243</td>
<td>Object Oriented System Design</td>
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<td></td>
<td>CSIT244</td>
<td>Client/Server Computing</td>
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<td>CSIT245</td>
<td>Data Communication Technologies</td>
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<td></td>
<td>CSIT246</td>
<td>Computer Graphics</td>
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<td>CSIT247</td>
<td>IT Infrastructure Management</td>
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<tr>
<td>DSC-9 (lab)</td>
<td>CSIT248</td>
<td>DBMS lab</td>
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<td>2*</td>
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<tr>
<td>SEC-II</td>
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**FIFTH SEMESTER**

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<th>Paper</th>
<th>CREDITS</th>
<th>HOURS</th>
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<tr>
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<td>Theory</td>
<td>Prac.</td>
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<tr>
<td>DSC – 11</td>
<td>CSIT351</td>
<td>Web Technology</td>
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<td>Select DSE – 3</td>
<td>CSIT352</td>
<td>Software Testing</td>
<td>3</td>
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<td>and DSE – 4</td>
<td>CSIT353</td>
<td>Distributed Computing</td>
<td>3</td>
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<td>Introduction to Wireless</td>
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<td></td>
<td>CSIT355</td>
<td>Multimedia &amp; its Applications</td>
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<td></td>
<td>CSIT356</td>
<td>IT Project Management</td>
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<td>DSC-11 (lab)</td>
<td>CSIT357</td>
<td>Web Technology lab</td>
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<td>SEC-IV Compulsory</td>
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<td></td>
<td>CSIT807</td>
<td>/ Internship (2weeks) /</td>
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<td></td>
<td>CSIT808</td>
<td>In-Plant Training (1month)</td>
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<td>CSIT809</td>
<td>* Any one from the above list</td>
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**SIXTH SEMESTER**

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<th>SUBJECT CODE</th>
<th>Paper</th>
<th>CREDITS</th>
<th>HOURS</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Theory</td>
<td>Prac.</td>
</tr>
<tr>
<td>DSC – 12</td>
<td>CSIT361</td>
<td>Visual Programming using C#</td>
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<tr>
<td>DSC – 13</td>
<td>CSIT362</td>
<td>PROJECT</td>
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<td>6*</td>
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<td>select DSE – 5</td>
<td>CSIT363</td>
<td>Software Quality Management</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>and DSE – 6</td>
<td>CSIT364</td>
<td>Cloud Computing</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Out of 5</td>
<td>CSIT365</td>
<td>Internet of Things</td>
<td>3</td>
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<tr>
<td></td>
<td>CSIT366</td>
<td>Audio &amp; Visual Technology</td>
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<td>1</td>
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<td>CSIT367</td>
<td>Information Security Management</td>
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<tr>
<td>DSC-12 (lab)</td>
<td>CSIT368</td>
<td>Visual Programming Lab</td>
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<td><strong>TOTAL</strong></td>
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* University Practical Exam/ Viva Should be conducted.
## DISCIPLINE SPECIFIC CORES (DSC)

<table>
<thead>
<tr>
<th></th>
<th>Course Title</th>
<th>Semester</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Problem Solving using C</td>
<td>I</td>
</tr>
<tr>
<td>2</td>
<td>Digital Electronics</td>
<td>I</td>
</tr>
<tr>
<td>3</td>
<td>Python Programming</td>
<td>II</td>
</tr>
<tr>
<td>4</td>
<td>Data Structures and Algorithms</td>
<td>II</td>
</tr>
<tr>
<td>5</td>
<td>Object Oriented Programming using JAVA</td>
<td>III</td>
</tr>
<tr>
<td>6</td>
<td>Operating Systems</td>
<td>III</td>
</tr>
<tr>
<td>7</td>
<td>Computer Networks</td>
<td>III</td>
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<tr>
<td>8</td>
<td>Software Engineering</td>
<td>III</td>
</tr>
<tr>
<td>9</td>
<td>Database Management Systems</td>
<td>IV</td>
</tr>
<tr>
<td>10</td>
<td>Information Coding &amp; Theory</td>
<td>IV</td>
</tr>
<tr>
<td>11</td>
<td>Web Technology</td>
<td>V</td>
</tr>
<tr>
<td>12</td>
<td>Visual Programming with C#</td>
<td>VI</td>
</tr>
<tr>
<td>13</td>
<td>PROJECT</td>
<td>VI</td>
</tr>
</tbody>
</table>

## DISCIPLINE SPECIFIC ELECTIVES (DSE)-POOL

### (Specialization Stream - I)

- **Software Engineering**
  - 1 Object Oriented System Design
  - 2 Software Testing
  - 3 Software Quality Management

### (Specialization Stream - II)

- **Advanced Computing**
  - 1 Client/Server Computing
  - 2 Distributed Computing
  - 3 Cloud Computing
### OPEN ELECTIVE LIST

<table>
<thead>
<tr>
<th></th>
<th>Course Title</th>
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<tbody>
<tr>
<td>1</td>
<td>Business Communication</td>
<td>CSIT701</td>
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<tr>
<td>2</td>
<td>IT Enabled Services</td>
<td>CSIT702</td>
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<td>3</td>
<td>Total Quality Management</td>
<td>CSIT703</td>
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<tr>
<td>4</td>
<td>Artificial Intelligence</td>
<td>CSIT704</td>
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<tr>
<td>5</td>
<td>Introduction to E-Business</td>
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<td>6</td>
<td>Fundamentals of Accountancy</td>
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<tr>
<td>7</td>
<td>Principles of Management</td>
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## SKILL ENHANCEMENT COURSES-LIST

<table>
<thead>
<tr>
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<th>Course Description</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Soft Skills</strong></td>
<td>CSIT801</td>
</tr>
<tr>
<td>2</td>
<td>Office Automation</td>
<td>CSIT802</td>
</tr>
<tr>
<td>3</td>
<td>Multimedia Tools</td>
<td>CSIT803</td>
</tr>
<tr>
<td>4</td>
<td>Programming with PHP</td>
<td>CSIT804</td>
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<tr>
<td>5</td>
<td>Mobile Application Development</td>
<td>CSIT805</td>
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<tr>
<td>6</td>
<td><strong>Online Course / Mini project – Viva (SEC-IV) / Internship (2weeks) / In-Plant Training (2 weeks)</strong></td>
<td>CSIT806 CSIT807 CSIT808 CSIT809</td>
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### GENERIC ELECTIVES

<table>
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<tbody>
<tr>
<td>1</td>
<td>Discrete Mathematics</td>
<td>CSIT125</td>
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<tr>
<td>2</td>
<td>Applied Statistics</td>
<td>CSIT126</td>
</tr>
<tr>
<td>3</td>
<td>Operation Research</td>
<td>CSIT235</td>
</tr>
<tr>
<td>4</td>
<td>Numerical Methods</td>
<td>CSIT236</td>
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</table>

### COURSES OFFERED TO NON-COMPUTER SCIENCE STUDENTS

<table>
<thead>
<tr>
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<th>Course Description</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Basics of Computers and Office Automation</td>
<td>CSIT171</td>
</tr>
<tr>
<td>2</td>
<td>Fundamentals of Information Technology</td>
<td>CSIT172</td>
</tr>
<tr>
<td>3</td>
<td>Fundamentals of ‘C’ Language</td>
<td>CSIT173</td>
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<tr>
<td>4</td>
<td>Web Designing</td>
<td>CSIT174</td>
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</tbody>
</table>

**NOTE:**

** -- compulsory course
INTRODUCTION TO PROBLEM SOLVING USING C

Prerequisite: Basic knowledge of Mathematics and Computers.

Objectives:
- To learn the concepts of “C” Programming
- To develop software programs using “C” language

Outcomes:
- In-depth understanding of various concepts of C language.
- Skill to write program code in C to solve real world problems and to debug a program

MODULE – I

MODULE – II
Character Set, Structure of a ‘C’ Program, Data Types, Operations, Expressions, Assignment Statement, Conditional Statements, Looping Statements, Nested Looping Statements, Multi Branching Statement (Switch), Break and Continue, Differences between Break and Continue, Unconditional Branching (Go to Statement)

MODULE – III

MODULE – IV
Arrays: Declaration and Initialization of one and two dimensional arrays – Multidimensional array – dynamic arrays - Character arrays and strings. Structure: Defining and processing. Structure initialization Operations on individual members Arrays of structures, Arrays within Structures, Structures and Functions- Passing to a function, Union.

MODULE – V
Pointers: Declarations and initialization of pointer variables, Accessing pointer variables, Passing to a function. Operations on pointers, pointer and arrays, Array of pointers, Pointer to Functions. Data Files: Open, close, create, process unformatted data files.

TEXT BOOK
LIST OF EXERCISES

1. Simple C programs
2. Program to illustrate control statements
3. Program to illustrate FOR loop
4. Program to illustrate SWITCH & WHILE statements
5. Program to illustrate functions
6. Program to illustrate user-defined functions
7. Program to illustrate arrays
8. Program to illustrate usage of pointers
9. Program to illustrate character handling libraries.
10. Program to illustrate string manipulation
11. Program to illustrate creation of files.
12. Program to illustrate creation, reading & accessing files
DIGITAL ELECTRONICS

Prerequisite: Basic knowledge about computers

Objectives:

- To learn the fundamentals of digital logic.
- To learn combinational and sequential logic.

Outcomes:

- Skill to use the methods of systematic reduction of Boolean expression using K-Map. Ability to interpret logic gates and its operations.
- Familiarization with combinational and sequential logic circuits in electronics.

MODULE -I

MODULE -II
Boolean Algebra – Basic Theorems and properties – Boolean Functions – Canonical and Standard Forms – Karnaugh Map Simplification – Two, Three, Four and Five Variables – NAND and NOR Implementation – Don’t Care Conditions.

MODULE -III

MODULE -IV

MODULE –V
Register transfer logic Inter register transfer Arithmetic, Logic and shift micro operations Conditional control statements fixed point binary data overflow Arithmetic shifts Instruction codes Design of simple computer.

Text Books:
DIGITAL LAB

1. Study of Logic Gates
2. Design of Adder and Subtractor
3. Design and Implementation of Code Convertors
4. Design of 4-Bit Adder and Subtractor
5. Design and Implementation of Magnitude Comparator
6. 16 Bit Odd/Even Parity Checker and Generator
7. Design and Implementation of Multiplexer and Demultiplexer
8. Design and Implementation of Encoder and Decoder
9. Simulation of Logic Gates
10. Simulation of Adder and Subtractor
Paper Code: CSIT123

PYTHON PROGRAMMING

Prerequisite: Knowledge of any programming language
Objectives:
- To learn Basic Python Programming Concept.
- To develop simple Python programs and code reusing with functions
Outcomes:
- Skill to write codes in Python to solve mathematical or real world problems.
- Ability to isolate and fix common errors in Python programs.

MODULE 1

MODULE 2
Control Structure - Selection Control - If Statement - Indentation in Python - Multi-Way Selection - Iterative Control - While Statement - Input Error Checking - Infinite loops - Definite vs. Indefinite Loops

MODULE 3
List Structures - Common List Operations - List Traversal - Lists (Sequences) in Python - Python List Type - Tuples - Sequences - Nested Lists - Iterating Over Lists (Sequences) in Python - For Loops - The Built-in range Function - Iterating Over List Elements vs. List Index Values - While Loops and Lists (Sequences) - Dictionaries and sets

MODULE 4
Defining Functions - Calling Value-Returning Functions - Calling Non-Value-Returning Functions - Parameter Passing - Keyword Arguments in Python - Default Arguments in Python - Variable Scope - Recursive functions - Exception Handling - The Propagation of Raised Exceptions - Catching and Handling Exceptions - Exception Handling and User Input

MODULE 5
String Processing - String Traversal - String-Applicable Sequence Operations - String Methods - Using Text Files - Opening Text Files - Reading Text Files - Writing Text Files

TEXT BOOK

REFERENCE BOOKS

LIST OF EXERCISES

1. Create simple programs using arithmetic Boolean and logical operators
2. Develop program using control flow tools like IF.
3. Develop program using LOOP control structures
4. Data structures
   - use list as stack
   - use list as queue
   - tuple, sequence
5. Write a program to read and write files, create and delete directories
6. Write a program with exception handling
7. Write a program using string handling and regular expressions
DATA STRUCTURES AND ALGORITHMS

Pre-requisite: Knowledge of any programming language

Objectives:
- To acquaint students with data structures used for programming and manipulation of data.
- To make students to understand the basics of algorithms.

Outcomes:
- Skill to analyze data and to determine appropriate data structure. Knowledge of various data structures and their implementations.
- Ability to implement algorithms to perform various operations on data structures.

MODULE-I

MODULE-II

MODULE-III
Non Linear Data Structures: Trees: Basic terminology, Binary tree, Representation, Traversal, Binary search tree.

MODULE-IV
Graph: Definition and Terminology – Representation, Traversal – Depth First and Breadth First traversal techniques.

MODULE-V
Introduction to Algorithms: Algorithm Design Techniques – Iterative techniques: Bubble Sort, Insertion Sort, Divide and Conquer: Merge Sort, Quick Sort

TEXT BOOKS
LIST OF LAB EXERCISES

1. Linear Search
2. Binary Search
3. Implementation of Stack (Array Representation)
4. Implementation of Evaluation of Expression
5. Implementation of Queue (Array Representation)
6. Implementation of Singly Linked List
7. Implementation of Tree traversal
8. Implementation of Graph traversal
9. Implementation of Bubble sort
10. Implementation of Insertion sort
11. Implementation of Quick sort
12. Implementation of Merge sort
OBJECT ORIENTED PROGRAMMING USING JAVA

Prerequisite: Basic Knowledge of programming.

Objectives:
- To learn the basic concepts of OOP
- To develop Java programs, Swing and Applets

Outcomes:
- Skill to write Java application programs using OOP principles and proper program structuring.
- Ability to create packages and interfaces. Ability to implement error handling techniques using exception handling.

MODULE - I
Concepts of OOP: Introduction OOP, Procedural Vs Object Oriented Programming, Principles of OOP, Benefits and applications of OOPS

MODULE – II
Introduction to java applications – Introduction to classes, objects, methods & Strings - Control statements – Arrays - constructor – function overloading & overriding - Inheritance - Polymorphism – Interface – package - exception handling

MODULE – III
GUI components –Overview of Swing components –Displaying Text and Images in a Window - Text Fields , Introduction to Event Handling- GUI Event Types and Listener Interfaces - layout manager, Swings Vs AWT

MODULE – IV
Files, Streams & I/O – Introduction – Files & Streams – Sequential Access Text Files

MODULE – V
Introduction to Multi-Threading , Thread life cycle, Thread priorities. Introduction – Applets & Java Web Start – applet life-cycle, HTML tags, a simple applet program

Text Books:
LIST OF EXERCISES

1. Program to illustrate class and objects.
2. Program to illustrate control structures (if-then, while, switch).
3. Program to illustrate arrays (creation, initialization and processing).
4. Program to illustrate Constructor and its overloading.
5. Program to illustrate Inheritance and Packages.
6. Program to illustrate Interface and static methods.
7. Program to illustrate Exception Handling Technique with IO streams.
8. Program to illustrate File handling technique.
9. Program to illustrate Swing Application.
10. Program to illustrate applets using HTML.
OPERATING SYSTEMS

Pre-requisite: Knowledge of computers & computer organization

Objectives:
- To learn OS management functions.
- To learn Memory management, Processor management, Device Management and I/O Management

Outcomes:
- Understand how memory is utilized. Understand CPU scheduling algorithms to manage tasks.
- Knowledge of methods to prevention and recover from a system deadlock. Manages I/O devices.

MODULE –I

MODULE –II

MODULE –III

MODULE –IV

MODULE –V

TEXT BOOK
1. Stuart E.Madnick and John Donovan “Operating System”,TMH Reprint 2008. (Chapter 1,3,4,5,6)
Computer Networks

Pre-requisite: Basic Knowledge of Computers

Objectives:
- To educate the functions of various OSI layers

Outcomes:
- Knowledge of OSI Layers in Computer Network.
- Ability to identify transmission media, types and topologies of network. Familiarization with the techniques of error detection and congestion control

MODULE –I

MODULE –II

MODULE –III
Data Link Layer: data link Layer Design issues, Error Detection and correction, Simplex Stop-and-wait protocol, Sliding window protocols

MODULE –IV

MODULE –V
Transport Layer – Elements of Transport Protocols, Internet Transport protocols: UDP, TCP
Application Layer – Domain Name System – Electronic Mail

TEXT-BOOK
   (Chapters 1.1 – 1.5, 2.1 - 2.6, 3.1 - 3.4, 5.1 – 5.3, 6.1 -6.5, 7.1,7.2)

REFERENCES
2. Data and Computer communications Seventh edition William Stallings PHI
LIST OF EXERCISES:

Implementation using JAVA or PYTHON

1. Text Message Sending and Receiving
2. File Transmission
3. Basic Chat Applications
4. Simple Mailing Application
5. Client Server Applications
SOFTWARE ENGINEERING

Pre-requisite: Basic knowledge of programming

Objectives:

• To gain knowledge about software development life cycle models, software design, implementation, and testing of software.
• To gain overall knowledge of how software is developed

Outcomes:

• Understanding of various methods or models for developing a software product.
• Ability to analyze existing system to gather requirements for proposed system. Skill to design and code a software.

MODULE -I

MODULE -II

MODULE -III

MODULE -IV

MODULE -V
Software testing – strategic approach to software testing – terminologies – functional testing – structural testing – levels of testing – validation testing – the art of debugging – testing tools

TEXT BOOK

DATABASE MANAGEMENT SYSTEM

**Prerequisite:** Knowledge of data structures and file-handling

**Objectives:**
- To learn the fundamental concepts of Database management systems.
- To learn SQL commands to manage data and PL/SQL.

**Outcomes:**
- Understand data modeling and database development process. Construct and normalize conceptual data models.
- Implement a relational database into a database management system. Become proficient in using database query language.

**MODULE I**
Introduction to Database System - Objectives - Entities and Attributes – Data Models

**MODULE II**
Database Management Systems – Tree Structures – Plex Structures – Data Description Languages, Relational Databases – First, Second and Third Normal Form – Canonical Data structures - Varieties of data independences.

**MODULE III**

**MODULE IV**
PL/SQL: Approach and Advantages - PL/SQL Blocks - Variables - Manipulating Data – Triggers – Procedures, functions and packages - Exception handling

**MODULE V**

**TEXT BOOK**

**REFERENCES**
LIST OF EXERCISES

DBMS

For any TWO online application such as library information system, students; information system, employee information systems, payroll system, ticket reservation system etc., do the followings:

1. Create database and establish relationships between tables
2. Draw ER diagrams
3. Create view to extract details from two or more tables
4. Create stored procedures
5. Create functions
6. Create cursors & database triggers.
7. Create PL/SQLs.
INFORMATION THEORY AND CODING

Prerequisite: Knowledge of Probability

Objectives
- Students will learn about Information Theory, Entropy and Probability.
- To understand Source Coding, Channel Coding, Error Detection and Correction, Error Control, Coding and various types of codes

Outcomes
- Understand the Information Theory, Entropy and Probability.
- Get an idea about Source Coding, Channel Coding, Error Detection and Correction, Error Control, Coding and various types of codes

MODULE I:
Introduction to Probability, Sample space and events, The axioms of probability Elementary theorems –Conditional Probability and Independence, Baye’s theorem. Random variables, discrete probability distribution, discrete functions for random and discrete random variables, continuous random variables.

MODULE II

MODULE III
Discrete memory less channel, channel capacity BSC and other channels.

MODULE IV
Types of codes, error and error control strategies, Linear block codes, syndrome and error detection, Minimum distance, Error detecting and correcting capabilities of a block code, Syndrome decoding, Hamming codes.

MODULE V
Cyclic codes, Generator and parity – check matrices, encoding, syndrome computation and error detection and decoding.

Text Books:

REFERENCE BOOKS
WEB TECHNOLOGY

Pre-requisite: Knowledge of Operating system, computer network, DBMS, and Java language.

Objectives:
- To gain knowledge in HTML and DHTML
- To design interactive web pages using Style sheets, Java-script and ASP.

Outcomes:
- Understand the various steps in designing Creative and dynamic website.
- Ability to write HTML, JavaScript, CSS and ASP.

MODULE – I

MODULE – II

MODULE – III
Introduction to DHTML – Introduction to style sheets – Setting the default style sheet language – Inline style information – External Style sheets – Cascading Style sheets.

MODULE – IV
Introduction to Java script - script tag, interactive data, DOM, A simple document, Add a form, Add a text input element, Add a button element, properties, methods and event handlers. Scripts and HTML.

MODULE – V
Introduction to ASP – Database Management with ASP: Database access with ADO, working with ADO’s Connection object, Using Command objects, Working with ADO’s Recordset Object.

TEXT BOOKS
1. Robert W. Sebesta, “Programing the World Wide Web”, Addison Wesley, 2011 (Chapter 1 only)
2. Elisabeth Freeman and Eric Freeman, “Head First HTML with CSS & XHTML (Head First”), O’Reilly , 2005
WEB TECHNOLOGY LAB

LIST OF EXPERIMENTS

1. Usage of Simple HTML commands, Graphics and image formats and hyperlinks
2. Usage of Tables, Frames, Forms, Background Graphics and Color
3. Simple application using HTML
4. Simple application using DHTML and Cascading style sheet
5. Simple application using Java script
6. Simple application using ASP (Student’s choice)
VISUAL PROGRAMMING USING C#

PRE-REQUISITE: Knowledge of any object oriented programming language

Objectives:
- Understand the foundations of CLR execution.
- Familiarize the object oriented aspects of C#.
- Design and develop applications on .NET

Outcomes:
- Understand programming in C# and able to write code for real life problems.
- Ability to connect to a database and create small projects.

MODULE I

MODULE II
Overview of C#: Program structure, Literals, Variables, Constants, Data Types, Operators, Statements and Expressions, Branching, Looping and loop control statements, Arrays, Strings manipulation, Boxing and Unboxing, Preprocessors, Namespaces

MODULE III

MODULE IV:
Errors and exception handling, File IO, Multithreading, Windows Forms and various controls, menu creation, SDI and MDI applications, Common Dialog Boxes. Events and event handling.

MODULE V
Introduction to ADO.NET - ADO.NET Architecture - Connection Object - Command Object - Dataset - Data Reader Object - Data Adapter Object – Data Table – Datagridview and Data Binding. Connecting to a database, and OLE DB data source, Adding, updating, deleting and viewing records in database.

TEXT BOOKS:

REFERENCE BOOKS:
VISUAL PROGRAMMING LAB

LIST OF EXERCISES

1. Implement Classes and Objects, Inheritance & Polymorphism
2. Implement Interfaces, Operator Overloading, Delegates and Events
3. Implement Exception Handling & Multi-Threading
4. Create Console application & Window Applications.
5. Create programs using SDI &MDI
6. Create program using Database Controls
7. Develop any TWO case studies listed below:
   I. Inventory Control
   II. Retail Shop Management
   III. Employee Information System
   IV. Personal Assistant Program
   V. Students’ Information System
Objective
The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

Outcome
The course outcome is the ability of the student to apply Software Development Cycle to develop a software module. The student will be able to use the techniques, skills and modern software engineering tools necessary for software development. Develop a software product along with its complete documentation.

The project is of 2 hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding, and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The project proposal should include the following:

- Title
- Objectives
- Input and output
- Details of modules and process logic
- Limitations of the project
- Tools/platforms, Languages to be used
- Scope of future application

The project work should be either an individual one or a group of not more than three members and submit a project report at the end of the semester. The students shall defend their dissertation in front of experts during viva-voce examinations.
DISCIPLINE SPECIFIC ELECTIVE (DSE) PAPERS SPECIALIZATION STREAM -I
[SOFTWARE ENGINEERING]

Paper Code: CSIT243

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OBJECT ORIENTED SYSTEM DESIGN

Prerequisite: Knowledge of object oriented programming

Objectives:
- Understand software modeling and Architectural Concepts
- Understand and apply UML notations in designing software
- Gain knowledge about Static and Dynamic modeling

Outcomes:
- Ability to develop the design phase of software development using UML

MODULE 1

System development - object basics - development life cycle - methodologies - patterns - frameworks - unified approach - UML.

MODULE 2

Use - Case models - object analysis - object relations - attributes - methods, class and object responsibilities

MODULE 3

Design processes - design axioms- class design - object storage - object interoperability

MODULE 4

User interface design - view layer classes - micro - level processes - view layer interface

MODULE 5

Quality assurance tests - testing strategies - object orientation on testing - test cases - test plans - continuous testing - debugging principles - system usability - measuring user satisfaction - case studies.

Text books:
SOFTWARE TESTING

Prerequisite: Knowledge in Software Engineering.

Objectives:
- To understand the Concepts of Software Testing.
- Introducing about various Testing Tools.

Outcomes:
- Understand the problems of defects and need of Testing
- Acquire knowledge about various testing strategies that are used in the industries to test their products

MODULE – I

MODULE – II

MODULE- III

MODULE - IV

MODULE - V
Software Test Automation: Approaches to Automation: partial automation, full automation- Choosing the right tool - Challenges in software test automation.

Text Books

SOFTWARE QUALITY MANAGEMENT

Prerequisite: Knowledge of Software Engineering.

Objectives
- To learn how to apply quality assurance tools & techniques
- To learn about standards and certifications

Outcomes:
- Able to understand the importance of quality and standards
- Understand various models of dealing with software quality

MODULE - I

MODULE - II
Integrating Quality Activities in the Project Life Cycle – Reviews - Assuring the Quality of Software Maintenance components - Case Tools and their effect on Software Quality.

MODULE - III
Software Quality Infrastructure Components - Procedures and Work Instructions – Staff Training and Certification - Software Configuration Management - Documentation Control.

MODULE - IV
Software Quality Management Components - Project Progress Control - components of project progress control- Progress control of internal projects and external participants- Implementation of project progress control

MODULE - V
Software Quality Metrics - Objectives of quality measurement- Classification - Product metrics – Implementation – limitation; scope of quality management standards: ISO 9000 family, CMM and CMMI.

TEXT BOOK

REFERENCES
Prerequisite: Knowledge of computer networks & DBMS

Objectives:
- To learn about objective evaluations and details of Client/Server development tools, used in operating system and database management system
- To learn the basics of middleware architecture

Outcomes
On successful completion of the course students will be able to:
- Understand the objective evaluations and details of Client/Server development tools, used in operating system and database management system
- Get an idea about the basics of middleware architecture

MODULE – I
Introduction – defining client/server computing – Classification of client/server systems – clients/server – advantages & disadvantages –driving forces behind client/server computing

MODULE – II

MODULE – III

MODULE – IV

MODULE - V
System development – hardware & software requirements – communication interface technology – client/server technology & web services – what are web services – web services & client/server/browser – server technology – client/server technology & web applications

Text Book:
DISTRIBUTED COMPUTING

Prerequisite: Knowledge of Database and Networks.

Objective

• To make the students to understand the collaborative operations of collections of computer systems.

Outcomes

On successful completion of the course students will be able to:

• Understand the collaborative operations of collections of computer systems.

MODULE I


MODULE II


MODULE III


MODULE IV

Publish-subscribe systems - Message queues - Shared memory approaches -Distributed objects - Case study

MODULE V

Distributed File Systems –Introduction - File service architecture - Distributed mutual exclusion – Elections

Text Book

CLOUD COMPUTING

**Prerequisite:** Knowledge of Parallel and Distributing computing.

**Objectives**
- To impart the principles and paradigm of Cloud Computing
- To comprehend the Cloud Computing architecture and implementation

**Outcomes**
On successful completion of the course students will be able to:
- Understand the principles and paradigm of Cloud Computing
- Get an idea about the Cloud Computing architecture and implementation

**MODULE – I**

**MODULE – II**
Cloud Deployment Models – Introduction - Private Cloud - Public Cloud- Community Cloud - Hybrid Cloud- Cloud Service Models- Infrastructure as a Service- Platform as a Service- Software as a Service

**MODULE – III**
Virtualization - Approaches to Virtualization- Hypervisors

**MODULE – IV**
From Virtualization to Cloud Computing- Programming Models for Cloud Computing

**MODULE – V**
Software Development in Cloud Introduction - Different Perspectives on SaaS Development - New Challenges - Cloud-Aware Software Development Using PaaS Technology

**Text Book:**
DISCIPLINE SPECIFIC ELECTIVE (DSE) PAPERS
SPECIALIZATION STREAM -III [WIRELESS COMMUNICATION]

Paper Code: CSIT245
DATA COMMUNICATION TECHNOLOGIES

Pre-Requisite: Introduction to Networks

Objectives:
- To know about Data communication model, data transmission concepts, media, encoding techniques
- To understand the concepts Multiplexing and ATM

Outcomes:
On successful completion of the module students will be able to:
- Get an idea about Data Communication communication model, data transmission concepts, media, encoding techniques.
- Understand the concepts Multiplexing and ATM

MODULE –I

MODULE –II

MODULE –III

MODULE –IV

MODULE –V
Circuit Switching and Packet Switching - Switched Communications Networks - Circuit Switching Networks - Circuit Switching Concepts - Packet-Switching Principles.

TEXT BOOKS
INTRODUCTION TO WIRELESS COMMUNICATIONS

Pre-Requisite: Knowledge in Data Communication Technologies.

Objectives:
- To understand the concepts wireless communication Technology
- To understand the concepts of wireless, cordless, Wi-Fi, Bluetooth.

Outcomes:
- Acquire knowledge about the various wireless communication technologies.
- Understand the working of state of the art technologies such as mobile and WLANs

MODULE –I

MODULE –II

MODULE –III
Cordless Systems and Wireless Local Loop - Cordless Systems, Wireless Local Loop –WiMax and IEEE 802.16 broadband wireless access standards

MODULE –IV

MODULE –V

TEXT BOOKS
1. William Stallings, “Wireless Communications and Networks” 2nd edition, Pearson Prentice Hall, 2005. (Chapters 5, 6, 7, 9, 10,11,12, 13, 15.1)
INTERNET OF THINGS

Pre-Requisite: Knowledge in Wireless and mobile communication Technologies.

Objectives:
- To understand the concepts wireless communication Technology
- To understand the concepts of wireless, cordless, Wi-Fi, Bluetooth.

Outcomes:
- Acquire knowledge about the various wireless communication technologies.
- Understand the working of state of the art technologies such as mobile and WLANs

MODULE- I
M2M to IoT-The Vision-Introduction, From M2M to IoT, M2M towards IoT-the global context, Differing Characteristics: Comparison between M2M and IoT.

MODULE- II

MODULE- III
An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, Standards.

MODULE- IV
M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management: Introduction, Managing M2M Data, Considerations.

MODULE- V
Business processes in IoT : Introduction, IoT Integration with enterprise system, Distributed business process in IoT - Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management,

TEXT BOOK
DISCIPLINE SPECIFIC ELECTIVE (DSE)
PAPERS SPECIALIZATION STREAM - IV
[MULTIMEDIA]

Paper Code: CSIT246

COMPUTER GRAPHICS

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Prerequisite: Knowledge of computers and programming

Objectives:
- Gain knowledge about graphics hardware devices and software used.
- To Understand the two dimensional graphics and their transformations.

Outcomes:
On successful completion of the module students will be able to:
- Get an idea about graphics hardware devices and software used.
- Understand the two dimensional graphics and their transformations.

MODULE - I

MODULE - II

MODULE - III
2D Geometric Transformations: Basic Transformation – Matrix Representations – Composite Transformations – Window to View port Co-Ordinate Transformations - Clipping: Point Clipping – Line Clipping – Cohen-Sutherland Line Clipping - Polygon Clipping – Sutherland – Hodgman Polygon Clipping Curve Clipping – Text Clipping.

MODULE - IV
Graphical User Interfaces and Interactive Input Methods: The User Dialogue – Input of Graphical Data – Input Functions – Interactive Picture Construction Techniques.

MODULE - V

Text Book:
MULTIMEDIA & ITS APPLICATIONS

Prerequisite: Knowledge of Multimedia elements and about Multimedia tools.

Objectives:

- Formulate a working definition of interactive multimedia
- Getting basic idea about multimedia components and development process

Outcomes

On successful completion of the course students will be able to:

- Get an idea about the working of interactive multimedia
- Understand the multimedia components and development process

Module- I

Introduction: Multimedia elements multimedia applications System architecture evolving technologies defining objects data interface standards need for data compression multimedia databases

Module- II

Multimedia data compression: Types of compression color, gray scale and still video image compression video image compression audio compression . Data and file formats: RTF TIFF RIFF, MIDI, JPEG, AVI video file formats, MPEG standards.

Module- III

Multimedia I/O technologies: Pen input Video and Image display systems Print output technologies image scanners digital voice and audio digital camera Video images and animation full motion video. Multimedia storage and retrieval technologies: Optical media hierarchical storage management cache management for storage systems.

Module- IV

Multimedia application design: Types of Multimedia systems Virtual reality design components of multimedia systems Multimedia authoring systems: Hypermedia application design considerations. Hypermedia Messaging:mobile messaging Hypermedia message components, Hypermedia Linking and Embedding

Module- V

Distributed Multimedia Systems: Components Distributed Client-Server operation multimedia object servers Multi-Server network topologies Distributed multimedia databases Managing distributed objects.

Text Book


Reference

Pre-requisite:
- Knowledge in Multimedia Application Development with creativity
- Understanding Multimedia components

Objectives:
- Formulate a working definition of interactive multimedia
- Acquiring knowledge about latest multimedia tools & hardware’s

Outcomes
On successful completion of the course e students will be able to:
- Understand the working of interactive multimedia
- Get an idea about the latest multimedia tools & hardware’s

Module-I

Module-II

Module-III

Module-IV:
Multimedia Component Animation: Classification I: Cel animation- Object animation -Classification II: Two dimensional animation- Three dimensional animations - Classification III : Animation for movies.

Module-V

Text Book(s):
Reference Book(s):
3. Sound & Video, Lozano. Multimedia, PHI.
4. Multimedia: Production, Planning and Delivery, Villamil & Molina, PHI
5. Multimedia on the Pc, Sinclair, BPB.
DISCIPLINE SPECIFIC ELECTIVE (DSE) PAPERS
SPECIALIZATION STREAM - V [IT MANAGEMENT]

Paper Code: CSIT247

IT INFRASTRUCTURE MANAGEMENT

Prerequisite: Knowledge of Information System.

Objectives

- To understand the IT infrastructure
- To learn current computing environment
- To learn how to manage the Information Systems

Outcomes

On successful completion of the course students will be able to:

- Get an idea about IT Infrastructure, IT System Management
- Understand the current computing environment

MODULE 1 : IT Infrastructure: Overview

MODULE II : IT Infrastructure Management
Factors to consider in designing IT organizations and IT infrastructure, Determining customer's Requirements, Identifying System Components to manage, Exist Processes, Data, applications, Tools and their integration, Patterns for IT systems management, Introduction to the design process for information systems, Models, Information Technology Infrastructure Library (ITIL).

MODULE III: Current computing environment
Complexity of current computing, multiple technologies, multiple vendors, multiple users, e-Waste disposal, Total cost of ownership.

MODULE IV : IT system Management
Common tasks in IT system management, approaches for organization Management, Models in IT system design, IT management systems context diagram, patterns for IT system Management

MODULE V: Establishing business value of information system
Information system costs and benefits, Capital budgeting for information system, Real Options pricing models, Limitation of financial models.

TEXT BOOK :
Gupta, IT Infrastructure & Its Management- Tata McGraw-Hill Education, 2010
Prerequisite: Knowledge of IT Infrastructure Management.

Objectives:
- To understand the Nature of IT projects
- To design Project plans and write Project proposals and understand the Project Development Life Cycle.

Outcomes:
- Acquire knowledge of the Project management process and need for such a management strategy
- Understand how to be a stakeholder in a project and know the responsibilities

MODULE –I
The Nature of Information Technology Projects – Conceptualizing the IT Project - Developing the Project Charter and Baseline Project Plan

MODULE –II
The Human Side of Project Management - Defining and Managing Project Scope

MODULE –III
The Work Breakdown Structure and Project Estimation - The Project Schedule and Budget - Managing Project Risk

MODULE –IV
Project Communication, Tracking and Reporting – IT Project Quality Management

MODULE –V
Managing Organizational Change, Resistance and Conflict – Project Implementation, Closure and Evaluation.

TEXT BOOK
INFORMATION SECURITY MANAGEMENT

Prerequisite: Knowledge of Mathematics, Information System.

Objectives:
- To provide an understanding of principal concepts, major issues, technologies and basic approaches in information security.

Outcomes:
- Understand the history and the need for information security.
- Acquire knowledge about legal and ethical aspects of information security and risk control strategies.

MODULE- I:

MODULE- II:

MODULE- III:
System Security, Desktop &Server Security, Firewalls, Password cracking Techniques, Key- logger, viruses and worms, Malwares & Spywares, Windows Registry

MODULE- IV:

MODULE- V:
Vulnerability Assessment, Penetration Testing, Cyber Laws

Text Book:

Reference Book:
OPEN ELECTIVE - I

Paper Code: CSIT701

BUSINESS COMMUNICATION

Pre-requisite: Basic knowledge in English

Objectives
- To learn how to apply quality assurance tools & techniques
- To learn about standards and certifications

Outcomes:
- Able to understand the importance of quality and standards
- Understand various models of dealing with software quality

MODULE I
The fact and meaning of communication: the need for communication, the communication process, interpersonal communication, business communication, characteristics of business communication, many meaning of communication; direct communication, non-direct of written communication, non-method of communication, non-verbal communication, visual communication, audio-visual communication, Tele-communication.

MODULE II
Objectives of communication process, types of communication-internal and external communication, formal and informal channels, the grapevine, internal communication networks, downward communication, upward communication, horizontal communication, barriers to communication and how to handle them.

MODULE III
Public relations advertising- concepts and types, interviews: types and techniques, meetings, committees, conference and communication problems.

MODULE IV
Business reports, memoranda and representation, business correspondence: theory principles of business correspondence, parts of a letter, forms / formats of letters.

MODULE V
Business correspondence in practice- applications, reference, testimonials, appointments, confirmation, promotion, termination, resignation enquiries and replies, orders and acknowledgements, circulars, public speaking, precise writing.

TEXT BOOK
OPEN ELECTIVE – II

Paper Code: CSIT702

IT ENABLED SERVICES

Prerequisite: Knowledge of Information Technology

Objective:
- To understand importance of IT enabled services.
- To develop the ability to integrate various resources for optimization in the industry as well as for strategic utilization of IT enabled services and functions.

Outcomes:
- Understand the various IT business openings and strategies
- Acquire knowledge about various business models such as outsourcing

MODULE - I

MODULE – II

MODULE – III
Enterprise IT Architecture – Challenges of EITA, Defining EITA, Need for EITA study, Contents of Typical Enterprise IT Architecture and Standards for Enterprise IT Architecture.

MODULE - IV
IT Application Strategy: Introduction, Need, COTS, COTS package selection life cycle, COTS implementation Strategy, Post implementation support and management.

MODULE – V
IT sourcing strategy: Introduction, Imperatives for outsourcing, motivation and need to outsource, Outsourcing and associated risk, IT management layers and considerations for outsourcing, strategic Vs generic sourcing, Business process outsourcing, process to succeed outsourcing contract management and governance.

Text Books:
1. Sanjiva Shankar Dubey, “IT strategy and Management”, PHI, fifth edition, 2016 (Chapters: 1, 2, 4, 5, 6, 10)
OPEN ELECTIVE –III

Paper Code: CSIT703

TOTAL QUALITY MANAGEMENT

Prerequisite: Knowledge of Software Engineering and Software Quality Assurance

Objectives:
- To learn how to understand the customer’s perception and to satisfy the customer
- To understand process capability and Reliability concepts

Outcome:
- Understand the importance of quality from the customer perspective and translate to requirements
- Understand the significance of statistical tool in Quality

MODULE I

MODULE II

MODULE III

MODULE IV
Quality functions development (QFD) – Benefits, Voice of customer, information organization, House of quality (HOQ), building a HOQ, QFD process. Failure mode effect analysis (FMEA) – requirements of reliability, failure rate, FMEA stages, design, process and documentation. Seven Tools (old & new). Bench marking and POKA YOKE.

MODULE V

TEXT BOOKS
REFERENCES
OPEN ELECTIVE – IV

Paper Code: CSIT704 ARTIFICIAL INTELLIGENCE

Pre-requisite: Knowledge of logic and programming
Objectives:
  • To study the concepts of Artificial Intelligence and Methods of solving problems using Artificial Intelligence

Outcomes:
  • Understand concepts of artificial intelligence and underlying characteristics
  • Learn various techniques of knowledge representation

MODULE-I
Introduction to Artificial Intelligence - definition - underlying Assumption - A.I Techniques - Space search - production system - control strategies - Heuristic search - problem characteristics - production system characteristics.

MODULE-II

MODULE-III
Representing simple facts in logic - representing instance and Isa relationship- computable functions and predicates - resolution – frames - strong slot and filler structure Conceptual Dependency – scripts- advanced problem solving system.

MODULE-IV
Game playing - minimax search procedure - adding alpha beta cuts offs - additional refinements.

MODULE-V

TEXT BOOK:

REFERENCE BOOK:
OPEN ELECTIVE - V

Paper code: CSIT705

INTRODUCTION TO E-BUSINESS

Pre-requisite: Basic knowledge of Information Technology

Objectives:
- This course introduces students to various aspects and models fore-business.
- At the end of the course, students should have an understanding of the impacts which e- business is having on society, markets and commerce.

Outcomes:
- Understand the various E-Business solutions available today such as E-Commerce and its mechanisms
- Acquire knowledge from e-governance to e-learning

MODULE I

MODULE II

MODULE III

MODULE IV

MODULE V

TEXT BOOK
   Chapters(1.1,1.2,1.3,1.7,1.8,2.1,2.2,2.5,3.2,3.1-3.7, 4.1, 5.1,5.2,10.1-10.4)
OPEN ELECTIVE - VI

Paper Code: CSIT706

FUNDAMENTALS OF ACCOUNTANCY

Pre-requisites: Basic knowledge in mathematics

Objectives:

• To understand the basic Accountancy.
• To understand concepts of cash maintenance and Cost Accounting.

Outcomes:

• Acquire knowledge about basic account for maintaining record in a company
• Understand to manage profit and loss and trading accounts so that the student can maintain an account register

MODULE - I

MODULE - II
Double entry system-personal accounts, real accounts, nominal accounts-journal-ledger-preparation of trial balance-rectification of errors.

MODULE –III
Subsidiary books including cash book, bank Reconciliation statement

MODULE –IV
Preparation of trading account- preparation of profit and loss account and balance sheet- Final accounts with adjustments

MODULE –V

TEXT BOOKS
3. Pillai and Baghawati, “Cost Accounting”, 2010
OPEN ELECTIVE - VII

Paper Code: CSIT707

PRINCIPLES OF MANAGEMENT

Pre-requisites: No specific pre-requisite

Objectives:
- To understand the importance and functions of management
- To understand the purpose of planning and leadership

Outcomes:
- Understand the need for management and learn the nuances of management.
- Acquire knowledge about various forms of organizations, their structure and scope

MODULE –I
Meaning, Definition and importance of Management-Functions of a Manager-Management process- Role of a Manager-Social responsibility of Management-Co-Ordination-Meaning and scope requirements of effective co-ordination-problems in co-ordination.

MODULE –II
Meaning and purpose of planning – steps in planning Process-Limitations-Types of plans, objectives, Strategies, policies, procedures, programmes, management by objectives (MBO) – Decision making- Types of decisions-process of decision making-difficulties in decision making

MODULE –III
Nature and purpose of organizations-different forms of organizations-merits and demerits – linear and staff concepts- organisational charts- departmentations - bases for departmentation - product, function and territory-span of management

MODULE –IV
Authority-responsibility-accountability-delegation of authority-principles of delegation-unity of command – centralization and decentralization –advantages and disadvantages

MODULE –V

TEXT BOOK
SKILL ENHANCEMENT COURSES (SEC)

Paper Code: CSIT801

SOFT SKILLS

Prerequisite: Basic knowledge of English language

Objectives:
• To enable learners to develop their communicative competence.
• To facilitate learners to improve their soft skills.
• To equip learners with employability skills to enhance their prospect of Placements.

Outcomes
On successful completion of the course students will be able to:
• Develop their communicative competence.
• Understand employability skills to enhance their prospect of Placements.

MODULE - I
Nature of technical communication: Stages of communication – Channels of communication – Nature of technical communication – Importance and need for technical communication – Technical communication skills - The Listening process: Types of listening – Listening with a purpose – Barriers to listening – The speech process – Conversion and oral skills – Body language.

MODULE - II

MODULE - III
Presentation Skills: Planning the presentation – Preparing the presentation – Organizing your presentation – Rehearsing the presentation – Improving delivery

Text Book:

SOFT SKILLS LAB – EXERCISES
1. ORAL PRESENTATION
• TV violence.
• Is the Fast-Food Industry Accountable Legally for poor health?
• Intelligence depends more on the environment than genetic factors.
• Environment vs. technology Impact of technology on learning
• Learning does not eradicate ignorance
• How WiFi improved your life?
2. GROUP DISCUSSION
- NGOs - Do they serve peoples’ interests or are they pressure groups?
- Role of women in development.
- Kids today are not what they used to be.
- Repeated elections - Should taxpayers pay for it?
- In India, the whole is less than the parts - Do we lack in team spirit?
- "Dot.com" companies - Is there room for everyone?
- Artificial Intelligence - Will man be ever replaced by machines?

3. INTERVIEW SKILLS
- How to make a good impression
- Basic Interview Questions
- Behavioural Interview Questions
OFFICE AUTOMATION TOOLS

Prerequisite: Basic use of computers

Objectives:
1. To practically learn to use Microsoft word, excel and power point

Outcomes:
2. Students will be able to draft official and personal letters using various functions of MSWord.
3. Understand, manipulate, represent data with MSExcel using formula and graphs
4. Acquire knowledge to prepare presentation for presenting their data through PowerPoint

MODULE – I

MODULE – II
MS-EXCEL: Working with MS Excel - concepts of Workbook & Worksheets - Working with Data & Ranges - Different Views of Worksheets - Using different features with Data and Text - Use of Formulas, Calculations & Functions - Cell Formatting including Borders & Shading; Working with Different Chart Types - Printing of Workbook.

MODULE – III
MS-POWERPOINT: Creating and Viewing Presentations – Editing a Presentation – Working with Presentation, slide transitions and Special Effects

Text Books:

LIST OF LAB EXERCISES:
1. To create a personal letter using MS-WORD
2. To create company letter head using MS-WORD
3. To create a memo using MS-WORD
4. To create a greeting card using MS-WORD
5. To create a cover page of a project report.
6. To create letter using mail merge.
7. To create a spreadsheet for mark statement of students.
8. To create various graphs with respect to students’ academic details.
9. To create a slide show regarding our college and department.
Prerequisite: Familiarity with computers

Objectives:
- Understanding the key principles of animation and its applications.

Outcomes:
- Acquire knowledge of how to create animation using Flash.
- Acquire knowledge of how to create storyboard, work with files create movies and publish

MODULE – I

Flash - Action Scripting Using actions to control a timeline - Using frame labels - Creating button symbols - Creating animated buttons using movie clips - Movie Clip Controls - Browser / network.

MODULE - II

Advanced Animation Methods Creating movies playing within movies (movie clips and .swf) - Controlling multiple timelines (movies) through action scripting - Critique storyboards.

MODULE - III

Streamlining Files for Use on the Web, Publishing Files to the Internet & Pre-loaders- Controlling sound with script - Exploring types of output - Work on final project in class - Importing video - Publishing demo (video) reels on web - Publishing and exporting files.

REFERENCE BOOKS

LIST OF PRACTICALS
1. Creating Company Title
2. Create new Clip art Company Logo
3. Animated Buttons and Menus
4. Text Graphics
5. Morphing
6. Shape and Motion Tween
7. Creating an animated Web site
8. Working with Audio and video
PHP programming

Paper Code: CSIT804

Prerequisite: Knowledge of Web Technology and Database programming

Objectives:
• To learn the fundamentals of PHP language
• To learn how to use PHP language to create websites

Outcomes:
• Understand how to write code using PHP
• Acquire knowledge about web techniques

MODULE – I

MODULE – II
Functions – Strings – Arrays - Multidimensional Arrays- Extracting Multiple Values -Slicing an Array - Checking Whether an Element Exists - Traversing Arrays – Sorting - Objects – Terminology - Creating an Object - Accessing Properties and Methods - Declaring a Class – Introspection

MODULE – III
Web Techniques - HTTP Basics - Server Information - Processing Forms - Setting Response Headers - Maintaining State - Databases - Using PHP to Access a Database - Relational Databases

Text Book:
PHP Lab – List of Exercises

1. Create a PHP page using functions for comparing three integers and print the Largest number.
2. Write a function to calculate the factorial of a number (non-negative integer).
   The function accept the number as an argument.
3. Write a programe check whether the given number is prime or not.
4. Create a PHP page which accepts string from user. After submission that page displays the reverse of provided string.
5. Write a PHP function that checks if a string is all lower case.
6. Write a PHP script that checks whether a passed string is palindrome or not? (A palindrome is word, phrase, or sequence that reads the same backward as forward, e.g., madam or nurses run)
7. Write a programe to sort an array.
8. Write a PHP script that removes the whitespaces from a string.
   Sample string : 'The quick " " brown fox'
   Expected Output : Thequick""brownfox
9. Write a PHP script that finds out the sum of first n odd numbers.
10. Create a login page having user name and password. On clicking submit, a welcome message should be displayed if the user is already registered (i.e.name is present in the database) otherwise error message should be displayed.
MOBILE APPLICATION DEVELOPMENT

Prerequisite: Basic Knowledge of programming

Objectives:
● To introduce students to the Mobile application development ecosystem.
● To impart mobile application development skills.

Outcomes:
● Understand the anatomy of Android app and develop small application
● Understand to use multimedia handling in android application


Text Book:

Web Resources:
● https://developer.android.com/training/basics/firstapp/index.html
● https://developers.google.com/training/android/#for-new-programmers

Lab Exercises:
● Design and develop a mobile app to compute Body Mass Index.
● Design and Develop a mobile app for an event registration form.
● Design and develop a mobile app for storage and retrieval of data.
● Design and develop a mobile app with multimedia components.
● Design and develop a mobile app to utilize various sensors.
● Design and develop a mobile app to utilize location services.
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Paper Code: CSIT806: ONLINE COURSE /
Paper Code: CSIT807: MINI PROJECT /
Paper Code: CSIT808: INTERNSHIP (2 WEEKS) /
Paper Code: CSIT809: IN-PLANT TRAINING (1-month)
GENERAL ELECTIVE – I

Paper Code: CSIT125

DISCRETE MATHEMATICS

Objectives:
- Ability model data sets as mathematical functions and solve.
- Ability to understand and model the discrete structures such as graphs and trees.

Outcomes:
- Acquire knowledge regarding the use of Discrete Mathematics in Computer Science.
- Acquire knowledge regarding relevant topics such as set Theory, basic logic, graphs and trees.

MODULE – I

MODULE – II

MODULE – III

MODULE – IV

MODULE – V

Text Books

2. Narsingh Deo, “Graph Theory with applications to Engineering and Computer Science”, PHI, 1997. (Unit – 4, 5)
GENERAL ELECTIVE –II

Paper Code: CSIT126
APPLIED STATISTICS

Prerequisite: Knowledge of basic mathematics

Objectives:
- To learn the basics of statistics concepts
- To learn solving correlation and regression problems

Outcomes:
- Ability to understand and represent data
- Ability to analyze and interpret data.

Module 1-Diagrammatic and Graphic Presentation
General Rules for Constructing Diagrams, Types of Diagrams, One Dimensional or Bar Diagrams, Types of Bar Diagrams, Two-Dimensional Diagrams, Limitations of Pie Diagrams.

Module 2-Measures of Central Value
Arithmetic Mean
Calculation of Simple Arithmetic Mean-Individual Observations, Calculation of Arithmetic Mean-Discrete Series, Calculation of Arithmetic Mean-Continuous Series, Merits and Limitations of Arithmetic Mean.
Median
Calculation of Median-Individual Observations, Computation of Median-Discrete Series, Calculation of Median-Continuous Series, Merits and Limitations of Median
Mode
Calculation of Mode-Individual Observations, Calculation of Mode-Discrete Series, Calculation of Mode-Continuous Series, Merits and Limitations of Mode.

Module 3-Measures of Dispersion
Significance of Measuring Variation, Properties of a Good Measure of Variation, The Interquartile Range or the Quartile Deviation, Merits and Limitations, The Mean Deviation, Calculation of Mean Deviation-Continuous Series, Merits and Limitations, The Standard Deviation, Difference Between Mean Deviation and Standard Deviation, Calculation of Standard Deviation, Merits and Limitations.

Module 4-Correlation Analysis
Types of Correlation, Scatter Diagram Method, Merits and Limitations of the Method, Karl Pearson’s Coefficient of Correlation, Direct Method of Finding Out Correlation Coefficient, Origin is made and Problems, Rank Correlation Coefficient, Merits and Limitations of the Rank Method.

Module 5-Regression Analysis
Uses of Regression Analysis, Difference Between Correlation and Regression Analysis, Regression Lines, Regression Equations, Regression Equation of Y on X, Regression Equation of X on Y and Problems

Text Book
S.P.Gupta, Statistical Methods, Sultan Chand & Sons, Educational Publishers, New Delhi.

Reference Book:
GENERAL ELECTIVE –III

Paper Code: CSIT235

OPERATION RESEARCH

Prerequisite: Knowledge of basic mathematics

Objectives:
1. Ability to analyze the given data set using mathematical models.
2. Ability to represent the dataset and solve using techniques such as linear programming, Game theory, PERT and CPM.

Outcomes:
• Acquire knowledge to use OR methods for computation.
• Derive solutions for business problem using methods in OR.

Module –I
Introduction to Operations Research - Principal components of decision problems - phases of OR study.

Module –II
Linear Programming - graphical solution - simplex method including artificial variable technique - duality.

Module –III
Transportation and assignment models - Sequencing

Module –IV
Game theory - optimal solution of two-person zero-sum games - mixed strategies - graphical solution of (2 X n) and (m X 2) games - solution of (m X n) games by linear programming.

Module – V
PERT and CPM - network diagrams - determination of the floats and critical path - probability considerations in project scheduling.

Text Books

1. Treatment as in Hamdy A.Taha “Operations Research - An introduction (III edition)”, chapters 1, 2, 3 (omit 3.4), 4 (omit 4.4, 4.5), 5 (omit 5.4), 11 (omit all sections except 11.4 only), 12 (omit 12.3, 12.5).
2. R.L. Ackoff and M.W.Sasieni "Fundamentals of O.R.". (For Sequencing)
GENERAL ELECTIVE—IV

Paper Code: CSIT236
NUMERICAL METHODS

Prerequisite: Knowledge of basic mathematics

Objectives:
- To learn about linear interpolation methods
- To learn about numerical integration & Differentiation methods

Outcomes
On successful completion of the course students will be able to:
- Understand the linear interpolation methods.
- Understand the numerical integration & Differentiation methods

MODULE - I
Roots of Non-Linear Equations - Iterative methods, Bisection methods, method of false position – Newton-Raphson method – Statement of Fixed Point Theorem – Fixed point iteration: \( x = g(x) \) method.

MODULE - II

MODULE - III
Curve Fitting Interpolation - Lagrangian Polynomials – Divided differences – Interpolating with a cubic spline – Newton’s forward and backward difference formulas.

MODULE – IV

MODULE - V

Text Books:

Reference Book:
Non-Major Elective Course

Paper Code: CSITS171

BASICS OF COMPUTERS & OFFICE AUTOMATION

Prerequisite: No specific prerequisite

Objectives:
- To understand how to use software packages viz MS-Word, Excel and Powerpoint for day-to-day activities.

Outcomes:
- Non computer science will be able to understand the basics of computers and understand the office automation tools such as word, excel and powerpoint

MODULE – I
DOS: Internal & External commands; Wildcard Character; file name; Creating/Editing file; batch file - MS Windows: Windows Basic - Introduction to Windows- Using My Computer; Using Windows Explorer - Printing- Introduction to Accessories and Control Panel

MODULE – II

MODULE – III
MS Excel - Introduction and area of use -Working with MS Excel - concepts of Workbook & Worksheets - Working with Data & Ranges - Different Views of Worksheets - Column Freezing, Labels, Hiding, Splitting etc.;-Using different features with Data and Text - Use of Formulas, Calculations & Functions-Cell Formatting including Borders & Shading; Working with Different Chart Types - Printing of Workbook & Worksheets with various options.

MODULE -IV
MS PowerPoint - Introduction & area of use- Working with MS PowerPoint- Creating a New Presentation-Working with Presentation; Using Wizards- Slides & it’s different views; Inserting, Deleting and Copying of Slides - Working with Notes, Handouts, Columns & Lists- Adding Graphics, Sounds and Movies to a Slide-Working with PowerPoint Objects; Designing & Presentation of a Slide Show

MODULE – V:
MS Access: DBMS Concept; Creating database, table, fields & its properties; Data types; Adding primary key into table; Relationship; Adding/Editing data; sorting; indexing; designing queries; using forms; Report generation.

Text Books:
FUNDAMENTALS OF INFORMATION TECHNOLOGY

Prerequisite: No specific pre-requisite

Objective:
- To acquire the basic knowledge about computers

Outcomes:
- Understand the concepts and various components of computers. Acquire knowledge about internet and other applications

Module - I

Module - II
CPU and Memory - Secondary Story Devices - Input Devices - Output Devices.

Module - III
Introduction to Computer Software - Programming Language – Operating Systems – Introduction to Database Management System.

Module - IV
Computer Networks - WWW and Internet - Email - Web Design

Module - V

Text Book:
FUNDAMENTALS OF ‘C’ LANGUAGE

Prerequisite: Knowledge of computers

Objective:
- To learn how to solve common types of computing problems.
- To learn about various programming constructs of C

Outcomes:
- Analyze a given problem and develop an algorithm to solve the problem
- Use the ‘C’ language constructs in the right way. Design, develop and test programs written in ‘C’

MODULE - I
Introduction to Programming - How to develop a program, Algorithms, Flow-charts, Types of Programming Languages, Compiler and Linker, Testing and Debugging a program, Documentation. Constants, Variables & Data Types - Character set, C Tokens, Identifiers and Keywords, Constants, Variables, Data types - Operators & Expressions - Managing Input & output operations

MODULE - II
Decision Making – Branching & Looping - Arrays - One dimensional array: Array Manipulation, Different operations on one dimensional arrays, two dimensional array, operations on two dimensional arrays, multi-dimensional array, dynamic arrays - Handling of Character Strings.

MODULE - III
Functions - Top down approach of problem solving, standard library functions, passing values between functions, scope rules of functions, calling convention, return type of functions, call by value and call by reference, recursive functions - Storage Classes - Scope and extent, Storage Classes in a single source file: auto, extern and static, register,

MODULE – IV
Structures and Unions - Defining a structure, Declaring Structure variables, accessing structure members, structure initialization, copying and comparing structure variables, operation on individual members, arrays of structures, arrays within structures, structures and functions, union, size of structure, bit fields.

MODULE - V
File Processing - Defining and Opening a file, closing a file, input/output operations on files, error handling during I/O operations, random access to files, Command Line Arguments.

Text Books:
WEB DESIGNING

Prerequisite: Knowledge of computers

Objectives:

- To acquire the fundamental knowledge about internet & WWW.
- To learn how to develop static and dynamic web pages / websites for any organization.

Outcomes:

- Understand the scenario of web page development
- Ability to develop web pages using HTML and Cascading Style Sheets.

MODULE - I
Internet and the World Wide Web - Internet: Introduction to internet and its applications, E-mail, telnet, FTP, e-commerce, video conferencing, e-business. Internet service providers, domain name server, internet address, World Wide Web (WWW) - World Wide Web and its evolution, uniform resource locator (URL), browsers – internet explorer, Netscape navigator, opera, Firefox, chrome, Mozilla. search engine, web saver – apache, IIS, proxy server, HTTP protocol

MODULE – II
HTML5 – Introduction: formatting text by using tags, using lists and backgrounds, Creating hyperlinks and anchors - Style sheets, CSS formatting text using style sheets, formatting paragraphs using style sheets.

MODULE – III
Page layout and navigation - Creating navigational aids: planning site organization, creating text based navigation bar, creating graphics based navigation bar, creating graphical navigation bar, creating image map, redirecting to another URL, creating division based layouts.

MODULE – IV
Tables, Forms and Media - Creating tables: creating simple table, specifying the size of the table, specifying the width of the column, merging table cells, using tables for page layout, formatting tables: applying table borders, applying background and foreground fills, changing cell padding, spacing and alignment

MODULE – V
Creating user forms: creating basic form, using check boxes and option buttons, creating lists, additional input types in HTML5, Incorporating sound and video: audio and video in HTML5, HTML multimedia basics, embedding video clips, incorporating audio on web page.

Text Books:
B.Sc DEGREE EXAMINATION
Month and year

Information Technology

Semester
Subject Name

Time: Three hours  Maximum: 75 marks

SECTION – A (10 X 2 = 20 marks)

Answer ALL the questions
Totally 10 questions. 2 questions from each unit

SECTION – B (5 X 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b).
11. a) ........................................ (OR)

b) ........................................
12. a) ........................................ (OR)

b) ........................................
13. a) ........................................ (OR)

b) ........................................
14. a) ........................................ (OR)

b) ........................................
15. a) ........................................ (OR)

b) ........................................

one question (a & b) from each Unit [Equal distribution for all 5 units]

SECTION – C (3 X 10 = 30 marks)

Answer any THREE questions.
16.
17.
18.
19.
20.

One question from each Unit