M.Sc., Software Engineering

Five Year Integrated Degree

(Credit Based Semester System)

HAND BOOK
2015 – 2016 ONWARDS
Common to all Departments of Studies in the Faculty of Science


Master's Programme

A Master's Programme consists of a number of courses, in M.Sc. A Master's programme consists of a set of compulsory courses and Language Papers.

The entire course carries credit system. The number and distribution of credits for the courses will be decided by the respective faculties.

A Course is divided into two Semesters, Odd Semester and Even Semester.

Credits

The term credit is used to describe the quantum of syllabus for various programmes in terms and hours of study. It indicates differential weightage given according to the contents and duration of the courses in the Curriculum design.

The minimum credit requirement for the award of the Degree of Five Years Master's Programme shall be 225.

Courses

Each course may consist of Lectures/ Tutorials/ Laboratory work/ Seminar/ Project work/ Practical training report/ Viva voce etc.

Normally, in each of the courses, credits will be assigned on the basis of the Lectures/ Tutorials/ Laboratory work and other form of learning in a 18 week scheme schedule.
Eligibility for Admission

Candidates for admission to the first year of the Five Year Integrated M.Sc. Degree Course shall be required to have passed the final examination of the plus 2 Higher Secondary Course or Equivalent thereto with a minimum of 50% aggregate under academic stream with the following subjects as in Appendix - A, conducted by the Board of Secondary Education, Tamilnadu Government or an examination of any other authority accepted by the Syndicate of this University as equivalent thereto. They shall satisfy the conditions regarding qualifying marks, age and physical fitness as may be prescribed by the Syndicate of the Annamalai University from time to time.

Grading System

The term Grading system indicates a 10 point scale of evaluation of the performance of students in terms of marks, grade points, letter grade and class.

Course Duration

The duration for completion of a Five Year Integrated M.Sc. Programme in any course is Ten Semesters.

Student Counselors

To help the students in planning their course of study and for general advice on the academic programme, the Head of the Department will attach a certain number of students to a member of the faculty who shall function as student counselor for those students throughout their period of study.

Attendance

Every teaching faculty handling a course shall be responsible for the maintenance of Attendance Register for candidates who have registered for the course.

The instructor of the course must intimate the Head of the Department at least Seven Calendar days before the last instruction day in the semester about the particulars of all students who have secured an attendance of less than 80%.

A candidate who has attendance less than 80% shall not be permitted to sit for the End-Semester Examination in the course in which the shortage exists.

However, it shall be open to the authorities to grant exemption to a candidate who has failed to obtain the prescribed 80% attendance for valid reasons on payment
of a condonation fee and such exemptions should not under any circumstances be granted for attendance below 70%.

**Examination**

There will be two sessional assessments and one End-Semester Examination during each semester.

Sessional Test - I will be held during Sixth Week for the syllabi covered till then.

Sessional Test - I will be combination of a variety of tools such as class test, assignment and paper presentation that would be suitable to the course. This requires an element of openness. The students are to be informed in advance about the nature of assessment and the procedures. However, the tests are compulsory. Test-I may be for one hour duration. The pattern of question paper will be decided by the respective Faculty. Sessional Test-I will carry 12.5% of marks of the entire course.

Sessional Test - II will be conducted with a variety of assessment tools. It will also have an element of openness. The students are to be informed in advance about nature of assessment and the procedures. However the tests are compulsory. Test II may be for two hours duration. The pattern of question paper will be decided by the respective Faculty. Sessional Test - II will carry 12.5% of marks of the entire course.

There will be one End Semester Examination of 3 hours duration in each course.

The end semester Examination will cover all the syllabus of the course for 75% of marks.

**Evaluation**

Evaluation will be done by a continuous basis. Evaluation may be Objective Type Questions, Quiz, Short Answers, Essays or a combination of these, but at the End Semester it has to be a Written Examination.

The performance of students in each course is evaluated in terms of percentage of marks (PM) with a provision for conversion of Grade point (GP). The sum total performance in each semester will be rated by GPA while the continuous performance from the 2nd Semester onwards will be marked by OGPA.
**Marks and Grading**

A student cannot repeat the assessment of Sessional Test - I and Sessional Test - II. However, if for any compulsive reason the student could not attend the test, the prerogative of arranging a special test lies with the teacher in consultation with the Head of the Department.

A minimum of 50% marks in each course is prescribed for a pass. A student has to secure 50% minimum in the End Semester Examinations.

If a candidate who has not secured a minimum of 50% of marks in a course shall be deemed to have failed in that course.

The student can repeat the End Semester Examination when it is offered next in the subsequent Odd/Even Semesters till the regulations are in force. However, a candidate cannot move to the next odd/even semester if he/she has more than six papers as arrears at any point of time.

A candidate who has secured a minimum of 50% marks in all courses prescribed in the programme and earned a minimum of the credits will be considered to have passed the Master's Programme.

**Grading**

A ten point rating is used for the evaluation of the performance of the student to provide letter grade for each course and overall grade for the Master’s Programme.

<table>
<thead>
<tr>
<th>Marks</th>
<th>Grade point</th>
<th>Letter grade</th>
<th>Class</th>
</tr>
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<tbody>
<tr>
<td>90+</td>
<td>10</td>
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<td>Exemplary</td>
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<tr>
<td>85-89</td>
<td>9.0</td>
<td>D++</td>
<td>Distinction</td>
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<td>80-84</td>
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<td>D+</td>
<td>Distinction</td>
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<tr>
<td>75-79</td>
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<td>Distinction</td>
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<tr>
<td>70-74</td>
<td>7.5</td>
<td>A++</td>
<td>First Class</td>
</tr>
<tr>
<td>65-69</td>
<td>7.0</td>
<td>A+</td>
<td>First Class</td>
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<tr>
<td>60-64</td>
<td>6.5</td>
<td>A</td>
<td>First Class</td>
</tr>
<tr>
<td>55-59</td>
<td>6.0</td>
<td>B</td>
<td>Second Class</td>
</tr>
<tr>
<td>50-54</td>
<td>5.5</td>
<td>C</td>
<td>Second Class</td>
</tr>
<tr>
<td>49 or Less</td>
<td></td>
<td>F</td>
<td>Fail</td>
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</table>
The Successful candidates in the Core Subjects are classified as follows.

I-Class 60% marks and above in over all percentage of marks (OPM)

II-Class 50-59% marks in over all percentage of marks.

Candidates who obtain 75% and above but below 90% of marks (OPM) shall be deemed to have passed the examination in First Class (Distinction) provided he/she passes all the courses prescribed for the programme at the first appearance.

Candidates who obtain 90% and above (OPM) shall be deemed to have passed the examination in First Class (Exemplary) provided he/she passes all the courses prescribed for the programme at the first appearance.

Candidates who obtain highest marks in all examinations at the first appearance alone considered for ranking.

For the Internal Assessment Evaluation the break up marks shall be as follows:

<table>
<thead>
<tr>
<th>Theory</th>
<th>Marks</th>
<th>Practical</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test – I</td>
<td>10</td>
<td>Test – I</td>
<td>15</td>
</tr>
<tr>
<td>Test – II</td>
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<tr>
<td>Assignment</td>
<td>5</td>
<td>Record</td>
<td>10</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

The Project work will be assessed for 50 marks by a committee consisting of the Head of the Department, the guide and a minimum of two members nominated by the Head of the Department. The Head of the Department will be the chairman. 150 marks are allotted for the project work and viva-voce examination at the end of the semester.

Course-Wise Letter Grades

The percentage of marks obtained by a candidate in a course will be indicated in a letter grade.

A Student is considered to have completed a course successfully and earned the credits if he/she secures over all grades other than F. A letter grade F in any course implies a failure in that course. A course successfully completed cannot be repeated for the purpose of improving the Grade Point.

The F Grade once awarded stays in the grade card of the student and is not deleted even when he/she completes the course successfully later. The grade acquired later by the student will be indicated in the grade sheet of the Odd/Even semester in which the candidate has appeared for clearance of the arrears.

If a student secures F grade in the Project Work/ Field Work/ Practical Work/ Dissertation, either he/she shall improve it and resubmit it if it involves only rewriting
incorporating the clarification of the evaluators or he/she can re-register and carry out the same in the subsequent semesters for evaluation.

**Transitory Regulations**

Wherever there had been change of syllabi, examinations based on the existing syllabus will be conducted for three consecutive times after implementation of the new syllabus in order to enable the students to clear the arrears. Beyond that the students will have to take up their examinations in equivalent subjects, as per the new syllabus, on the recommendations of the Head of the Department concerned.

**APPENDIX-A**

<table>
<thead>
<tr>
<th><strong>M. Sc. Software Engineering</strong></th>
<th>A Pass in H.Sc. (10+2 level) and Equivalent thereto under academic stream with the following subjects viz. Mathematics, Physics, Chemistry and Computer Science.</th>
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</table>
# M.Sc. Software Engineering (Five Year Integrated Degree)

## Subjects of Study and Scheme of Examinations

### First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Exam Duration in hours</th>
<th>Exam Marks</th>
<th>Sess. Marks</th>
<th>Total Marks</th>
<th>Credit points</th>
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<tr>
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<td>3</td>
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<tr>
<td>IENC 12</td>
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<td>3</td>
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<td>ICEC 13</td>
<td>Civics, Environmental and Health Sciences</td>
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**Total**: 17

### Second Semester

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<th>Credit points</th>
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**Total**: 19

### Third Semester

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<tr>
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**Total**: 20
### FOURTH SEMESTER

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### FIFTH SEMESTER

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<th>T</th>
<th>P</th>
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<td>ISET 51</td>
<td>Data Base Management System</td>
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### SIXTH SEMESTER

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<td>ISEP 66</td>
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## SEVENTH SEMESTER

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<td>–</td>
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<td>75</td>
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<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISET 73</td>
<td>Soft Skills Development</td>
<td>4</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>ISEE 74</td>
<td>Elective – I</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISEP 75</td>
<td>DAA Lab</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>3</td>
<td>60</td>
<td>40</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>ISEP 76</td>
<td>CASE Tools and UML Lab</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>3</td>
<td>60</td>
<td>40</td>
<td>100</td>
<td>2</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>20</strong></td>
<td>–</td>
<td><strong>8</strong></td>
<td></td>
<td><strong>420</strong></td>
<td><strong>180</strong></td>
<td><strong>600</strong></td>
<td><strong>23</strong></td>
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</table>

## EIGHTH SEMESTER

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Exam Duration in hours</th>
<th>Exam Marks</th>
<th>Sess. Marks</th>
<th>Total Marks</th>
<th>Credit points</th>
</tr>
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<tbody>
<tr>
<td>ISET 81</td>
<td>Principles of Marketing and Management</td>
<td>4</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>4</td>
</tr>
<tr>
<td>ISET 82</td>
<td>Advanced Java (J2EE)</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
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<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISET 83</td>
<td>Software Testing</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISEE 84</td>
<td>Elective – II</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
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<td>5</td>
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<tr>
<td>ISEP 85</td>
<td>Open Source Software Lab</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>3</td>
<td>60</td>
<td>40</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>ISEP 86</td>
<td>J2EE Lab</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>3</td>
<td>60</td>
<td>40</td>
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<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
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<td><strong>420</strong></td>
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### NINTH SEMESTER

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<th>T</th>
<th>P</th>
<th>Exam Duration in hours</th>
<th>Exam Marks</th>
<th>Sess. Marks</th>
<th>Total Marks</th>
<th>Credit points</th>
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<tbody>
<tr>
<td>ISET 91</td>
<td>Object Oriented Analysis and Design</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISET 92</td>
<td>Software Project Management</td>
<td>5</td>
<td>–</td>
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<td>3</td>
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<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISET 93</td>
<td>Software Metrics</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>ISEE 94</td>
<td>Elective – III</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>3</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>5</td>
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<tr>
<td>ISEP 95</td>
<td>C# and Dot Net Lab</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>3</td>
<td>60</td>
<td>40</td>
<td>100</td>
<td>2</td>
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<tr>
<td>ISEP 96</td>
<td>Mini Project</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>3</td>
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<td>100</td>
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### TENTH SEMESTER

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Exam Duration in hours</th>
<th>Viva voce</th>
<th>Reviews</th>
<th>Total Marks</th>
<th>Credit points</th>
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<tbody>
<tr>
<td>ISEP 101</td>
<td>Project &amp; Viva voce</td>
<td>–</td>
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<td>100</td>
<td>20</td>
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<tr>
<td>Total</td>
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<td>–</td>
<td>–</td>
<td></td>
<td>60</td>
<td>40</td>
<td>100</td>
<td>20</td>
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</table>

L- Lecture; T-Tutorial; P-Practical

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>17</td>
<td>1st to 6th Semester Total Credit: 135</td>
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<tr>
<td>2</td>
<td>21</td>
<td></td>
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<tr>
<td>3</td>
<td>22</td>
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</tr>
<tr>
<td>4</td>
<td>27</td>
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<tr>
<td>5</td>
<td>24</td>
<td></td>
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<td>6</td>
<td>24</td>
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<tr>
<td>7</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>23</td>
<td>7th to 10th Semester Total Credit: 90</td>
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<tr>
<td>9</td>
<td>24</td>
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</tr>
<tr>
<td>10</td>
<td>20</td>
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<td>Total</td>
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</table>
# ELECTIVES

## Elective I

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>1.</td>
<td>ISEE 74</td>
<td>Design Pattern</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Windows Architecture and Programming</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>User Interface Design</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Neural Network &amp; Fuzzy Logic</td>
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</tbody>
</table>

## Elective II

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>ISEE 84</td>
<td>Soft Computing</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>Cloud Computing</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>Data warehousing &amp; Data Mining</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>Personal Software Process and Team Software Process</td>
</tr>
</tbody>
</table>

## Elective III

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>ISEE 94</td>
<td>C# and Dot Net</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>Software Reliability</td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td>Digital Image Processing Techniques</td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td>Artificial Intelligence and Expert Systems</td>
</tr>
</tbody>
</table>
FIRST YEAR : FIRST SEMESTER
PART–I  :  Language

**ITAC 11 : TAMIL (Option) தமிழ் - 1**

<table>
<thead>
<tr>
<th>கோட்டை-1</th>
<th>ITAC-11 - தமிழ் ஓரோட்டுப்புப்பு மற்றும் பட்டியல்கள்</th>
</tr>
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<tbody>
<tr>
<td>அலகு-1</td>
<td>குறிப்பிட்டுதல்</td>
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<tr>
<td>பாட்டை-3</td>
<td>(டானுக்கு பலகைல் மற்றும்)</td>
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<tr>
<td>அலகு-2</td>
<td>புத்தாண்டு</td>
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<tr>
<td>பாட்டை-3</td>
<td>(புத்தாண்டு பலகைல் மற்றும்)</td>
</tr>
<tr>
<td>அலகு-3</td>
<td>விளக்கங்கள்</td>
</tr>
<tr>
<td>அலகு-4</td>
<td>கல்லால விளக்கங்கள்</td>
</tr>
<tr>
<td>அலகு-5</td>
<td>ஒரு விளக்கங்கள்</td>
</tr>
</tbody>
</table>

பாட்டை தொகுக்குள்ளை:

1. குறிப்பிட்டுதல் - தேசிய பதிப்பு
2. பொழுதுபோக்கு - தேசிய பதிப்பு
3. முக்கியத்துணர் - பொழுதுபோக்கு தேங்க
4. கல்லால விளக்கங்கள் - அணிகல் விளக்கங்கள், மாநிலாங்கங்கள் பதிப்பு
5. குறிப்பிட்டுதல் - தேங்க விளக்கங்கள்
6. குறிப்பிட்டுதல் - தேங்க விளக்கங்கள்
7. விளக்கங்கள் - தேங்க விளக்கங்கள்
8. மாநிலாங்கங்கள் - தேங்க விளக்கங்கள்
9. கல்லால விளக்கங்கள் - (தேங்க) பதிப்பு - மாநிலாங்கங்கள் பதிப்பு, தேங்க
TEXT BOOK

I. NAVEEN HINDI PATMAALA-I
   First 15 lessons only (Poems omitted)
   Published by Dakshina Bharatha Hindi Prachar Sabha, T. Nagar,
   Chennai-17

II SARAL HINDI VYAKARAN

PART–II : English – I

IENC 12 : ENGLISH THROUGH LITERATURE I: PROSE

Objective:

To develop the communicative competence of learners in the English Language through training them in the skills of listening, speaking, reading and writing.

Unit I

Bonnie Chamberlain          “The Face of Judas Iscariot”
Swami Vivekananda          “Speech at World Parliament of Religion”

Unit II

Stephen Leacock            “My Financial Career”
Bhimrao Ambedkar           “Speech on 4th November 1948 in the Constituent Assembly”

Unit III

Robert Lynd               “On Forgetting”
Nirad C. Chaudhuri        “Indian Crowds”

Unit IV

A. G. Gardiner            “All about a Dog”
Ruskin Bond               “My Eccentric Guests”

Unit V

Martin Luther King (Jr.)  “I Have a Dream”
Khushwant Singh          “The Portrait of a Lady”

Text Book:

ICEC 13: CIVICS, ENVIRONMENT AND HEALTH SCIENCES

Unit–I

Unit–II
Political System: Union Government: President – Prime Minister – Parliament – Supreme Court – Electoral System
State Government: Governor – Chief Minister – Center State Relations.

Unit–III

Unit–IV

Unit–V
Physical Health – Introduction to health – Food, Meaning of balanced diet, sources, Common Nutritional deficiencies and prevention.
Personal Health – Cleanliness of body, Care of Skin, Nails, Eyes, hair, Oral Health, Clothing, Body posture and good habits such as exercises – Importance of avoiding smoking, alcoholism, drugs etc.,
Population explosion and Family Planning – Importance, Common methods of family planning for Men and Women.
Mothers and Children – Immunization of Children (importance, schedule) care of mothers during Pregnancy and after delivery.
Communicable Diseases – Symptoms and Prevention.

Unit–VI
2. Adolescent Problems.
3. First Aid.
Environment – Ventilation, Lighting, Simple Methods of purification of water, sanitary latrine, prevention of worm infestation (round worm, hook worm)

Text Books

**IMAC 14: MATHEMATICS–I**

**Unit–I : Matrices**

- Rank of a matrix
- Computation of the inverse of a matrix by elementary transformation
- Characteristic equations
- Eigen values and Eigen vectors and their properties
- Inverse of a matrix using Cayley–Hamilton theorem
- Real quadratic forms
- Reduction to canonical form by elementary congruent transformations
- Nature of quadratic forms

**Unit–II : Algebra and Trigonometry**

- Binomial, exponential and logarithmic series (without proof)
- Problems on summation of series
- Expansions of Cos $n \theta$ and Sin $n \theta$ in powers of Sin $\theta$ and Cos $\theta$
- Expressing $\cos^n \theta$ and $\sin^n \theta$ in terms of sines and cosines of multiples of $\theta$
- Hyperbolic functions

**Unit–III : Differential calculus**

- Curvature
- Radius of curvature
- Centre and circle of curvature
- Evolutes
- Envelopes
- Taylor and Maclaurin series of functions of two variables
- Jacobians
- Maxima and minima of functions of two variables
- Constrained maxima and minima
- Lagrange's method of multipliers

**Unit–IV**

- Direction cosines and direction ratios
- Planes
- Different forms
- Equation of plane passing through the line of intersection of two planes
- Straight lines
- Symmetric form

**Unit–V**

- Spheres
- Plane section of a sphere
- Orthogonal spheres
- Cone
- Equation of cone having its vertex at the origin or at a given point
- Right circular cone

**Text Book**


**Reference Books**

IAPC 15: APPLIED PHYSICS

Unit–I : Laser and Fibre Optics


Unit–II : Electrical Properties and Super Conductivity


Unit–III : Semiconducting Materials

Distinction between conductors, semi conductors and insulators on the basis of band theory – Factors affecting resistivity of a conductor, temperature, alloying, pressure, strain, magnetic field and environment – Intrinsic, Extrinsic Semiconductors – Materials preparation: Czochralski method – Zone refining, Hall effect in semiconductor – Applications of Hall effect, IC fabrication (Qualitative).

Unit–IV : Magnetic Properties


Unit–V : Dielectric Properties


Text Books
FIRST YEAR : SECOND SEMESTER
Part-I – Language – தமிழ்

1. விளக்குமுறையான சொல்லரிமுறை என்பது
2. அலகுப்பாடு சொல்லரிமுறை
3. தொடர்புச் சொல்லரிமுறை

விளக்குமுறை சொல்லரிமுறை என்பது சொல்லரிமுறையில் இருந்துதீர்த்து என்று விளக்கம் செய்யும் சொல்லரிமுறை என்பது. தொடர்புச் சொல்லரிமுறை என்பது சொல்லரிமுறையில் இருந்துதீர்த்து என்று விளக்கம் செய்யும் சொல்லரிமுறை என்பது.
4. अयस्कत, त्रिनकटे विहाराणां अकलं, नमः प्रजे क्षणे, नसले।
5. नमः अन्नादा तर्पये। भव (वद्ध अ) नमः प्रजे क्षणे, नसले।
6. म. मत्त्वपत्ते- मुरलकिकंते- मन्नानी प्रकट किलबम-2008, नसले।
7. सार्थक हिंदीकाल्प, कल्पित प्राचीनकालीन कथासंग्रह, भाषाविद्या प्रतिष्ठा, प्रस्तुत, 2005।
8. सार्थक, “जीवन वाच्यकालिक सम्प्रवृद्धिकालों”- गुण विपणिपी, अकले।
9. स. सचकलमण, - कल्पित प्राचीनकालीन, वैश्विकी प्रकट किलबम, (1993)
10. म.प. शान्तनुकथानी - वन्य प्राचीनकालीन कथाकालीन मालमालिक समानं, भाषा प्रतिष्ठा, अकले।
11. ए. गुजरातपत्रकाबृत - प्राचीनकालिक समानं कथा, अकले 2004।
12. सार्थक हिंदीकाल्प - कल्पित प्राचीनकालीन कथासंग्रह, भाषाविद्या प्रतिष्ठा 2005।
13. स. अभिविद्या - कल्पित प्राचीनकालीन मालमालिक समानं नमः प्रजे क्षणे, भाषाविद्या 2004।
14. प्रारंभ, नमः प्रजे - वापसिने स्वतंत्र भाषा, आरामधुनि त्रिशुल अवस्थायिक, अकले।

**ITAC 21 : HINDI – II (Option)**

**TEXT BOOK**

I  NAVEEN HINDI PATMAALA-II
First 10 lessons (including poems) Pub. by DBHP Sabha, Chennai-17

II  MANOHAR KAHANIYAM – PART-II
First 10 stories only Pub. by DBHP Sabha, Chennai-17

**ENGLISH – II**

IENC 22 : ENGLISH THROUGH LITERATURE II: POETRY

**Objective:**
To ensure and enhance:

- the ability of the learner to comprehend and appreciate poems in English
- the competence of the learner in using English language, and
- the interest of the learner in human values and perceptions

**Unit I**
1. William Shakespeare
   “Sonnet 29”

2. William Blake
   “A Poison Tree”

3. Robert Bridges
   “A Red, Red Rose”

**Unit II**
4. PB Shelley
   “Ozymandias”

5. Alfred Tennyson
   “The Brook”

6. Hillaire Belloc
   “Matilda”

**Unit III**
7. Robert Frost
   “Stopping by Woods on a Snowy Evening”

8. Walt Whitman
   “O Captain, My Captain”

9. Sylvia Plath
   “Mirror”

**Unit IV**
10. Toru Dutt
    “The Lotus”

11. A. K. Ramanujan
    “A River”

12. Keki N. Daruwala
    “Pestilence in Nineteenth Century

**Unit V**
13. Gabriel Okara
    “Once Upon a Time”

14. Maki Kureshi
    “The Kittens”

15. Robert Finch
    “Peacock and Nightingale”

**Text Book:**
UNIT – I
Integral Calculus: Methods of integration (Revision) – Integration by parts – properties of definite integrals – Reduction formulae – Evaluation of double and triple integrals – Change of order of integration – Application of multiple integrals for finding areas and volumes – Beta and Gamma functions.

UNIT – II

UNIT – III
Complete solution in terms of an integral of the corresponding homogeneous equation by inspection – reduction to normal form by removing the first derivative – change of independent variable – method of variation of parameters.

UNIT – IV

UNIT – V

TEXT BOOKS

REFERENCE BOOKS

ISET 24: COMPUTER ORGANIZATION AND ARCHITECTURE

UNIT I:
Basic Structures: Sequential Circuits- Design procedures- State Table and State Diagram-Von Neumann architecture- Stored Program Concepts- Functional Units

Addressing Methods and Programs: Programming View of a processor-Data types- Representation of data-Arithmetic operations-Basic operational concepts- Bus structures- Instruction cycle- Excitation Cycle

UNIT II:
Processing Unit: Instruction formats-Computer instruction-Instruction length- Address instruction-Arithmetic instruction-Logical instruction
Addressing mode: General concepts-Single component -addressing modes-Multi-component addressing modes-Position independent code

Unit III:
Input Output Organization: Basic principles of interrupt driven I/O and DMA- I/O operations- I/O programming-Memory mapped I/O - Basic Interrupt system-Direct Memory Access-DMA channel programming-Memory mapped screens

Unit IV:
Arithmetic: Magnitude comparator- Complements- Straight subtraction- Subtraction with components- Addition and subtraction algorithms- Hardware implementation- Multiplication and division algorithms- Hardware implementation- Divide overflow

Unit V:
Memory System: Auxiliary memory-Magnetic Drum- Magnetic Disks- Magnetic Tapes- Microcomputers
Memory: RAM/ROM chips- Memory address map-Memory connection to microprocessor-Memory hierarchy-Associative memory-Virtual memory-Cache memory-Memory management hardware

Text Books:

ISET 25: PROGRAMMING IN ‘C’

Unit–I

Unit–II

Unit–III

Unit–IV

Unit–V

File management and preprocessors: streams, buffering, error handling, opening and closing a file, reading and writing data, selecting the I/O method– random access–macro substitution – conditional substitution–conditional compilation – include facility, line control.

Text Books:
1. R.G.Dromey “ How to Solve it by Computer ”, PHI , 1998

Reference Books:
1. Deitel and Deitel “ C How to Program ”, Addison Wesley , 2001
SECOND YEAR: THIRD SEMESTER

Part-I – Language – தமிழ்

ITAC-31 - நாட்டேசிய பல்கலைக் கழகம்

முறைப்படுத்தல்: 75
சிற்று: 3

தேசியம்: இத்தமிழ்நாட்டில் ஒருங்கிணைந்த காலைக்கல்லறையில் ஆசிரியர் பல்பொறியியல் - ஆசிரியர் பொறியியல் மற்றும் தமிழ் தொலைக்கால்வழி

நூற்றெண்-1

தமிழ் நிலைக் கற்படையுடைய - அகரவுரையான (ஏ.ஆர். பார்லெடிகான்)
தமிழ் நிலைக் கற்படையுடைய - தமிழ் நிலைக் கற்படையுடைய - அகரவுரையான - நூற்றெண் - தமிழ் நிலைக் கற்படையுடைய

நூற்றெண்-2

மன்னர் போல்வளி - தமிழ் நிலைக் கற்படையுடைய - தமிழ் நிலைக் கற்படையுடைய - தமிழ் நிலைக் கற்படையுடைய

நூற்றெண்-3

ம.ஆர்.பி.பெ.பி.பைஞ்சுகுந்து - (அகரவுரையான - பார்லெடிகான்)
மாமல் போல்வளி - மாமல் மக்கள் தொலைக்கால் - தமிழ் மாமல் போல்வளி - நூற்றெண் - பொறியியல்

நூற்றெண்-4

மண்டல தமிழ் போல்வளி நிலைக் கற்படையுடைய பொறியியல் - காலைக்கல்லறையில் பொறியியல் - மண்டல தமிழ் போல்வளி - நூற்றெண் - பொறியியல்

நூற்றெண்-5

பொறியியல் - நூற்றெண் அலைநாடு (அகரவுரையான - மாமல் தொலைக்கால்)

பாடல்பாடுகள்

1. ஏ.ஆர்.பி.பார்லெடிகான் - தமிழ் நிலைக் கற்படையுடைய
மாமல் தொலைக்கால், புதுக்கோட்டு-1971
2. தமிழ் மக்கள் போல்வளி பைஞ்சுகுந்து &
ஏ.ஆர்.பி.பார்லெடிகான் - தமிழ் மாமல் அலைநாடு, புதுக்கோட்டு-2000
3. பார்லெடிகான் - தமிழ் மாமல் அலைநாடு,
பார்லெடிகான் சோன்னிப், புதுக்கோட்டு, புதுக்கோட்டு-2008
தமிழ் மாமல் அலைநாடு, மாமல் போல்வளி அலைநாடு,
மாமல் தொலைக்கால், புதுக்கோட்டு-92.
Objective:
To enhance the conversational competence of the learner by introducing to him to dramas in English

Unit I
Stanley Houghton
Kenneth Sawyer Goodman
“The Dear Departed”
“The Game of Chess”

Unit II
A. A. Milne
Anton Chekhov
“The Princess and the Woodcutter”
“A Marriage Proposal”

Unit III
Arnold Bennett
Arthur Miller
“The Stepmother”
“Grandpa and the Statue”

Unit IV
William Shakespeare
King Lear (Act I, Scene i)
William Shakespeare
Julius Caesar (Act III, Scene ii)

Unit V
Frances Goodrich & Albert Hackett
The Diary of Anne Frank (Act I)
Betty Keller
“The Tea Party”

Text Book:
ISET 33: DISCRETE MATHEMATICS

Unit–I : Fundamentals
Sets and Subsets – Operations on Sets – Sequences – Division in the integers – Matrices –
Mathematical Structures – Logic: Propositions and Logical Operations – Conditional
Statements – Methods of Proof – Mathematical Induction Counting: Permutations –

Unit–II : Relations and Digraphs
Product Sets and Partitions – Relations and Digraphs – Paths in Relations and Digraphs –
Properties of Relations – Equivalence Relations – Computer Representation of Relations and
Digraphs – Manipulation of Relations – Transitive Closure and Warshall’s Algorithm.

Unit–III : Functions
Functions – Functions for Computer Science – Permutation Functions – Growth of
Functions Topics in Graph Theory: Graphs – Euler Paths and Circuits – Hamiltonian Paths and
Circuits – Coloring Graphs.

Unit–IV : Order Relations and Structures
Partially Ordered Sets – External Elements of Partially Ordered Sets – Lattices – Finite
Boolean Algebras – Functions on Boolean Algebras – Boolean Functions as Boolean
Spanning Trees.

Unit–V : Semigroups and Groups
Binary Operations Revisited – semigroups – Products and Quotients of Semigroups –
Groups – Products and Quotients of Groups, Groups and coding: Coding of Binary Information
and Error Detection – Decoding and Error Correction.

Text Book

References

ISET 34: OOPS USING C++

UNIT–I
Introduction to OOP: Overview of C++ - classes - structures - union - friend function -
friend class - inline function - constructors - static members - scope resolution
operator - passing objects to functions - function returning objects

UNIT–II
Arrays - pointers - this pointer - references - dynamic memory allocation - functions
overloading - default arguments - overloading constructors - pointers to functions

UNIT–III
Operator overloading - member operator function - friend operator function - type
conversion - inheritance - types of inheritance - virtual base class - polymorphism -
virtual function.
UNIT-IV
Class templates and generic classes - function templates and generic functions - overloading a function templates - power of templates - exception handling - derived class exception - exception handling functions

UNIT-V
Streams - formatted I/O with its class functions and manipulators - creating own manipulators - file I/O - conversion functions - standard template library.

Text Book

Reference

ISET 35 : DATA STRUCTURES

Unit–I
Arrays: Representation of arrays. Stacks and Queues: Fundamentals – Evaluation of expression Infix to Postfix Conversion – Multiple Stacks and Queues – Analysis of the algorithms

Unit–II

Unit–III

Unit–IV

Unit–IV

Text Books:
1. Tremblay Sorenson, “An Introductions to Data Structures with Applications”, 2nd
SECOND YEAR : FOURTH SEMESTER

Maths

Part-I – Language – மொழி -


d- 4 - ITAC-41- மொழிப்படையும் அறிவு


Reference:

ITAC 41 : HINDI – IV (Option)

1. G. Sankara Iyer, "After Twenty Years" - 1998
3. Harishankar, "Gyanshakti" - 1987
4. S. Ramakrishnan, "Valiant Vicky" - 1987

ENGLISH – IV
IENC 42 : ENGLISH THROUGH LITERATURE IV: SHORT STORY

Objective:
To develop the communicative competence of learners in the English Language through training them in the skills of listening, speaking, reading and writing

Unit I
1. O’ Henry “After Twenty Years”
2. Ernest Hemingway “A Day’s Wait ”

Unit II
1. Flora Annie Steel “Valiant Vicky”
2. Oscar Wilde “The Selfish Giant”
Unit III

2. Shashi Deshpande   “I Want”

Unit IV

1. Leo Tolstoy     “Where Love is God is”
2. Somerset Maugham    “The Ant and the Grasshopper”

Unit V

1. Chinua Achebe     “Marriage is a Private Affair”
2. Bessie Head     “Heaven is not Closed”

Text Book:


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ISET 43: RESOURCE MANAGEMENT TECHNIQUES

Unit I


Unit II


Unit III

Integer programming – cutting plane algorithm, branch and bound method – multistage (dynamic) – programming solution of LP by dynamic programming.

Unit IV


Unit V

Project scheduling, network diagram representation – critical path method – time charts and resources levelling – PERT.

Text Book


Reference

Unit-I:


Unit-II:


Unit-III:


Unit-IV:


Unit-V:

Comparative study - DOS, UNIX/LINUX, Windows 9x, Windows NT.

Text Book:


Reference Books:

Unit–I : Historical Development of Programming

- Procedural Programming
- Structured Programming
- Object Oriented Programming
- Windows Programming
- Event Oriented Programming
- User Interfaces
- GUI
- Conceptual comparison of different types of Programming.

Unit–II : Windows Programming

- Overview of Windows Programming
- Data types
- Structure of a windows program
- Creating windows
- Windows support functions
- Windows messages
- Message Processing Functions
- Device contexts
- resources
- Menus
- Dialogs
- Document Interfaces
- Dynamic Linking libraries.

Unit–III : VISUAL BASIC Programming

- Introduction
- Forms
- Variables
- Types
- statements
- properties and methods
- events
- modules
- Procedures and functions
- Tool box controls
- menus
- grid controls
- Dialog boxes
- Data base Manager
- Data control
- Data Access objects.

Unit–IV : VISUAL C++ Programming

- Objects
- Classes
- MFC Library application framework
- App wizard
- class wizard
- resources
- Event handling
- menus
- dialog boxes
- Importing VBX Controls
- MFC File handling
- Document view architecture
- serialization
- splitter windows.

Unit–V : Advance Concepts

- Communicating with other applications
- OLE concepts
- MDI applications
- calling procedures in DLL
- debugging
- Data base management with ODBC
- Data base Application.

Text Books


References


Unit – I: 8-Bit Microprocessor

- Introduction
- Evolution of Microprocessor
- 8085 Architecture and Memory interfacing
- I/O devices
- Instruction set
- Addressing Modes
- Assembly language programming
- Counters and time delays
- Interrupts
- Timing diagrams
- Microprocessor applications.

Unit – II: Microcontroller

- Intel 8031/8051 Architecture
- Special Function Registers (SFR)
- I/O pins
- ports and circuits
- Instruction set
- Addressing Modes
- Assembly language programming
- Timer and counter programming
- Serial Communication
- Connection to RS 232
- Interrupts Programming
- External Memory Interfacing
- Introduction to 16 bit Microcontroller.

Unit – III: 80x86 Processors

- 8086 Architecture
- Pin Configuration
- 8086 Minimum and Maximum mode configurations
- Addressing modes
- Basic Instructions
- 8086 Interrupts
- Assembly levels programming
- Introduction to 80186- 80286- 80386- 80486 and Pentium processors.
Unit – IV: Peripherals and Interfacing
Serial and parallel I/O (8251 and 8255) – Programmable DMA Controller (8257)-
Programmable interrupt controller (8259)- Keyboard display ADC/DAC interfacing-
Inter integrated circuits interfacing (I2C standard).

Unit – V: Microprocessor Based Systems Design-Digital Interfacing
Interfacing to alpha numeric displays- Interfacing to liquid crystal display (LCD 16x2 line) –
High power Devices and Optical motor shaft encoders- Stepper motor interfacing – nalog
interfacing and Industrial control –Microcomputer based small scale – Industrial process
control system – Robotics and Embedded control – DSP and Digital Filters.

Text Books:
1. Ramesh S. Gaonkar, “Microprocessor Architecture Programming and
3. Douglas V. Hall, “Microprocessor and interfacing, Programming and Hardware”,

Reference Books:
2. Kenneth J. Ayala., “The 8086 Microprocessor, Programming and Interfacing the
80486 Architecture Programming and Interfacing”. Prentice Hall of India Pvt.
Ltd. 1995.
THIRD YEAR: FIFTH SEMESTER

ISET 51: DATA BASE MANAGEMENT SYSTEM

Unit–I : Introduction


Unit–II


Unit–III

Network Data Model: Data Structure Diagrams – DBTG Codasyl Model Retrieval, Update & Set Processing.

Unit–IV


Unit–V


Basic Concepts of Database Recovery – Concurrency Control Database Security and Integrity – Distributed Database.

Text Books


References


ISET 52: SOFTWARE ENGINEERING

Unit-I : Introduction


Unit-II : Requirement Analysis

**Unit-III : Software Design**  
Design Concepts – Design Models – Pattern Based Design – Architectural Design – Component Level Design – Component – Class Based And Conventional Components Design – User Interface – Analysis And Design

**Unit-IV : Software Testing**  

**Unit-V : Scm And Quality Assurance**  

**Text Book:**  

**Reference Books:**  

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**ISET 53: PROGRAMMING IN JAVA**

**UNIT I: INTRODUCTION**  

**UNIT II: CLASSES AND ARRAYS**  

**UNIT III: INHERITANCE, INTERFACES AND PACKAGES**  

**UNIT IV: MULTITHREADING, EXCEPTION HANDLING, FILES AND CREATING THREADS**  

UNIT V: APPLLET AND SWING

Difference between Application and Applets – Applet Life cycle – creating an Executable Applet – Designing a Web Page – Adding Applet to HTML File – Passing Parameters to Applets.


TEXT BOOK


REFERENCE


ISET 54: COMPUTER NETWORKS

Unit–I : Introduction
Uses and advantages of Networks – Structure, Topology & Design.


Unit–II: Communications between and among Computers and Terminals
Control & Accountability – Networks – Classification – Simplex, stop & Wait, Sliding window protocols – Protocol performance, specification and verification – Polling selection system – Multiplexing carrier sense system.

Binary synchronous control (BSC) – High level data link control (HDLC) – Synchronous data link control (SDLC).

Unit–III : Local area Networks

Unit–IV : Personal Computer Networks
PC Communication Characteristics – Error handling – PC as server – Linking PC with mainframes – File Transfer – PC and LAN.

Unit–V : Upper Level Protocols

Text Book

References
THIRD YEAR : SIXTH SEMESTER
ISET 61 : COMPUTER GRAPHICS

Unit–I : Introduction And Hardware

Unit–II : 2D Graphics

Unit–III : 3D Graphics

Unit–IV : Graphics Modelling

Unit–V : User Interface Design
Interactive Handling Models – Input And Output Handling In Window Systems.

Text Book

References

ISET 62 : SOFTWARE ARCHITECTURE

Unit–I:

UNIT-II:

UNIT III:

UNIT IV:
Formal Model and Specification – The Value of Architectural Formalism – Formalizing the Architecture of a Specific System – Formalizing an Architectural Style – Formalizing and

UNIT V:

TEXT BOOK

REFERENCE

ISET 63 : WEB TECHNOLOGY

Unit – I: Web Environment

Unit – II: HTML and XML
Formatting- tags- links- list- tables- frames- forms- comments in HTML.

Unit – III: Java Script
Introduction- Documents- forms- Statements- Functions- Objects in Java scripts- events and event handling- arrays- FORMS- Buttons- Checkboxes- Text fields and text areas.

Unit – IV: JSP
JSP: JSP overview- JSP language basics- JSP translation and compilation directives- Standard java objects from JSP- JSP configuration and deployment- actions and tags of JSP; Java servlets – Arch- servlet interface- applications of servlets.

Unit – V: VB Script
VBScript in the body of the HTML – Variables - Assignments and expression Procedures and functions-Decisional (conditional/alternative) statements List of VBScript intrinsic functions

Text Books:

Reference Books:
2. Burdman- “Collaborative Web Development”- Addison Wesley,, 1999
6. DON Box- “Essential COM”- Addison Wesley, 1998

ISET 64: OPEN SOURCE SOFTWARE

Unit I:

Unit II:

Unit III:

Unit IV:

Unit V:
Case Study: Government Policy toward Open Source (E-Governance) – Wikipedia as an Open source project.

Text Books:

Reference Books:
FOURTH YEAR: SEVENTH SEMESTER
ISET 71: SOFTWARE DESIGN

UNIT I DESIGN FUNDAMENTALS
The nature of design process – Objectives – Design qualities, Assessing the design process, Design view points for software.

UNIT II DESIGN METHODOLOGIES
Design practices, Design strategies – Top down and bottom up – Coupling and cohesion – Popular design methodologies – Function oriented and object oriented design, Design documentation.

UNIT III DESIGN MODELS
Structural analysis and design technique, SSADM and real time design. Data design, mappings requirements into a software Architecture.

UNIT IV DETAILED DESIGN
User interface Design – Task analysis and modeling – Interface design activities, implementation tools, comparison of design notations, structural programming.

UNIT V OBJECT ORIENTED DESIGN
Object oriented concepts, object oriented analysis – OOA process, object – relationship model, system and object design process – Design patterns.

TEXT BOOKS

REFERENCES

ISET 72: DESIGN AND ANALYSIS OF ALGORITHMS

Unit - I

Unit - II

Unit - III
Dynamic Programming: Multistage Graphs, 0/1 knapsack and Traveling Salesman Problem. Basic Traversal and Search Techniques: Techniques for Binary Tree, Techniques for Graphs: Depth First Search and Breadth First Search - Connected Components and Spanning Tree - Biconnected Components and DFS.

Unit - IV
Backtracking: 8 Queens Problems, Sum of Subsets, Graph Colouring, Hamiltonian Cycle and Knapsack Problem.
Unit - V
Branch and Bound: Least Cost Search. Bounding: FIFO Branch and Bound and LC Branch and Bound. 0/1 Knapsack Problem, Travelling Salesman Problem.

Text Books and References

ISET 73: SOFT SKILL DEVELOPMENT

Unit - I - Soft skills and developing positive Attitude - Soft skills: introduction – what are soft skills? - selling your soft skills - attribute regarded as soft skills – soft skills – social- soft skills- thinking – soft skills - Negotiating – exhibiting your soft skills- indentifying your soft skills- improving your soft skills - soft skills training –train yourself-top 60 soft skills - Developing positive attitude: introduction – meaning - features of attitudes- attitude and behavior formation of attitudes– change of attitudes – what can you do to change attitude?- ways of changing attitude in a person – attitude in a workplace – the power of positive attitude-developing positive attitude-example of positive attitude- example of negative attitude-over coming negative attitude- negative attitude and its result.


Unit - III - Body language - Introduction – body talk – voluntary and involuntary body language-forms of body language-parts of body language - origin of body language - uses of body language - body language in building interpersonal relations – body language in building industrial relations-reason to study body language-improving your body language – types of body language-Gender differences-female interest and body language - shaking hands with women - interpreting body language-developing confidence with correct body language.

Unit - IV - Group discussion - Introduction – meaning of GD – why group discussion? - characters tested in a GD – tips on GD – types of GD - skills required in a GD - consequences of GD - behavior of a GD - essential elements of GD - different characters in GD - traits tested in a GD - GD etiquette - areas to be concentrated while preparing for a GD - imitating a GD - techniques to initiate a GD - Non-verbal communication in GD – movement and gestures to be avoided in a GD-topics for GD - Interview skills - Introduction – why an interview?- types of interview - interview panel-types of questions asked-reason for selecting a candidate –reason for rejecting a candidate – on the day of interview- on the interview table – attending job fair-common mistakes that you would't want to do-questions the candidate should not ask during the interview –post- interview etiquette-how does one follow up?- telephonic interview –dress
code at interview – typical questions asked – interview mistakes – quick tips – how to present well in interview – tips to make a good impression in an interview – job interview – basic tips – how to search for job effectively – interview quotations.

**Unit - V - Time management** - Introduction - the 80:20 rule - take a good look at the people around you - examine your work-sense of time management – time is money – features of time-three secrets of time management - time management matrix- analysis of time matrix-effective scheduling – grouping of activities – five steps to successful time management – difficulties in time management- evils of not planning - time management is a myth – overcoming procrastination – ways of find free time- time management tips for students – interesting facts about time- ideal way of spending a day- time wasters – time savers – realizing the value of time-time circle planner.

**Text Book:**

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**FOURTH YEAR : EIGHTH SEMESTER**

**ISET81 : PRINCIPLES OF MARKETING AND MANAGEMENT**

**Unit–I : Forms of Business Organizations**

**Unit–II : Functions of Management**

**Unit–III : Staffing**

**Unit–IV : Financial Management**
- Short term and long term sources of funds – Financing decision – Investment decision – Introduction to financial statements – Production management – Planning and scheduling purchasing, inventory control.

**Unit–V : Marketing Management**

**Text Book**

**References**
ISET 82 : ADVANCED JAVA (J2EE)

Unit –I:
**Networking Programming:** Networking Basics - Client-Server Architecture- Socket Overview-Networking Classes and Interfaces-Network Protocols-Developing Networking Applications in Java.

**JDBC:** Introduction to JDBC-JDBC Drivers & Architecture- Joining, Manipulating Databases with JDBC, Prepared Statements, Transaction Processing

Unit-II:
**Servlet:** Web Application Basics-Introduction to servlet-Servlet life cycle-Developing and Deploying Servlets-Exploring Deployment Descriptor (web.xml)-Handling Request and Response-Initializing a Servlet-Accessing Database-Servlet Chaining-Session Tracking & Management-Dealing with cookies-Accessing Web Context-Passing INIT and CONTEXT Parameter-Sharing information using scope object-User Authentication-Filtering Request and Response

Unit-III:
**Java Server Pages (JSP)**
Basic JSP Architecture-Life Cycle of JSP -JSP Tags and Expressions-Role of JSP in MVC-2-JSP with Database-JSP Implicit Objects-Tag Libraries-Using Custom Tag-JSP Capabilities-Exception Handling-Session Management-Directives-JSP with Java Bean-Database handling in JSP.

Unit-IV:
**RMI:** RMI overview-RMI architecture-Example demonstrating RMI- Defining the Remote Interface, Implementing the Remote Interface, Compiling and Executing the Server and the Client

Unit –V:
**EJB:** Enterprise Bean overview-Types of enterprise beans-Advantages of enterprise beans-The Life Cycles of Enterprise Beans-Working with Session Beans-Statefull vs. Stateless-Session Beans-Working with Entity Beans-Message Driven Beans-JNDI (Java Naming and Directory Interface)-JNDI overview & JNDI API

Text and Reference Books:
1. “Advanced Java 2 Platform HOW TO PROGRAM” by H. M.Deitel, P. J. Deitel, S. E. Santry – Prentice Hall
2. “Beginning Java™ EE 6 Platform with Glass Fish 3 From Novice to Professional” by Antonio Goncalves

ISET 83 : SOFTWARE TESTING

UNIT I
UNIT II

UNIT III

UNIT IV

UNIT V

TEXTBOOK

REFERENCE:

FIFTH YEAR : NINTH SEMESTER
ISET 91 : OBJECT ORIENTED ANALYSIS AND DESIGN

Unit – I:
**Complexity:** Introduction-Object Basics-OOA-OOD-OO Modelling-Object Oriented Systems development life cycle-The Inherent Complexity of Software-The Structure of Complex Systems-On Designing Complex Systems.

Unit – II:
**Classes and Objects:** The Nature of an Object-Relationships among Objects-The Nature of a Class-Relationships among Classes-The Interplay of classes and objects-On building quality classes and objects.
Unit – III:
Classification: The Importance of Proper Classification-Identifying Classes and Objects- Key Abstractions and Mechanisms.

Unit – IV:

Unit – V:
Analysis- Design- Evolution and Maintenance of:
1)Data Acquisition:Weather Monitoring Station.
2)Frameworks:Foundation Class library and
3)Client/Server Computing:Inventory Tracking.

Text Book:


Reference Books:


ISET 92 : SOFTWARE PROJECT MANAGEMENT

Unit–I : Introduction
Defining a software development process – identify the software model, Activities, Relationship among Activities – document Information on each Activity, Tailoring, improving the process. Discipline – Need for – Implementing discipline – Attributes of successful leader.
Communicating in Harmony – personality Traits, Management Tools.

Unit–II : Project Schedule Planning

Unit–III : Project Tracking
Unit–IV : Product Requirement and Specifications


Unit–V : Marketing Issues


Text Book

Reference

ISET 93: SOFTWARE METRICS

UNIT I MEASUREMENT THEORY


UNIT II DATA COLLECTION AND ANALYSIS


UNIT III PRODUCT METRICS


UNIT IV QUALITY METRICS

Software quality metrics – Product quality – Process quality – Metrics for software maintenance – Case studies of Metrics Program – Motorola – HP and IBM.

UNIT V MANAGEMENT METRICS


TEXT BOOKS
REFERENCES
ELECTIVES – I (ISEE74)

DESIGN PATTERN

UNIT I : INTRODUCTION
History and origin of patterns – Pattern envy and ethics – Prototyping – Testing.

UNIT II : DESIGN PATTERNS
Kinds of pattern – Quality and elements – Patterns and rules – Creativity and patterns.

UNIT III : FRAMEWORKS
Algorithms and frameworks for patterns.

UNIT IV : CATALOGS
Patterns catalogs and writing patterns.

UNIT V : ADVANCED PATTERNS
Anti-patterns – Case studies in UML and CORBA.

TEXT BOOKS

REFERENCES

WINDOWS ARCHITECTURE AND PROGRAMMING

Unit–I

Unit–II

Unit–III
Menus, Scroll bars and Device contexts: Main menus in the Resource file, menus – Building menus in the Resource file, Adding a menu to the program’s window – changing menus, Bitmaps as menu items – The checkmark bitmap – Menu message – Menu function summary.

Scroll bars – Scroll bar Concepts, Scroll bar functions and message.

Device objects into a device context – Private device contexts – Saving a device context – Text and Device context functions.
Unit–IV

Memory management, Bit maps, Icons and clipboard

Local and Global memory, Segments and offsets, Allocation of memory in the Global Heap, Windows memory configuration, Compiler memory models, Memory functions.

DDB Bitmap format, Using DDB bitmaps, Memory device contexts, Stretching and painting Bitmap Images, Bitmap Image file format, Bitmap Compression format, writing a bitmap file.

Using Icons, Creating Icons at Run time, Icon functions, Using clipboard – clipboard formats, Multiple clipboard formats, clipboard functions.

Unit–V : Advanced topics

Dialog boxes – Types, Dynamic dialog boxes, Dialog boxes functions, DLLS – Using the functions in a DLL, DLL functions of an MDI application, MDI functions, How DDE data is exchanged, Cold DDE link, Hot DDE link, Warm DDE link, DDE message.

Text Book
1. The Waite Group’s, “Window API Bible” by James L. Corner.

References
TEXT BOOKS

REFERENCES

NEURAL NETWORK & FUZZY LOGIC

**Unit–I**

**Unit–II**

**Unit–III**

**Unit–IV**
Fuzzy Sets : Classical sets to Fuzzy sets – Fuzzy sets versus CRISP sets – operations on Fuzzy sets – Fuzzy arithmetic and Fuzzy relations – Applications.

**Unit–V**

**Text Book**

**References**
3. George J. Klir and Bo Yuan, “*Fuzzy Sets and Fuzzy Logic Theory and Applications*”, PHI, (Chapters – 1,2,3,4,5,8,12,13 & 14), 1995.

ELECTIVES – II (ISEE84)

SOFT COMPUTING

**UNIT I: INTRODUCTION**

**UNIT II: FUZZY LOGIC**
Probabilities Possibility – Measures of fuzzy events.

UNIT III: NEURAL COMPUTING

UNIT IV: NEURAL NETWORKS

UNIT V: GENTIC ALGORITHMS
Introduction – Biological terminology – Search space and fitness landscapes – Elements of genetic algorithms – Genetic algorithms in problem solving.

TEXT BOOKS

REFERENCES

ISEE 06: CLOUD COMPUTING

Unit -I
Introduction: Basics, applications, intranet and cloud, examples: Amazon, Google, Microsoft, IBM– advantages and disadvantages of cloud computing, Google appengine, Microsoft Azure, Amazon(EC2, S3,SQS),open stack, cloud computing services

Unit -II

Unit -III
Software as Service: overview-driving forces-company offerings-industries. Software plus services: Overview-mobile device integration-providers-Microsoft Online.

Unit -IV
Developing Applications: Google-Microsoft-Intuit QuickBase-Cast Iron Cloud-Bungee Connect-Development(Appengine,Azure, openstack etc.)-trouble shooting and application management.

Unit -V
Local clouds and thin clients: Virtualization-server solutions-thin clients. Cloud Migration: cloud services for individuals-enterprise cloud- methods for migration-analyzing cloud services.

Text Book:
ISEE 07: DATA MINING AND WAREHOUSING

Unit–I : Data Mining–Introduction

Unit–II : Knowledge Discovery Process

Unit–III : Dataware House–Architecture

Unit–IV : Hardware and Operational Design

Unit–V : Planning, Tuning and Testing
Capacity planning – Tuning the Data Warehouse – Testing the Data Warehouses – Data Warehouse Features.

References

ISEE 08: PERSONAL SOFTWARE PROCESS AND TEAM SOFTWARE PROCESS

UNIT I: INTRODUCTION

UNIT II: PLANNING

UNIT III: TSP STRTEGY
Team software process overview – The logic of the team software process – Launching a team project – The development strategy – The development plan – Defining the requirements.
UNIT IV: PRODUCT IMPLEMENTATION
Designing with teams – Product implementation – Integration and system testing – The postmortem.

UNIT V: TEAM MANAGEMENT
The team leader role – Development manager role – The planning manager role – The quality – Process manager role – The support manager role.

TEXT BOOKS

ELECTIVES – III (ISEE94)

ISEE 09: C# AND DOT NET

Unit I

Unit II
C# Basics: Introduction- Data types- Identifiers- Variable & constants- C# statements- Object Oriented Concepts- Object and classes- Arrays and Strings- System collections- Delegates and Events- Indexes Attributes- Versioning.

Unit III

Unit IV
Advanced Features Using C#: Web Services-Windows services-messaging- Reflection- COM and C#- Localization.

Unit V
Distributed application in C#- XML and C#- Unsafe Mode- Graphical Device Interface with C#- Case Study (Messenger Application).

Text Books:

Reference Books:
ISEE 10: SOFTWARE RELIABILITY

UNIT I INTRODUCTION TO SOFTWARE RELIABILITY


UNIT II SOFTWARE RELIABILITY IMPROVEMENT

The phases of a Software Project - Monitoring the development process – The software life cycle models - software engineering - Structured Analysis and structured Design - Fault tolerance - Inspection - Software cost and schedule.

UNIT III SOFTWARE QUALITY MANAGEMENT

Software quality modeling - Diverse approaches and sources of information - Fault avoidance, removal and tolerance - Process maturity levels (CMM) - Software quality assurance (SQA) - Monitoring the quality of software - Total quality management (TQA) - Measuring Software Reliability - The statistical approach - Software reliability metrics.

UNIT IV SOFTWARE RELIABILITY TECHNIQUES AND TOOLS

Data Trends - Complete prediction Systems - overview of some software reliability models -The recalibration of the models - Analysis of model accuracy - Reliability growth models and trend analysis - Software Costs Models - Super models.

UNIT V SOFTWARE RELIABILITY ENGINEERING PRACTICE 9


TEXT BOOKS


REFERENCES


ISEE 11: DIGITAL IMAGE PROCESSING TECHNIQUES

Unit–I :


Unit–II : Image Transformation & Enhancement


**Unit–III**


**Unit–IV**


**Unit–V**

Image Representation – Image Representation And Description – Boundary Descriptors – Regional Descriptors And Morphology.

**Text Book**


**References**


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**ISEE 12: ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS**

**UNIT I**

Introduction to Artificial Intelligence (AI): Computerized reasoning - Artificial Intelligence - Characteristics of an AI problem - Problems representation in AI - State space representation-Problem reduction.

**UNIT II**


**UNIT III**

AI and game playing - Major components of game playing program - plausible move generator - Static evaluation - Function generator - Minimax strategy - Alpha-beta techniques - Problems on computer game playing program.

**UNIT IV**


**UNIT V**

Introduction to Expert System: Definition - Characteristics, Architecture and descriptions of various modules. Knowledge engineering - Expert system life cycle - Difficulties in knowledge acquisition - Knowledge acquisition - strategies - Expert systems - Major application areas. Qualitative study of expert system like DENDRAL, MYCIN and RI
REFERENCE BOOKS:
1. Dr. K. Sarukesi and Dr. V. Janakiraman, —Foundation of Artificial Intelligence & Expert System‖, Macmillan Ltd., 1993.