STUDENT KIT
M.Sc.(Computer Science) / M.Sc.(Information Technology) - IV Semester

Jan-May 2015

Devi Ahilya Vishwavidyalaya
School of Computer Science & IT

“We make things happen . . .”
Producing world – class IT Professionals Since 1986

www.scs.dauniv.ac.in

MISSION OF SCS

- To produce world-class professionals who have excellent analytical skills, communication skills, team building spirit and ability to work in cross cultural environment.
- To produce international quality IT professionals, who can independently design, develop and implement computer applications.
- Professionals who dedicate themselves to mankind, who are environment conscious, follow social norms and ethics.
School of Computer Science & IT, DAVV, Indore

Scheme-Jan-May 2015 onwards

M.Sc. (CS) / M.Sc. (IT) – IV Semester

<table>
<thead>
<tr>
<th>Sub. Code</th>
<th>Subject Name</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>C</th>
<th>Internal</th>
<th>Practical /Project</th>
<th>End Sem</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS-4517</td>
<td>Linux/UNIX Administration</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>CS-5512</td>
<td>Compiler Design</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>CS-5617</td>
<td>Internet &amp; Web Technology</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>CS-5216</td>
<td>Design and Analysis of Algorithms</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>30</td>
<td>20</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>IC-3912</td>
<td>Professional and Social Issues in IT</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>40</td>
<td>-</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>CS-5805B</td>
<td>Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS-5809B</td>
<td>Comprehensive Viva</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Note:

Proposed Scheme can be changed/amended/improved according to necessity and requirement.
M.Sc (CS/IT) - IV

CS- 4517 UNIX /LINUX ADMINISTRATION

UNIT-I
Background: Evolution of Unix OS. Unix implementations. Features of Unix operating system. Linux operating system: Development of Linux. Applications of Linux operating system. Basic UNIX environment: Basic commands, directory management, pipes, tee, I/O redirection and other utilities.

UNIT-II

UNIT-III

UNIT-IV

UNIT-V

Text Book(s):

Reference Book(s)
CS-5617 Internet and Web Technology

UNIT-I

UNIT-II
Various methods of Session Handling, various elements of Deployment Descriptor. Java Database Connectivity: various steps in process of connection to the Database, various types of JDBC Drivers.

UNIT-III
JSP Basics: JSP lifecycle, Directives, scripting elements, standard actions, implicit objects.

UNIT-IV
Connection of JSP and Servlet with different database viz. Oracle, MS-SQL Server, MySQL. java.sql Package. Querying a database, adding records, deleting records and modifying records. Types of Statement.

UNIT-V
Separating Business Logic and Presentation Logic, Building and using JavaBean. Session handling in JSP, types of error and exception handling. MVC Architecture, introduction to Web Services.

Text Book(s) :

Reference Books:
CS-5216 Design and Analysis of Algorithms

UNIT-I

UNIT-II

UNIT-III
Sorting and Searching: Insertion sort, Quick sort, Heap sort, Merge sort, Shell sort, Selection sort, Binary Search, Interpolation Search.

UNIT-IV

UNIT-V
Advanced Topics: Computational Geometry, NP completeness, Approximation heuristics.

Text Book(s):

CS-5512 Compiler Design

UNIT-I

UNIT-II
Introduction to parsing. Bottom up and Top down parsing techniques- Shift reduce, Operator precedence, Recursive descent and predictive parsers. LL grammars and parsers, error handling in LL parser. LR parsers, Construction of SLR. Canonical LR and LALR parsing tables.

UNIT-III
Syntax directed definitions and translation: Construction of syntax trees, L~attributed definitions,
Intermediate code forms using postfix notation and three address code. Representing TAC using triples and quadruples, Translation of assignment statement. Boolean expression and control structures etc.

UNIT-IV
Definition of basic block control flow graphs, DAG representation of basic block. Advantages of DAG, Sources of optimization, Loop optimization, Idea about global data flow analysis, Loop invariant computation, Peephole optimization.

UNIT-V

Text Book(s):

Reference Book(s):
2. Dhamdhere, Compiler Construction.

IC-3912 Professional and Social Issues in IT

Unit I
Introduction to IT policy issues.
The Internet and the Web Freedom of expression: attempts to censor the Internet, filters, international issues, also the problem of spam.
Modern problems: Identity theft, cyberbullying, Internet addiction.

Unit II
Computer reliability, and errors and failures. Liability. Risks, importance of professionalism.
Cyber-Crime: Identity theft, malware, hackers, bots, etc.
Open source, GNU GPL/lesser GPL, Creative Commons, peculiar qualities of information goods, digital rights management - watermarking, usage tracking.

Unit III
Cybercommunities. Digital society. Democracy, access, diversity, issues of online identity
Practical and professional computer ethics. Codes of practice. Ethical programming.
Unit IV
Application of ethics in computing - case studies. DES, AES, RSA, and other cryptological products and protocols. Discussion of Public Key Infrastructure - trust models, key exchange, certificates.

Unit V

1. **Required Text(s)**
Computers, Internet and New Technology Laws by kernika seth.
Cyber Law & Crimes by Barkha Bhasin, Rama Mohan Ukkalam

2. **Essential References**
Cyber Law Cyber Crime Internet and E-Commerce by Prof. Vimlendu Tayal.
Open Source and the Law by priti suri

3. **Electronic Materials, Web Sites etc**
http://www.ili.ac.in
http://www.legalindia.in/cyber-crimes-and-the-law
http://www.itlaw.in/