CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI (C.G.)

Scheme of Teaching & Examination

M.E. Computer Technology & Applications

III Semester

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Board of Study</th>
<th>Subject Code</th>
<th>Subject</th>
<th>Periods per Week</th>
<th>Scheme of Examination</th>
<th>Total Marks</th>
<th>Credit L+(T+P)/2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Code</td>
<td></td>
<td>L</td>
<td>T</td>
<td>P</td>
<td>ESE</td>
</tr>
<tr>
<td>1</td>
<td>Computer Science &amp; Engg.</td>
<td>549311 (22)</td>
<td>Artificial Intelligence</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>100</td>
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<tr>
<td>2</td>
<td>Computer Science &amp; Engg.</td>
<td>549312 (22)</td>
<td>Parallel Computing</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>100</td>
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<tr>
<td>3</td>
<td>Computer Science &amp; Engg.</td>
<td>549321 (22)</td>
<td>Preliminary work on Dissertation</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>100</td>
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<tr>
<td>4</td>
<td>Computer Science &amp; Engg.</td>
<td>549322 (22)</td>
<td>Seminar on Industrial Training &amp; Dissertation</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
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<td></td>
<td>6</td>
<td>2</td>
<td>31</td>
<td>300</td>
</tr>
</tbody>
</table>

L- Lecture  T- Tutorial  P- Practical  ESE- End Semester Exam  CT- Class Test  TA- Teacher's Assessment

Note (1) – 1/4th of total strength of students subject to minimum of twenty students is required to offer an elective in the college in a particular academic session.

Note (2) – Choice of elective course once made for an examination cannot be changed in future examinations.
Unit 1
Introduction to AI: Definitions, Basic Elements of AI, Importance of AI, AI application areas. Early work in AI. Introductory concepts of AI: Clause Form, Resolution, Unification, Inference Mechanisms.
Formalized Symbolic Logics: Proportional Logic, FOPL, Rules.

Unit-2

Unit-3
Knowledge Based Systems: Knowledge representation, acquisition, organization & Manipulation. Structured knowledge: Graphs, Frames, Conceptual Dependencies and Scripts, Frame Problem.

Unit-4
Natural Language Processing: Syntactic Processing, Semantic Analysis, Morphological, discourse and Pragmatic Processing.

Unit-5
Introduction to Pattern Recognition: Recognition and Classification Process, recognizing and understanding Speech.

Text Book
Dan W. Patterson, “Introduction to Artificial Intelligence & Expert Systems”, PHI

References:
Unit 1
Parallel Computers: Computational speed, Computer Structures, Types of parallel computers, shared and distributed memory machines and models, networked computers as a multi complier platform, symmetric multiprocessing. Discussion of threads and multiprocessing, Synchorization and election, fundamental notions of performance in parallel systems.

Unit 2
Message passing Computing: Basics of message passing, programming, using workstation clusters, evaluationng parallel programs, debugging and evaluating parallel programs.

Unit 3
Pipeline technique: Computing platforms for pipelined applications, pipelined program examples ; synchronzation computations; synchorinzation, synchronized computations, examples.

Unit 4
Performance: Load Balancing, dynamic centralized, decentralized, load balancing using a line structure, distributed termination detection algorithms, examples.

Unit 5
Programming: Shared memory microprocessors, contracts for specifying parallelism, sharing data, examples. Algorithms and applications: sorting algorithms, numerical algorithms, Matrix addition, multiplication, Matrix vector multiplication, and implementation.

Text Book

References
Hwang, “Advanced Computer Architecture”