

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

Scheme of Teaching & Examination

M.E. Computer Technology & Applications

III Semester

S. No.	Board of Study	Subject Code	Subject	Periods per Week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
				L	T	P	Theory/ Practical				
							ESE	CT	TA		
1	Computer Science & Engg.	549311 (22)	Artificial Intelligence	3	1	-	100	20	20	140	4
2	Computer Science & Engg.	549312 (22)	Parallel Computing	3	1	-	100	20	20	140	4
3	Computer Science & Engg.	549321 (22)	Preliminary work on Dissertation	-	-	28	100	-	100	200	14
4	Computer Science & Engg.	549322 (22)	Seminar on Industrial Training & Dissertation	-	-	3	-	-	20	20	2
Total				6	2	31	300	40	160	500	24

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.

**CHHATISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,
BHILAI (C.G.)**

Semester: **M. E. III**
Subject: **Artificial Intelligence**
Total Theory Periods: 40
Total Marks in End Semester Exam. : **100**
Minimum number of class to be conducted: 02

Branch: **Computer Science & Engg.**
Code: **549311 (22)**
Total Tutorial Periods: **12**

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

Procedural & Declarative knowledge, Logic Programming, Forward & Backward reasoning.

AI Language PROLOG: Operators, Data Structures, Input & Output, Controlling Program Flow, Strings, Recursion.

Unit-3

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

Basic Components & Architecture of Expert Systems, Expert System-Shells, Dealing with uncertainty.

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

E. Rich and K. Knight, "Artificial Intelligence", Tata McGraw Hill.

References:

E. Charnaik and D. McDermott, "Introduction to artificial Intelligence", Addison-Wesley Publishing Company.

Nils J. Nilson, "Principles of Artificial Intelligence", Narosa Publishing Co.

W.F. Clifisin and C.S. Mellish, "Programming in PROLOG", Narosa Publishing Co.

Sanjiva Nath, "Turbo PROLOG", Galgotia Publications Pvt. Ltd.

M. Chandwick and J.A. Hannah, "Expert Systems for Personal Computers", Galgotia Publications.

**CHHATISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,
BHILAI (C.G.)**

Semester: **M. E. III**

Subject: **Parallel Computing**

Total Theory Periods: **40**

Total Marks in End Semester Exam. : **100**

Minimum number of class to be conducted: **02**

Branch: **Computer Science & Engg.**

Code: **549312 (22)**

Total Tutorial Periods: **12**

Unit 1

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

Unit 2

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

Unit 3

Pipeline technique: Computing platforms for pipelined applications, pipelined program examples ; synchrorization computations; synchorinzation, synchorized 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

Barrey Wilkinson, Michael Allen: "Parallel Programming" Pearson Education. "

References

Hwang & Briggs F.A. "Computer Architecture and Parallel Processing."

Hwang, "Advanced Computer Architecture"