Teaching Plan
Academic Year 2015-16

Class : **M.Sc. Computer Science II yr.** **Semester: IV**
Subject : **Artificial Intelligence** **Paper No: XIX (19)**
Periods per Week : **Th._04_ Pract. ____**
Week (Total) : **15**

Week	Topic to be covered
1	**Unit-I:** **Introduction:** Games, theorem proving, natural language, processing, vision & speech processing, robotics, and expert systems AI, Techniques – search, knowledge, abstraction problems solving State Space Search,
2	**Control Strategies:** Depth First Search, Breadth First Search, and Production Systems.
3	**Problem Characteristics:** Decomposition, Ignoble, Recoverable, Predictable.
4	**Unit-II:** **Use of Heuristics:** Hill climbing. Best First Search A* Algorithm : Admissibility, AND/OR Graph- AO* Constraint Satisfaction : Cryptoairthmetic, Waltz Line Labeling.
5	**Game Playing:** Miming Search, Alpha-Beta Pruning.
6	**Knowledge Representation:** Predicate Logic, Well Formed Formulas, Quantifiers; Prenex Normal Form, Solemnization; unification, modus ponies; resolution refashion-various strategies.
7	**Unit-III:** **Rule Based Systems:** Forward Reasoning: conflict resolution , backward reasoning: use of no backtrack structured knowledge representations : semantic net : slots, inheritance, frames-exceptions and defaults –attached predicates, conceptual dependency formalism.
8	**Object Oriented Representations:** Al Programming Languages: PROLOG, Syntax, Procedural and declarative meanings, prologue unification mechanism, anonymous variable, lists; use of fail, CUT, Not.

9	**LISP:** Basic Concepts, eval functions, functions and variables, scooping of LISP variables, iteration and recursion.
10	**Unit-IV:** **Handling Uncertainty:** Probablistic Reasoning , Bays Net , Dempster Shaver Theory, use of Certainty Factors, Fuzzy Logic Nonmonotonic Reasoning, Dependency Directed Backtracking, Truth, Maintenance Systems.
11	**Learning:** Concept of Learning, Learning Automation; The Genetic Algorithm, Learning by Induction, Neural Networks, Hopfield Networks, Perceptions-Learning Algorithm, Backpropagation Network Boatsman Machine, Recurrent Networks.
12	**Planning:** Components of Planning System , Plan Generation Algorithms, Forward State Propagation, Backward State Propagation , Non-Linear Planning Using Constraint Posting.
13	**Unit-V:** **Expert Systems:** Need & Justification for Expert Systems- Cognitive Problems, Expert System Architecture,
14	Rule Based Systems, Non Production System, Knowledge Acquisition, Case Studies: Mycin, R1.
15	**Natural Language Processing:** Syntactic Analysis, Top Down and Bottom Up Parsing; Augmented Transition Networks, Semantic Analysis, Case Grammars.

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Teaching Plan
Academic Year 2015-16

Class : **M.Sc. Computer Science II yr.** **Semester: IV**
Subject : **Compiler Design** **Paper No: XX (20)**
Periods per Week : **Th.__04__ Pract. ____**
Week (Total) : **15**

Week	Topic to be covered
1	**Unit-I:** **Introduction to Compilers:** Overview, Structure, implementation.
2	Programming Language Grammars: Inter Language grammars, derivation, reduction,
3	Syntax tree, ambiguity, regular grammars & expressions.
4	**Unit-II:** **Scanning and Parsing Techniques :** The Scanner, parser,
5	Translation, elementary symbol table organization, structures.
6	**Unit-III:** **Memory Allocation:** Static and dynamic memory allocation, array allocation and access,
7	Allocation for strings, structure allocation, common & equivalence allocation.
8	Introduction to Compilation of expressions.
9	**Unit-IV:** **Compilation of Control Structures :** Control transfers, procedural calls,

10	Conditional execution, interation control constructs.
11	Error detection, indication & recovery.
12	Compilation of I/O Statements: Compilation of I/O list, compilation of FORMAT list, IOSUB, file control.
13	**Unit-V:** **Code Optimization:** Major issues, optimizing transformations,
14	local optimizations, program flow analysis,
15	Global Optimization, writing compilers.

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Teaching Plan
Academic Year 2015-16

Class : M.Sc. Computer Science II yr. **Semester: IV**
Subject : Internet Computing with ASP.NET **Paper No: XXI (21)**
Periods per Week : Th.__04__ Pract. ____
Week (Total) : 15

Week	Topic to be covered
1	**Unit-I:** HTML Basics: Introduction to Internet, Applications, Web designing, web browser, web pages, home page, web site, web servers, www. Concepts of hypertext, hypermedia, versions of HTML, elements of HTML, syntax, sections of HTML, building & executing html documents,
2	Various tags of HTML: Headings & Title, Text-level elements, Changing Colors font, size using FONT> Tag, Text alignment & paragraph Creating links with <A Href> tag, Inserting image using <IMG> tag, Creating Table with <TABLE> tag, rowspan, colspan attributes.
3	<FRAMESET> & <FRAME> tag, <FORM> tag, creating text boxes, buttons, checkboxes, radio buttons, hidden control, password, lists & dropdown list, textarea. Submitting a form, get & post method. ASP & HTML forms. Working with Cascading Style Sheet (CSS):
4	**Unit-II:** **ASP.NET Controls:** Overview of dynamic web page, introduction & features of ASP.NET, understanding ASP.NET controls, applications, web servers, installation of IIS. Web fors, web form controls, server controls, client controls, adding controls to web form, buttons, text box,
5	labels, checkbox, radio buttons, list box. Adding controls a runtime, Running a web application, creating a multiform web project, Form validation: client side and server

	side validation,
6	Validation controls: required field comparison range, Calendar control, Ad rotator control, Internet Explorer control.
7	**Unit-III:** **ADO.NET:** Overview of ADO.NET, from ADO to ADO.NET,
8	ADO.NET architecture, Accessing data using data adapters and datasets, using command and data reader,
9	binding data to data bind controls, displaying data in data grid.
10	**Unit-IV:** **XML in .NET**: XML basics, attributes, fundamentals of XML
11	classes: Document, text writer, text reader,
12	XML validations, XML in ADO.NET, Data document
13	**Unit-V:** **Web Services:** Introduction, State management, view state, session state, application state, service description language, building & consuming a web service.
14	Web application development, Caching, Threading concepts, Creating threads in .NET, Managing threads,
15	Thread Synchronization, features of .NET, role based security & code access security, permissions

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Teaching Plan
Academic Year 2015-16

Class : M.Sc. Computer Science II yr. **Semester: IV**
Subject : Biometrics **Paper No: XXII (22) (Elective 2.1)**
Periods per Week : Th.__04__ Pract. ____
Week (Total) : 15

Week	Topic to be covered
1,2,3	**Unit I:** **Introduction :**Operation of a biometric system, Verification versus identification, Performance of a biometric system, Applications of biometrics, Biometric characteristics, Limitations of biometric systems, Introduction to Biometrics and its various techniques.
4,5,6	**Unit II:** **Finger Print Verification Techniques:** Introduction, History, Matching Verification and Identification, Feature Types, Image processing and verification.
7,8,9	**Unit III:** **Hand Geometry Based Verification** Introduction, System Operation, Implementation Issues, Applications.
10,11,12	**Unit IV:** **Retina Recognition** Introduction, Retina/Choroidas Human Descriptor, Computing Subsystem
13,14,15	**Unit V:** **DNA Based Identification:** Introduction, A brief History of DNA based Identification, Applications of DNA Identification Technology,

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