**Lesson Plan (Session 2025-26)**

M. Sc.(Computer Science) Final Year (3rd Semester)

**M.SC.-301 ARTIFICIAL INTELLIGENCE**

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| **UNIT** | **Week / Date** | **TOPIC DETAIL** |
| 1 | 22, July 2025  To  27, July 2025 | Introduction and applications of artificial intelligence |
| Problem solving: Defining the Problem as state space search |
| Production system, Problem characteristics, |
| Problem System characteristics |
| Search techniques: Generate and test, |
| 29, July 2025  To  03, August 2025 | Hill climbing, |
| Selection Statements, Scope of Variable, |
| Best first search, |
| do |
| A\* algorithm, |
| Problem reduction |
| 05, August 2025  To  10, August 2025 | Expert system: Definition |
| Continue |
| Role of knowledge in expert system |
| do |
| Architecture of expert system |
| do |
| 2 | 12, August 2025  To  17, August 2025 | Expert system development life cycle |
| Problem selection |
| Prototype construction |
| Continue |
| Formalization |
| Revision, Discussion & Problem solving session |
| 20, August 2025  To  24, August 2025 | Implementation, |
| Final Modifier, Universal Super class- Object Class |
| continue |
| Evaluation, |
| do |
| Revision, Discussion & Problem solving session |
| 27, August 2025  To  31, August 2025 | Knowledge acquisition, |
| Knowledge engineer, Cognitive behavior, |
| Acquisition techniques |
| Knowledge representation |
| Level of representation, |
| Revision, Discussion & Problem solving session |
| 02,September 2025  To  07, September 2025 | Knowledge representation schemes |
| Formal logic, Inference Engine, |
| Semantic net, Frame, Scripts |
| Propositional and Predicate logics |
| Propositional equivalence, Rules of Inference. |
| Revision, Discussion & Problem solving session |
| 3 | 09, September 2025  To  14, September 2025 | Perception: Sensing, Speech recognition, |
| Vision, Action, Neural networks: Introduction |
| do |
| Comparison of artificial neural networks with biological neural networks |
| do |
| learning in neural networks |
| 16, September 2025  To  21, September 2025 | Perceptions, Back propagation networks |
| do |
| application of neural networks |
| do |
| do |
| Revision, Discussion & Problem solving session |
| 24, September 2025  To  28, September 2025 | Fuzzy logic: Definition, |
| do |
| Difference between Boolean and Fuzzy logic |
| do |
| fuzzy subset, |
| Revision, Discussion & Problem solving session |
| 30, September 2025  To  05, October 2025 | fuzzy membership function |
| fuzzy expert system |
| Inference process for fuzzy expert system |
| do |
| fuzzy controller. |
| Revision, Discussion & Problem solving session |
| 4 | 07, October 2025  To  12, October 2025 | Programming of Lisp: Background: history |
| installing, resources. Basics, |
| do |
| symbols, evaluation, data types |
| continue |
| Revision, Discussion & Problem solving session |
| 14, October 2025  To  19, October 2025 | lists |
| do |
| conditionals, functions |
| continue |
| lambda forms |
| Revision, Discussion & Problem solving session |
| 21, October 2025  To  26, October 2025 | Emacs, REPL |
| continue |
| Backquote, vectors, sequences |
| file system |
| do |
| Revision, Discussion & Problem solving session |
| 28, October 2025  To  31, October 2025 | loop |
| format, |
| packages. |
| streams |
| debugger, compiling, Prolog in Lisp |
| knowledge representation, |
| 04, November 2025  To  09, November 2025 | constraints, unification |
| Macros and Object: Macros, closures |
| reader macros, |
| Error system |
| 11, November 2025  To  16, November 2025 | performance tuning |
| Type of system, CLOS, Structs. |
| FFI, OS hook |
| External libraries. |

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