



Logic Programming Course Specifications

Faculty: Computer and Informatics

Department: Scientific Computing

Program(s) on which the course is given : Bachelor in Computer and Information Sciences

Major or Minor element of programs : All majors

Department offering the program : Scientific Computing

Department offering the Course : Computer Science

Academic year / Level : 3rd Year / B.Sc.

Date of specification approval : 15/10/2009

A. Basic Information

Title : Logic Programming **Code : CS352**

Lecture : 3 hrs/week **Practical : 3 hrs/week** **Tutorial:---**

Credit Hours :--- **Total: 6 hrs/week**

B. Professional Information

1. Overall aims of course:

The course is intended to give the student an understanding of the principles of logic programming and how these are applied to standard problems in AI. By the end of the course the students will be able to:

2. Intended Learning Outcomes of Course (ILOs):

a. Knowledge and Understanding:

a1. Understand the concepts of the Logic Programming



-
- a2. Understand the principles and techniques of logic programming and how these can be applied in practice, for example in AI; how Prolog relates to the predicate calculus.
 - a3. Understanding the declarative meaning of a program; the execution mechanism of Prolog in terms of unification, resolution and SDL-trees.

b. Intellectual skills

- b1. Ability to plan and to solve stander problems in AI.
- b2. Ability to write programs in Prolog using a mixture of recursion, arithmetic, lists, trees, cuts, negation, and other non-logical features such as assert.
- b3. Ability to analyze the solution alternatives and choose the optimum one

c. Professional and practical skills

- c1- Implement programs in Prolog and solve practical problems in AI.
- c2- Ability to Design programs of varying levels of complexity using Prolog.

d. General and Transferable Skills:

- d1. Present prolog in solving AI problems in other disciplines
- d2. Search for information and adopt life-long self-learning.
- d3. Use current technology in laboratories.
- d4. Work within and contribute to a team, apply management skills such as co-ordination, project design and evaluation processes.

e. Attitude:

- e1. Demonstrate an ethical behavior toward software copyrights
- e2. Discuss the legal background of copyright in national and international law.

3. Contents:

Topic	No. of hours	Lecture	Tutorial/ Practical
Introduction and Logic Foundations of Prolog	6	3	3
First Order predicate Logic	6	3	3
Facts , Rules and Queries	6	3	3
Prolog variables, bound and free variables and Matching	6	3	3
Syntax and meaning of prolog program	6	3	3
Backtracking and Recursive Rule definition	6	3	3
Built-in Predicates and Arithmetic Expressions	6	3	3
Lists Manipulation I	6	3	3
Lists Manipulation II	6	3	3
Operators	6	3	3
Controlling Backtracking I	6	3	3
Controlling Backtracking II	6	3	3
Data Structures in prolog	6	3	3
Advanced techniques	6	3	3
Review	6	3	3
Total	90	45	45