



VIETNAM NATIONAL UNIVERSITY OF HO CHI MINH CITY
UNIVERSITY OF NATURAL SCIENCES
FACULTY OF INFORMATION TECHNOLOGY

COURSE SYLLABUS

Course Code:	TH131
Title:	Logic Programming
Credits:	3
Workload:	Lecture hours: 2 periods * 15 weeks = 30 periods Laboratory hours: 2 periods * 15 weeks = 30 periods Preparative hours: 2 periods * 15 weeks = 30 periods
Prerequisites:	N/A

Course Objectives:

This course on logic programming aims to supply students with logical approaches to problem solving in AI, especially in signal processing problems and in expert systems.

Main Text: N/A

References:

- *Objecting Prolog*
P.Bellot, Hearsom, 1994.
- *The Art of Prolog*
L.Sterling, E.Shapero, MIT Press, 1986.
- *Logic Programming*
Y.Deville, Addison _ Wesley Publishing Com., 1990.

Course Outline:

Chapter 1 : Principles of logic programming

1. Logic reasoning
 1. Clauses
 2. Predicates
2. Logic programming
 1. Hình gi¶i
 2. Principles of logic programming

Chapter 2 : Prolog

1. Basic components of a logic programming language
 1. Concepts
 2. Structure of a Prolog program
2. Algorithms inside Prolog

1. Unification
2. Algorithm to find solutions in Prolog
3. User-supplied predicates

Chapter 3 : Logic programming techniques

1. Data abstraction
 1. Building data structures
 2. Recursive rules
2. Recursive programming
 1. Computational programming by recursion
 2. String: a recursive data structure
 3. Cuts and recursion
 4. Analysis and cuts
 5. Using cuts
 6. Optimizing a recursive formula
3. Some rules in logic programming
 1. Rule 1 : Using predicates and variables
 2. Rule 2 : Early fault detection
 3. Rule 3 : Backtracking
 4. Rule 4 : Using unification
 5. Rule 5: Using predicate Fail +!

Chapter 4 : Some applications of logic programming

1. Applications of strings
2. Some searching techniques
 1. Exhaustive search
 2. Trial-and-error
 3. Heuristic search
3. Expert systems and prolog
4. Prolog and context free grammars

Grading

Final exam : 60%

Assignments: 40%