

# CSE 3401

# Functional and Logic Programming

York University CSE 3401

Vida Movahedi

# CSE 3401

- SC/CSE 3401 3.00- Functional and Logic Programming
- Vida Movahedi , [vida@cse.yorku.ca](mailto:vida@cse.yorku.ca)
- Lecture Hours: Wednesdays 19:00- 22:00, PSE 321
- Office hours:
  - Mon. 12:00-14:00 CSEB 2002

# General Description

[from 2009/2010 Undergraduate Calendar]

- **CSE 3401 3.0 Functional and Logic Programming**
- This course covers functional and logic programming. Together with the students' background on procedural and object-oriented programming, the course allows them to compare the development of programs in these different types of languages.
- "Functional programs work with values, not states. Their tools are expressions, not commands. How can assignments, arrays and loops be dispensed with? Does not the outside world have states? These questions pose real challenges. The functional programmer can exploit a wide range of techniques to solve problems." (Paulson, 1996)
- "Based on predicate logic, it [logic programming] allows computing problems to be expressed in a completely 'declarative' way, without giving instructions for how the problem is to be solved. An execution mechanism, like the one embodied in implementations of Prolog, can then be used to search efficiently and systematically for a solution of the problem." (Spivey, 1996)
- Topics on functional programming may include: recursive, polymorphic and higher-order functions; recursive types and type inference. Topics on logic programming may include backtracking, resolution and unification.
- *Prerequisites: General prerequisites, MATH1090 3.0*

# Text books & resources

- Textbooks:
  - *Common LISPcraft*, Robert Wilensky, W.W. Norton & Co. , 1986
  - *Programming in Prolog*, W.F. Clocksin, C.S. Melish, Springer-Verlag, 5'ed, 2004
- Online books:
  - Ulf Nilsson and Jan Maluszynski, [\*Logic, Programming and Prolog \(2ed\)\*](#) (free download available);
  - Peter Seibel, [\*Practical Common Lisp\*](#), Apress
- Website: [www.cse.yorku.ca/course/3401](http://www.cse.yorku.ca/course/3401)

# Workload & grading

- Assignments & Lab (4 assignments, 1 lab, 30% total)
- Midterm exam (30%)
- Final exam (40%)

# Others

- Important Dates
  - Lab: June 16, 2010
  - Midterm: June 23, 2010
  - Drop date: July 5, 2010
  - Last day of course: July 28, 2010
  - Summer Exam Period: Aug. 3-13, 2010
- Policies
  - Academic honesty
  - Missed exams
  - Late assignments = not-submitted assignment!
  - To get a passing final grade, you need to pass both parts of this course: Logic Programming AND Functional Programming.