

# CSCI 5232 - 01: CONCEPTS OF PROGRAMMING LANGUAGES

Fall 2014

Time: Monday 4:00 – 6:50pm

Room: Delta D-241

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**Instructor:** Dr. Hisham Al-Mubaid

**Office:** Delta 168. Phone: (281) 283-3802

**E-mail:** hisham@uhcl.edu      URL: sce.uhcl.edu/almubaid

**Office Hours:** Tue: 11:00 – 3:00pm,  
Wed: 1:00 – 3:00pm, and  
by appointment.

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## Teaching Assistant (TA):

**TA Office hours:** Priyanka Kumbhar

Mon: 12 – 4 pm & 7 – 8pm	Tue: 11 – 1 pm & 3 – 6 pm
Wed: 11 – 1pm & 4 – 6pm	And by appointment

**Email:** kumbharp2745@uhcl.edu <or> priyanka.kum17@gmail.com

**Room:** D-158 lab (computer lab, first floor Delta building).

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## Course Pre-requisite

CSCI 2315 Data structures

## Textbook

Programming Languages: Principles and Paradigms, Second Edition, A.B. Tucker  
and R.E. Noonan, McGraw-Hill, 2007. ISBN-13: 978-0-07-286609-4.

References:

-Concepts of Programming Languages. RW Sebesta, 10<sup>th</sup> Ed. 2013.

## Course Description

This course will introduce and study the main concepts for various programming languages from conceptual point of view; topics will include formal language definition, data storage techniques, design techniques and implementation issues for compilers. Both numeric and string processing languages will be covered. The course assumes knowledge of at least one imperative language.

## Grading and Evaluation

Homework & Quizzes	35%
Midterm exam	30%
Final exam	35%

## Learning Outcomes:

Upon completion of this course, students will be able to:

- ♦ Explain the five core principles of programming languages: syntax, names, types, semantics, and functions.
- ♦ Explain and use finite state machines and describe grammars.

- ♦ Explain and describe the four major programming paradigms: imperative, object-oriented, functional, and logical.
- ♦ List and explain the steps in the compilation process.
- ♦ Identify correct and incorrect sentences in a given grammar using parse tables.
- ♦ Write small programs in LISP.
- ♦ Write small programs in Prolog.

### Important dates:

**Midterm exam:** Monday October 27th

**Final exam:** Monday December 8th

### General Course Outline

Week 1	Overview and Grammars Chapter 1
Week 2	No class { <i>Holiday – Labor day</i> }
Week 3	Lexical analysis, syntax analysis, finite state automata, regular expression, Chapter 2 and 3, and notes
Week 4	Lexical and Syntactic Analysis continued Chapter 3
Week 5	Finite State Machines Notes, and Chapter 2 and 3
Week 6	Parsing Notes Names and Types Chapters 4 and 5
Week 7	Parsing Notes Names and Types Chapters 5 and 6
Week 8	Semantics and semantic interpretation chapters 7 and 8
Week 9	Midterm Exam {10/27}
Week 10	Functions Chapters 9 and 10
Week 11	Memory Management Chapter 11
Week 12	Imperative Programming Chapter 12
Week 13	Object-Oriented Programming Chapter 13
Week 14	Functional Programming Chapter 14, and notes
Week 15	Logic Programming Chapter 15, and notes
Week 16	Final Exam {12/08}

### General Notes

- Blackboard will be used in this course to post course material, announcements, and any handouts. Students are expected to review and read class material from Blackboard and from the book before coming to class. The material will be posted on the course Blackboard before class time. This is a face-to-face course conducted as lectures and presentations.

- All submissions and deliverables of assignments are due at the beginning of the class (*first ten minutes*) in the due date. Some assignments will be submitted online in Blackboard.
- Class attendance is expected. It is the student's responsibility to get the material discussed, announcements, handouts, or anything conducted during a missed class meeting.
- Some course materials and handouts, e.g. homework paper, will be distributed in the class and may not be posted electronically on Blackboard.
- Participations and discussions from students are highly encouraged and will be rewarded.
- All class assignments: 30% taken off per day penalty on late submissions. For example, if the homework is graded out of 150 points, then 30% (or 45 points) will be taken from whatever grade you make if you submit one day late.
- There will be quizzes given in the course. Usually quizzes will be announced one week before. Sometimes, quizzes will be announced in the same day at the beginning of the class.
- Makeup of exams and quizzes will be very restricted, and is allowed only under a documented (appropriate documents) legitimate excuse that is to the discretion of the instructor.
- Students with special needs and disability should contact the instructor as soon as possible and contact Disability Services Office at 281-283-2627 website: [www.uhcl.edu/disability](http://www.uhcl.edu/disability)
- Academic Honesty: HONESTY CODE of UHCL states: **I will be honest in all my academic activities and will not tolerate dishonesty.** Students and Faculty are bound to the honor code; therefore, academic dishonesty will not be tolerated in this class! See the UHCL catalog for more details. You are encouraged to become familiar with the policy of academic dishonesty found in the UHCL official student handbook. **All submissions are considered completely 100% your own work.** Sharing the course material after finishing this course is not allowed. Any violation of the dishonesty rules will result in filing *Academic Dishonesty Form* and subtracting 10 points of total course grade for each incident. (resource: you can check this resource which includes a tutor on academic integrity and honesty: virtual academic integrity library Vail: <http://www-apps.umuc.edu/vailtutor/>).

### Some important dates:

#### Fall Regular 15-Week (August 25, 2014 - December 6, 2014)

August 25, 2014	First Class Day - Fall Regular 15-Week Session
September 1, 2014	University Holiday - Labor Day
September 10, 2014	Census Date - Fall Regular 15-Week Session
November 10, 2014	Last Day to Withdraw - Fall Regular 15-Week Session Course(s)
November 26 - 28, 2014	University Holiday - Thanksgiving Holiday (Students)
December 6, 2014	Last Day of Class - Fall Regular 15-Week Session
December 8 - 13, 2014	Final Exams - Fall Regular 15-Week Session
December 14, 2014	Commencement Ceremony - NRG Arena
December 19, 2014	Grades available over E-services Online