# CPSC 360
# PROGRAMMING LANGUAGE CONCEPTS

**Instructor:** Prof. Aaron Koehl
aaron.koehl@cnu.edu

**Office Hours:** Gosnold 223, MW 9-10a, 2-3p, and by appointment.

**Meeting Times:** MWF 10am-10:50 Gosnold 218

## OVERVIEW

In this course we will learn concepts in the design of programming languages, both theoretical and practical. We will survey the historical landscape of various languages, highlight their main characteristics, and learn terminology relevant to the programming field. We will also study languages from the perspectives of compilation and performance. Several languages will be examined in practice.

## OBJECTIVES

In this course, you will be exposed to topics in the design and implementation of programming languages. Upon finishing this course, it is expected that you will:

- Be a better programmer, by understanding the fundamentals of programming languages.
- Be more apt to select the proper programming language for the problem at hand.
- Be more prepared to embark upon a development project using studied languages.
- Be more capable of learning new languages.
- Be able to communicate intelligently with other programmers.

The essential objectives of the course are learning principles, generalizations or theories, and gaining factual knowledge, such as terminology, classifications and trends.

Other important objectives are learning to apply course material, and developing specific skills, competencies and points of view needed by professionals in the field.

## TEXT

Sebesta, Robert. Concepts of Programming Languages, 9th Ed. Addison-Wesley: Boston, Massachusetts. 2009. ISBN 978-0-13-607347-5.

## LECTURES

Students are responsible for attending lectures and reading book chapters before covering them in class. Some of the material is complex, and will require multiple reviews to ensure understanding. Students will not be successful if lectures are missed.

## ASSESSMENT

There will be two partial-term exams during the semester, and a comprehensive final exam.
The grading breakdown is as follows:

- Coursework 35%
- Mid-terms (x2) 35%
- Final Exam 30%

## HONOR POLICY

"*On my honor, I will maintain the highest possible standards of honesty, integrity, and personal responsibility. That means I will not lie, cheat, or steal and as a member of this academic community, I am committed to creating an environment of respect and mutual trust.*"

## DISABILITIES

Students with documented disabilities are required to notify the instructor on the first day of class and in private if accommodation is needed. The instructor will provide students with disabilities with all reasonable accommodations, but they are not exempted from fulfilling the normal requirements of the course. Work completed before the student notifies the instructor of his/her disability may be counted toward the final grade at the sole discretion of the instructor.

If you believe that you have a disability, you should make an appointment to see me to discuss your needs. In order to receive an accommodation, your disability must be on record in the Dean of Students office, 3rd Floor David Student Union/DSU (Telephone: 594-7160).

## TUTORING

The Center for Academic Success offers free assistance for CNU students in writing, mathematics, science, languages, and other subjects. The Center is located in room 240 of the Trible Library. For more information please visit http://tutors.cnu.edu or call 594-7684.

## SUCCESS

If I become concerned about your course performance, attendance, engagement, or well-being, I will speak with you first. I may also submit an Institutional Referral Form that will be received by the Center for Academic Success. Depending upon the nature of my concern it also may be received by Counseling Services. If you are an athlete then Jenny Nuttycombe will receive notice. Someone will contact you to help determine what will help you succeed. Please remember that this is a means for me to support you and help foster your success at CNU.

## TENTATIVE SCHEDULE — REV. 1

| | **TOPIC** | **Resources** |
|---|---|---|
| Week 1 | Introduction / Preliminaries | Ch. 1 |
| Week 2 | Low-Level Instructions | |
| Week 3 | Language Practicum | |
| Week 4 | Syntax and Semantics | Ch. 3 |
| Week 5 | **EXAM 1** | |
| | Lexing and Parsing | Ch. 4 |
| Week 6 | Names, Bindings, Typing, and Scopes | Ch. 5 |
| Week 7 | Language Practicum | |
| Week 9 | Data Types | Ch. 6 |
| Week 10 | **SPRING BREAK (Mar. 4-8)** | |
| Week 11 | Expressions and Assignments | Ch. 7 |
| | **EXAM 2** | |
| Week 12 | Language Practicum | |
| Week 13 | Control Structures | Ch. 8 |
| Week 14 | Subprograms | Ch. 9, 10 |
| Week 15 | Special Topics | |
| | Last Day of Class (Monday, Apr. 22) | |
| Final Exam | Friday, April 26, 11am-1:30pm | |

Special language topics will be drawn from parallel programming, concurrency, object oriented support, compilation, mobile web.