

CSCI 320 — Programming Language Concepts

Fall 2018 — Section 10235

HWEA 300 — 9:55am – 11:10am

Professor: Yulia Kahl

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Office: HWEA 311

Office Hours: TR 11:15am - 1:45pm and by appointment.

Questions about homework assignments and class material are encouraged.

Catalog Description

This course introduces the formal study of programming language specifications and develops an understanding of the structure and run-time organization of imperative programming languages. Topics include data types, control structures, functional programming, logic programming, procedure mechanisms, and data abstraction. Lectures three hours per week.

Prerequisite: CSCI 230 with a grade of C- or better

Textbook

Louden, Kenneth C., and Kenneth A. Lambert. *Programming Languages: Principles and Practice*. 3rd ed., Course Technology, 2012.

Learning Outcomes

Students are expected to be able to

1. Identify the core characteristics of procedural, object-oriented, functional and logic programming language paradigms.
2. Use language formalisms such as regular expressions and grammars (BNFs) to specify programming language constructs.
3. Identify and describe the steps of a typical compiler.
4. Explain the concept of binding including binding of names and referencing environments, binding times, scope and lifetime.
5. Apply static and dynamic scope rules to examples.
6. Understand types and type systems including type checking, inference, equivalence, compatibility.

7. Explain how arrays, records and pointers are implemented.
8. Implement a pointer-based program in an imperative language.
9. Explain and apply parameter-passing methods.
10. List the steps required in processing subroutine calls and returns.
11. Explain OO: type inheritance vs. implementation inheritance, polymorphism and dynamic binding.
12. Apply functional and logic programming to specific examples.

Assessment

Two tests: 20% each

Homework/Quizzes: 30%

Final Exam (comprehensive): 30%

Attendance Policy

You are expected to attend every lecture.

Student Honor Code

Your homework assignments and projects are independent work.

Working together to understand a *concept* is encouraged; sharing code is not allowed. If you are having trouble, please see or e-mail me, and I will be glad to help. Cheating will be taken very seriously; this obviously includes getting the answers off the Internet.

College of Charleston Honor Policy Summary

Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved.

Incidents where the instructor determines the student's actions are related more to a misunderstanding will be handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student's file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of

Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This status indicator will appear on the student's transcript for two years after which the student may petition for the XX to be expunged. The F is permanent. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration—working together without permission—is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others' exams, fabricating data, and giving unauthorized assistance.

Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor.

Students can find the complete Honor Code and all related processes in the Student Handbook at <http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php>

Students with Disabilities

If you have a documented disability and are eligible for accommodations, please e-mail or contact me during my office hours. To apply, visit the Center for Disability Services/SNAP, located on the first floor of the Lightsey Center, Suite 104.

Evaluations

You will be allotted some time in class for the purpose of course evaluations. For more information, please see <http://academicaffairs.cofc.edu/courseinstructorevaluations/>