PROGRAMMING LANGUAGE PRINCIPLES

COP5556 CLASS 12397 AND 28480
CLASS PERIODS: TUESDAY 4 (10:40AM-11:30) LIT121
THURSDAY 4-5 (10:40-12:35) CSE E222
LOCATION: SEE ABOVE, NOTE TWO LOCATIONS
ZOOM: See course canvas site for link

FALL 2022

INSTRUCTOR

Dr. Beverly Sanders
Telephone: (352) 505 1563
Zoom office Hours: T 3-3:50pm or by appointment. See the course canvas site for link.

GRADERS

Please contact through the canvas website

COURSE DESCRIPTION

History of programming languages, formal models for specifying languages, design goals, run-time structures, and implementation techniques, along with a survey of principal programming language paradigms. (3)

PRE-REQUISITES AND CO-REQUISITES

COP 3530 Data Structures and Algorithms (or equivalent undergraduate course).

COURSE OBJECTIVES

Students will gain both a conceptual understanding of specification and design issues in programming languages and their implementation, and hands-on experience implementing a compiler or interpreter for a small programming language.

TEXTBOOKS AND SOFTWARE REQUIRED

TEXTBOOKS (RECOMMENDED)

Title: Programming Language Pragmatics
Author: Michael L. Scott
Publication date and edition: **2016, Fourth Edition** (earlier editions are NOT adequate)
ISBN 9780124104099

Title: Syntax and Semantics of Programming Languages
Author: Ken Slonneger and Barry Kurtz
This book is out of print but the author has graciously posted it online at
http://www.cs.uiowa.edu/~slonnegr/plf/Book
Chapters 1,3,5,8, and 11

SOFTWARE

Java (>= 16)
ASM (an open source java bytecode manipulation framework)
SMLNJ
Git
Chrome browser (for HonorLock proctoring of exams)

COURSE OUTLINE (GIVEN TOPICALLY RATHER THAN CHRONOLOGICALLY)

- Specification of programming languages
    - Syntax
    - Semantics
        - Operational Semantics
        - Denotational Semantics
        - Axiomatic Semantics
        - Attribute Grammars
- Issues in language design
    - Names, scope, and binding
    - Types
    - Control Flow
    - Control Abstractions
- Programming language paradigms
    - Data abstraction and object-oriented programming (examples: Java, Smalltalk, C++)
    - Non-imperative paradigms
        - Functional languages (examples: Scheme, ML, Haskell)
        - Logic programming (example: Prolog)
    - Dynamic and scripting languages (examples: lua, csh, Python, Ruby, Perl, tcl, etc.)
    - Concurrent programming (examples: Java, SR, OpenMP)

ATTENDANCE POLICY, CLASS EXPECTATIONS, AND MAKE-UP POLICY

Students in this course are adults and responsible for managing their own time. This means keeping up with the lectures and turning assignments in on time. Except as required by University policy, no extensions to deadlines will be granted and no makeup exams will be given.

Excused absences must be consistent with university policies in the Graduate Catalog (https://catalog.ufl.edu/graduate/regulations) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

EVALUATION OF GRADES

Exams 50%
      Midterm 15%
      Final exam 35%
Assignments 1-5   30%
      The two lowest scores from Assignments 1-5 will be dropped.
Assignment 6 will count 20% and may not be dropped.

GRADING POLICY

Grades will be curved.
More information on UF grading policy may be found at:

UF Graduate Catalog
Grades and Grading Policies

STUDENTS REQUIRING ACCOMMODATIONS

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

COURSE EVALUATION

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

IN-CLASS RECORDING

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

In COP5556 students are expected to work on assignments on their own or in assigned groups. All work turned in must be done by the student. The project is a cumulative project with each assignment using code that was turned in for previous assignments. Using another student's code from a previous assignment, even after it has been graded, is not permitted. Enabling cheating by other students is also not allowed. Sharing code directly, or posting assignments on a public repository is a violation of the honor code.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

• Your academic advisor or Graduate Program Coordinator
• Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources

Health and Wellness

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: https://counseling.ufl.edu, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

ACADEMIC RESOURCES

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.
Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling; https://career.ufl.edu.
Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources
Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.
Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.
Student Complaints Campus: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/;https://care.dso.ufl.edu.
On-Line Students Complaints: *https://distance.ufl.edu/state-authorization-status/#student-complaint.*