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Spring 2020

CS 280-010: Programming Language Concepts

Gerard Ryan

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CS 280: Programming Language Concepts
Syllabus, Spring 2020

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Spring 2019 Office Hours: Tue 4-5:30, Wed 4-5:30 or by appointment

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CS 280 - Programming Language Concepts
Conceptual study of programming language syntax, semantics and implementation. Course covers language definition structure, data types and structures, control structures and data flow, run-time consideration, and interpretative languages.

Textbook:

Robert Sebesta, Concepts of Programming Languages, 12th Edition. Pearson. ISBN 978-0-13-499718-6

Course Materials

All course materials, including lecture notes, assignments and solutions, will be posted on Canvas. All assignments will be submitted via Vocareum, which is linked from Canvas.

Course Format

CS280 is being taught in lecture/lab format. Lectures will be held on Wednesdays, and lab sections will meet on Mondays. Work that is assigned at a lab session will be due by midnight on Tuesday. It will be graded and is part of your final course grade.

In most cases, work in lab will be done online. Therefore, every student should bring their laptops to their Monday lab section.

Grading:

Programming Assignments	40%
Recitation Assignments	9%
Midterm	18%
Final	33%

A student who does not submit two or more programming assignments will receive an F for this course. A student who does not do all of the programming assignments cannot receive an A for this course.

You will have one calendar week from when a grade for any assignment or exam is posted on Canvas to raise any questions that you may have about your grade. After that time, I will not discuss any grading changes.

The common midterm on March 9, and the final exam, MUST be taken by all students and cannot be rescheduled.

Notes:

When you communicate with me by email, please include CS280 in the Subject: line of any email you send me. If you have a question or comment of general interest, feel free to post it on the Announcements on the Canvas page for the class.

You are responsible for any material that you miss if you don't attend a lecture.

If you need accommodations due to a disability please contact Chantonette Lyles, Associate Director of Disability Support Services, Fenster Hall Room 260 to discuss your specific needs. A Letter of Accommodation Eligibility from the Disability Support Services office authorizing your accommodations will be required.

Topics:

- Common features of programming languages
- Language Syntax
- Grammars
- Names
- Types
- Semantics
- Expressions and Control Flow
- Subprograms
- Memory Management
- Event Handling
- Concurrency

Goals for the Course:

The student will be able to recognize similar features of different programming languages.

The student will have an easier time learning new programming languages.

The student will gain an appreciation of the strengths and weaknesses of different programming languages.

The student will demonstrate an ability to apply knowledge of computing and mathematics appropriate to the discipline.

The student will demonstrate an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.

The student will demonstrate an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.

The students will recognize the need for and an ability to engage in continuing professional development.

The student will demonstrate an ability to use current techniques, skills, and tools necessary for computing practice.

Academic Integrity:

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Notes on Programming Assignments:

- All programming assignments must be written in C++.

- There will be a weekly partial submission required for each assignment, prior to the final due date.

- You will NOT need to submit a printout of your code.

- All programming projects must be submitted electronically via Vocareum (a link to each assignment will be on Canvas). You may edit your code in Vocareum OR you may upload code from elsewhere. However, please note that **The code submitted in Vocareum is what will be graded.**

- Vocareum has buttons to allow you to build, run, and submit your code.

- You may press the submit button for your assignments as often as you like. Only the last submission will be graded. The time that you press the submit button is the time recorded for when you submitted your work.

- Every file should include a block of identifying comments at the top of each file.

- Each programming assignment will be graded on a scale of zero to 10.

- If you miss the due date for a part of the assignment (Wednesday at 11:59PM), you will be charged a late penalty of 30% of the points available for submission. Submissions will not be accepted past noon on the following Sunday, and you will get zero points for that submission.

- Please note that emailed submissions will NOT be accepted.

- If your program does not compile, or if it compiles but is a main that does nothing, it will be graded as if you did not do the assignment.

- Partial answers or incorrect output will reduce your grade.

- Vocareum has cheat detection software built into it. Be warned that I'll be using it.

- **A student who does not submit two or more of programming assignments 1-4 will receive an F for this course. A student who does not do all of the programming assignments can not receive an A for this course.**

Course Outline:

- Introduction [chapter 1 + 2]
- Lexical and Syntax Analysis [chapter 3 & 4]

- Names [chapter 5]
- Types [chapter 6]
- Expressions [chapter 7]
- Statements + Subprograms [chapter 8-10]

- Encapsulation and ADTs [chapter 11]
- Object Oriented Programming [Chapter 12]
- Memory Management

Note that exams are cumulative.

Important Dates

19-Feb	Program 1 Complete
9-Mar	Common Midterm
25-Mar	Program 2 Complete
15-Apr	Program 3 Complete
29-Apr	Program 4 Complete
8-May - 15-May	FINALS WEEK

REVISION IN RESPONSE TO COVID-19

As a result of the Novel Coronavirus, and in response to statewide lockdowns of public institutions and universities, CS280 switched to 100% online course delivery.

All classes are conducted using Webex, on the regular schedule. All office hours are maintained and are conducted online.

Additional time has been granted for student work when requested. The course final exam is modified to incorporate authentic assessment instead of proctored closed book exams; future semesters may adopt this model and continue the use of such assessments.