



Davis & Elkins College
Course Syllabus

Course Number - Title: CSCI 201 – Programming Languages
Department: Mathematics, Computer Science, and Physics

Instructor: Steve Mattingly
Office/Office Hours: SC 409 / MWF 2:00 – 3:00 p.m., TR 11:00 a.m. – noon
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Academic Term: Fall 2019
Days/Time/Room: TR 1:25 – 2:40 p.m. / SC 102
Credits/Prerequisites: 3 / CSCI 180 and 190

Course Description (catalog description or more detailed description):

In this course, each student learns a programming language of his or her choice. Using these languages as case studies, students collaborate on a comparative study of programming language topics: syntax, semantics, type systems, control structures, language translation, and programming paradigms. This course may be repeated for credit if a different programming language is selected.

Learning Outcomes

By the end of this course, students will be able to:

1. Categorize programming languages according to their implementation models: compilation, interpretation, hybrid
2. Categorize programming languages according to their approaches to typing, binding, and scoping
3. Categorize programming languages according to their argument passing modes
4. Categorize programming languages according to paradigms such as procedural, object-oriented, functional
5. Explain semantic distinctions between different control structures, data types, etc.
6. Integrate a comprehensive set of development tools for a selected programming language
7. Write regular expressions and BNF grammars to define languages
8. Write programs that perform linguistic processing

Required Texts/Materials

Code Complete (second edition), Steve McConnell. ISBN 0-7356-1967-0.

Grading

Your day-to-day work will consist of:

- guided activities, completed in class, that will be evaluated for correctness and completeness; and
- independent work (mostly out of class programming) that will be evaluated using criteria to be covered in class. You will have a great deal of choice in the particular assignments that you complete.

I will focus on providing plenty of feedback on the strengths and weaknesses of this work, rather than quantifying its properties in ways that may be counterproductive.

You will select portions of your work for a “portfolio”, organized around the Learning Outcomes listed in this syllabus. You and I will periodically review this portfolio as evidence of your progress toward the Learning Outcomes.

Shortly before the deadlines for midterm and final grade reports, you will evaluate your portfolio of evidence on the college’s A – F grading scale, and to explain your reasoning. If your evaluation is different from mine, we will work to better understand that difference, though the ultimate grade decision is mine.

If you would like to discuss A – F course grades at other times, simply ask.

Course Policies

Attendance: “All students must attend every class or laboratory unless officially excused. Excused absences include representing the College, participating in approved field trips, illness, a family emergency or others as determined by the instructor. Students will be responsible for all course work missed while absent. Absences in classes immediately before and after holidays are unexcused.”

Please keep your absences to a minimum, and communicate with me about any unusual circumstances that are affecting your attendance. I do not directly penalize you due to absences, but if I have done my job well, then class meetings are valuable learning experiences, and the natural outcome of poor attendance will be reduced learning.

Late and Make-up Assignments: There are no deadlines for individual course assignments. Instead, you will work throughout the semester to build a portfolio of evidence that you have achieved the course Learning Outcomes. The only firm deadlines are based on the college’s deadlines for instructors’ grade reports (see below).

Classroom Courtesy: Please use our classroom time to maximize learning benefit for you and your classmates. For example:

- prepare as thoroughly as you can
- arrive on time (nearly) every day
- devote your full attention to class activities for the entire period
- take responsibility for your own performance and improvement
- contribute to the group’s learning activities
- avoid distracting use of personal electronics

Academic Honesty: Davis & Elkins College expects its students to pursue their academic careers with integrity. By policy, teachers report instances of cheating and plagiarism to the Dean of Faculty and recommend a penalty, which may be an F on the assignment in question or even expulsion from the course or the College.

Academic Support: The Naylor Learning Center provides academic support by providing tutorial services, the Supported Learning Program and Disability services. Contact The Naylor Learning Center at extension 1384 for more information.

Davis & Elkins College, in compliance with Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the West Virginia Human Rights Act is an equal opportunity institution that does not discriminate on the basis of race, color, sex, religion, ancestry, national origin, age, sexual orientation, disability, veteran status, gender identification, or genetic information or any other characteristic protected by federal, state or local law.

Davis & Elkins complies with federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 190 and Title IX of the Educational Amendments of 1972.

If you have a disability and need a reasonable accommodation for equal access to education or services at Davis & Elkins College, please contact Disability Services at extension 1384. If you believe that you or someone else has been the victim of discrimination or harassment at Davis & Elkins College, you may contact your advisor or the Title IX/ADA Section 504 Coordinator at extension 1277.

Davis & Elkins College faculty members are designated as “responsible employees” in accordance with guidance from the Office of Civil Rights. As such, D&E faculty must report any observations or disclosures (by a member of the D&E community) of gender-based harassment, gender-based abuse, or gender-based violence or related experiences and incidents shared with them to the Title IX Coordinator.

Important Dates

Your evaluations of your portfolio of evidence are due on October 3 and December 3.

Date	Assigned reading
Thu Aug 22	Hello, world!
Tue Aug 27	Hello, <your name here>!
Thu Aug 29	Chapter 10: General Issues in Using Variables
Tue Sep 03	Chapter 12: Fundamental Data Types
Thu Sep 05	Chapter 33: Personal Character
Tue Sep 10	Chapter 13: Unusual Data Types
Thu Sep 12	Chapter 11: The Power of Variable Names
Tue Sep 17	Lexical Analysis and Regular Expressions

Date	Assigned reading
Thu Sep 19	<u>Weak vs. Strong Typing, Static vs. Dynamic Typing</u>
Tue Sep 24	<u>Chapters 15, 19: Using Conditionals</u>
Thu Sep 26	<u>Chapter 31: Layout and Style</u>
Tue Oct 01	<u>Syntax Analysis and Context Free Grammars</u>
Tue Oct 08	<u>Chapters 16, 19: Controlling Loops</u>
Thu Oct 10	<u>Chapter 17: Unusual Control Structures</u>
Tue Oct 15	<u>How to Write a Lexer</u>
Thu Oct 17	<u>Finishing the Parser</u>
Tue Oct 22	<u>Chapter 7: High Quality Routines</u>
Thu Oct 24	<u>Abstract Data Types and Programming Paradigms</u>
Tue Oct 29	<u>Chapter 6: Working Classes</u>
Thu Oct 31	<u>Interpretation is Simulation, Compilation is Translation</u>
Thu Nov 07	<u>Functional Programming</u>
Tue Nov 12	<u>Logic Programming</u>