

Computer Science 403

Programming Languages

Syllabus

Catalog listing: CMSC 403
Course Level: Undergraduate
Prerequisites: CMSC 256 with a grade of C or better and CMSC 303
Instructor: Zach Whitten

Office: Engineering East E2236
Email: zwhitten@vcu.edu
Classroom: Engineering West 301
Class website: Blackboard

Office Hours: Tuesday 11:00am – 1:00pm (or by appointment)

1.0 – Overview (Catalog Course Description):

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 with a grade of C or better and CMSC 303. Survey of representative modern programming languages. Formal definition of programming languages including specifications of syntax and semantics. Precedence, infix, prefix and postfix notation. Global properties of algorithmic languages. Sub-routines, co-routines and tasks. List processing, string manipulation, data description and simulation languages. Run-time representation of program and data structures.

2.0 – Course Structure:

Lecture hours/week – 3
Lab hours/week – 0

3.0 – Course Goals

Upon successful completion of this course, the student will be able to understand concepts in the design of programming languages and implement programs in different types of languages.

4.0 – ABET Criteria Addressed:

2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

Other Criteria Addressed:

- Substantial coverage of algorithms and complexity, computer science theory, concepts of programming languages, and software development.
- Substantial coverage of at least one general-purpose programming language.
- The study of computing-based systems at varying levels of abstraction.

5.0 – Major Topics Covered:

- Language design criteria
- Syntax, semantics, and parsing
- Symbol table and the environment
- Example of functional programming approach
- Example of object-oriented programming approach

6.0 – Textbook: N/A

7.0 – Class Schedule:

Lecture: MWF 12:00-12:50pm, Engineering West, Room 301

8.0 – Evaluation:

General Instructions:

1. ! All assignments must be uploaded to Blackboard on or before the due date specified. Only files submitted to Blackboard on or before the due date will be considered for grading. Requests to re-grade assignments must be made with two weeks from the date the assignment grade is posted in Blackboard, requests after this time will be denied.
2. ! Late assignments will be penalized 10 points for every 12 hours they are late.
3. ! No makeup exams will be given unless special permission has been given prior to the date of the test. Request to adjust scores or re-grade tests must be made at the end of the class meeting in which the test is returned, requests after this time will be denied.
4. ! **All assignments are to be individual efforts.** This does not preclude the discussion of techniques to be used or ideas for algorithms. In addition, it is

permissible to help each other find syntax errors or minor logic errors. However, the actual correction of such errors is up to the author of the program.

5. ! Do your own work. **Plagiarism applies to all assignments and source code as with any other intellectual property. Plagiarized material is a form of cheating and will be treated as such.**

Grading:

Category	% weight
Homework assignments	50
Exam 1	10
Exam 2	10
Exam 3	10
Final exam	20

Grading scheme:

- A: $\geq 90\%$
- B: $\geq 80\%$ and $< 90\%$
- C: $\geq 70\%$ and $< 80\%$
- D: $\geq 60\%$ and $< 70\%$
- F: $< 60\%$

9.0 – Extra Credit:

There will be two class wide opportunities for extra credit this semester:

1. Student Evaluations:

If over 80% of the class completes the course evaluations provided by VCU, 10 points of extra credit will be rewarded to all. The dates for these evaluations are to be determined.

2. Voting:

Election day this year is November 5th. Any student who provides evidence of casting a ballot will receive 25 points of extra credit. This evidence must be uploaded to Blackboard by Nov. 6th at midnight. (Please do not use your *completed* ballot as evidence!)

Important deadlines:

- Deadline to register to vote, or update an existing registration, is Tuesday, October 15, 2019.
- Deadline to request an absentee ballot to be mailed to you is Tuesday, October 29, 2019. Your request must be received by your Registrar by 5:00 p.m.

- Deadline to vote in-person absentee is Saturday, November 2, 2019

For any questions about this policy or about casting a ballot, please contact me or go to www.elections.virginia.gov

Campus emergency information

- Sign up to receive at alert.vcu.edu/signup/. It is essential to keep your information up-to-date within VCU Alert and to keep your permanent address and emergency contact information current in eServices.
- VCU uses a variety of communication methods to alert the campus community about emergency situations and safety threats. Learn more about types of alerts at alert.vcu.edu/know/typesofalerts.php
- Know the emergency phone number for the VCU Police (828-1234), and report suspicious activities and objects.

Class registration required for attendance

Students may attend only those classes for which they have registered. Faculty may not add students to class rosters or Blackboard. If students are attending a class for which they have not registered, they must stop attending.

Honor System: upholding academic integrity

The VCU Honor System policy describes the responsibilities of students, faculty and administration in upholding academic integrity. According to this policy, "Members of the academic community are required to conduct themselves in accordance with the highest standards of academic honesty, ethics and integrity at all times." Students are expected to read the policy in full and learn about requirements here: <https://conduct.students.vcu.edu/vcu-honor-system/>

Important dates

Important dates for the semester are listed in the VCU Academic Calendar: <https://academiccalendars.vcu.edu/>

Managing stress

Students may experience situations or challenges that can interfere with learning and interpersonal functioning including stress, anxiety, depression, alcohol and/or other drug use, concern for a friend or family member, loss, sleep difficulties, feeling hopeless or relationship problems. There are numerous campus resources available to students including University Counseling Services (804-828-6200 MPC Campus, 804-828-3964 MCV Campus), University Student Health Services (MPC 804 828-8828, MCV Campus 804 828-9220) and the Wellness Resource Center (804-828-9355). 24 hour emergency mental health support is available by calling 828-1234 and asking to speak to the on-call therapist or utilizing the National Suicide Prevention Lifeline (1-800-784-2433).

Mandatory responsibility of faculty members to report incidents of sexual misconduct

All employees, including faculty, department chairs and deans, are required to report any incidents of sexual assault, sexual exploitation and partner or relationship violence to the university's Title IX Coordinator.

Confidential offices which can provide support at VCU are: University Counseling Services (804) 828-6200

For more information about Title IX, please visit please visit <https://equity.vcu.edu/>.

Military short-term training or deployment

If military students receive orders for short-term training or for deployment/mobilization, they should inform and present their orders to Military Student Services and to their professor(s). For further information on policies and procedures contact Military Student Services at 828-5993 or access the corresponding policies.

Student email standard

Email is considered an official method for communication at VCU. Students are expected to check their official VCU email on a frequent and consistent basis (the university recommends daily) in order to remain informed of university-related communications. Students are responsible for the consequences of not reading, in a timely fashion, university-related communications sent to their official VCU student email account. Mail sent to the VCU email address may include notification of university-related actions, including disciplinary action. Students must read this standard in its entirety at <https://ts.vcu.edu/media/technology-services/content-assets/university-resources/ts-groups/information-security/StudentEmailStandard.pdf>

Student financial responsibility

Students assume the responsibility of full payment of tuition and fees generated from their registration, all charges for housing and dining services and other applicable miscellaneous charges. Students are ultimately responsible for any unpaid balance on their account as a result of the University Financial Aid Office or their third party sponsor canceling or reducing their award(s).

Students representing the university – excused absences

Students who represent the university (athletes and others) do not choose their schedules. All student athletes should provide their schedules to their instructors at the beginning of the semester. The Intercollegiate Athletic Council strongly encourages faculty to treat missed classes or exams (because of a scheduling conflict) as excused absences and urges faculty to work with the students to make up the work or exam.

Students with disabilities

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, as amended, require that VCU provide "academic adjustments" or "reasonable accommodations" to any student who has a physical or mental impairment that substantially limits a major life activity. To receive accommodations, students must register with the Office of Student Accessibility and Educational Opportunity on the Monroe Park Campus (828-2253) or the Division for Academic Success on the MCV campus (828-9782). Please also visit the Student Accessibility and Educational Opportunity website via <https://saeo.vcu.edu/> and/or the Division for Academic Success website via <https://das.vcu.edu/> for additional information.

Once students have completed the registration process, they should schedule a meeting with their instructor (s) and provide their instructor (s) with an official accommodation letter. Students should follow this procedure for all courses in the academic semester.

Withdrawal from classes

Before withdrawing from classes, students should consult their instructor as well as other appropriate university offices. Withdrawing from classes may negatively impact a student's financial aid award and his or her semester charges. To discuss financial aid and the student bill, visit the Student Services Center at 1015 Floyd Avenue (Harris Hall) and/or contact your financial aid counselor regarding the impact on your financial aid.

Faculty communication about students

VCU instructional faculty, administrators and staff maintain confidentiality of student records and disclose information in accordance with the Family Educational Rights and Privacy Act (FERPA). This means that VCU officials may disclose student record information without the consent of the student in certain situations. To support university

operations, for example, VCU officials share information about students with other educational officials as necessary to perform their job duties. FERPA permits this disclosure to school officials who have a legitimate educational interest in the student information. In addition, VCU officials have obligations to report information shared by a student depending on the content of that information, for example, in compliance with VCU's policy on the duty to report. Unless FERPA permits a certain disclosure, VCU generally requires consent from a student to disclose information from their education record to another individual. You may find additional information on the VCU FERPA website: <http://rar.vcu.edu/records/family-educational-rights-and-privacy-act/>.
