

CSC 201
Computer Science I
Course Syllabus

Instructor	Jeffrey Elkner
Session	Spring 2020
Meeting Days	B Day
Time	11:05 am - 12:30 pm
Location	Arlington Career Center Room 508
Contact	jeffrey.elkner@apsus.va / jde232@email.vccs.edu

Course Description:

Introduces algorithm and problem solving methods. Emphasizes structured and especially object oriented programming concepts, I/O, control structures, functions and/or methods, data abstraction, data structures, and the study and use of an object technology high-level programming language.

General Course Purpose:

The main part of this course covers problem analysis and solution methods, algorithm development, program design methodologies, programming constructs, methods of documentation, and good programming style. Other topics, such as computer systems, data representation, and information flow are introduced as appropriate. In this course the student learns the theory of problem solving and program construction. A high-level computer language is taught for the students to implement their solutions on a computer.

Course Prerequisites/Co-Requisites:

Prerequisite: CSC 200 or CSC 130 or a grade of C in MTH 173 or MTH 263.
Corequisite: MTH 263 or division approval.

Course Objectives:

Upon completion of this course, the student will be able to:

- A. Analyze Problems
- B. Develop Algorithms in an Object Oriented Environment

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Major Topics to be Included:

- I. Review of algorithm theory and structured programming
 - A. Program design
 - B. Program logic
 - C. Modularity: Functions / methods and information passing
 1. Call-by-value
 2. Overloading
- II. Object Oriented Programming
 - A. Objects and classes
 - B. Object initialization
 - C. Memory allocation
 - D. Encapsulation and data hiding
 - E. Inheritance
 - F. Polymorphism
 - G. Abstract Classes
- III. Input / output
 - A. File I/O
 - B. Text files
 - C. Binary files
 - D. Object serialization
- IV. Data structures
 - A. Sequences
 - B. Maps and sets
 - C. Arrays
- V. Event Model
 - A. Event driven programming
 - B. Containers and widgets
 - C. Layout strategies
- VI. Optional Topics

Required Instructional Materials:

- *Head First Java, 2nd Edition*
- *Head First Android Development*

Course Credit: 4 Credits

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Policies:

I. Expectations

- a. Introduction to Computer Science I is a rigorous, college level course that will require sustained and consistent engagement from students.
- b. An average of 90 minutes of homework will be assigned for each 90 minutes in class. We will be utilizing a flipped classroom learning environment, where the lecture portion of the course material will be viewed individually at home *before* class meets, and class time will be used for collaborative engagement and discussion.
- c. "Mini quizzes" at the beginning of class will be used to be sure homework readings and practice have been completed. To be successful in this class, students will be expected to be prepared for these quizzes when they arrive in class.

II. Grading Policies

- a. Grading Scale
A= 100 - 90 B= 89 - 80 C= 79 - 70 D=69 - 60 F= 59 and below
- b. Students will receive a weekly cumulative letter grade that will incorporate daily quizzes, tests, projects, and presentations. These weekly evaluations can be challenged by the student, *but only during the week immediately following when the evaluation is given.*
- c. The average of the weekly evaluations will make up 70% of the final grade, with the course final exam making up 30%.
- d. In cases where district grading policies conflict with college grading policies, the high school and college grades may differ; this may include assignment/test retakes, extended assignment due dates, capped minimum grade allowed, among other such district policies.
- e. It is important that students check their final NOVA grades in Blackboard as soon as the course(s) completed.

III. Course Policies

a. Academic Integrity

- i. The College does not tolerate academic dishonesty. Students who are not honest in their academic work will face disciplinary action along with any grade penalty the instructor imposes. Procedures for disciplinary measures and appeals are outlined in the Student Handbook (<http://www.nvcc.edu/students/handbook/>). In extreme cases, academic dishonesty may result in dismissal from the College.
- ii. **Plagiarism:** is the act of appropriating passages from the work of another individual, either word for word or in substance, and representing them as one's own work. This includes any submission of written work other than one's own. In short, plagiarism means using the exact words, opinions, or factual information from another person without giving that person credit. Students who are not honest in their academic work will face disciplinary action along with any grade penalty the instructor imposes. For more information about student academic integrity: <https://www.nvcc.edu/curcatalog/policies/integrity.html>.

b. Disabilities

- i. Students with disabilities are required to contact NOVA's Office of Disability Support Services (DSS) to discuss possible accommodations. All information is kept confidential and may increase your chances of success in the academic setting. If accommodations are agreed upon, student

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will receive a Memorandum of Accommodation (MOA) by DSS. For more information about NOVA’s DSS office: <https://www.nvcc.edu/disability-services>.

c. Self-Advocacy

- i. Students are expected to reach out to their instructor if they do not understand content or expectations.
- ii. College instructors and other college personnel will not talk with a parent without the permission of and presence of the student. The conversation is between the administrator / faculty member and the student. The parent’s role is to listen, give moral support, and summarize information and agreements if needed.
- iii. Dual enrolled students have access to full NOVA campus services to include tutoring, library, and counseling services; student resources are found here: <http://www.nvcc.edu/students/index.html>

Course Schedule

a. Critical Course Dates

Course Start Date	Monday, February 3, 2020
Course Drop Date	Friday, February 21, 2020
Course Withdrawal Date	Friday, April 24, 2020
Final Exam Date	Week of June 15 to 19, 2020
Course End Date	Friday, June 19, 2020

- b. Final Exam Date:** *The final exam will be given during the last week of class, between Monday, June 15 and Friday, June 19.*