

CSC 205 (D01A)
Computer Organization
Course Syllabus

Instructor	Jeffrey Elkner
Session	Fall 2021
Meeting Days	B Day
Time	11:05 am - 12:30 pm
Location	Arlington Career Center Room 512
Contact	jde232@email.vccs.edu

Course Description:

Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization using a simple assembly language. Includes processors, instruction execution, addressing techniques, data representation, and digital logic. 3 Credits.

General Course Purpose:

The course should stress the hierarchical structure of a computer. It should incorporate a simple assembly language to serve as an example of how the various components interact. The logic design part of the outline is specific and essential to this course. The functional logic design level is emphasized rather than circuit details, which will be covered in engineering courses. The functional level provides the student with an understanding of the mechanics of information transfer and control within the computer system.

Course Prerequisites/Co-Requisites:

Prerequisite: CSC 201

CSC 205 (D01A)
Computer Organization
Course Syllabus

Major Topics to be Included

- I. Introduction/review
 - A. Number representation and arithmetic
 1. Binary, octal, and hexadecimal numbers
 2. One's and two's complements and other representations
 3. Addition and subtraction
 - B. Boolean algebra and truth tables
- II. Multi-level machine organization
 - A. Structural overview
 - B. Digital logic and integrated circuits
 1. Boolean functions
 - a) Gates
 - b) Functions
 - c) Simplification
 2. Integrated circuits
 - a) Combinational circuits (including adders, shifters, decoders, multiplexers, ROM's)
 - b) Flip-flops
 - c) Sequential circuits (including registers, counters, RAM)
 - C. Micro-programming
 - D. Machine language level
 - E. Overview of assembly language
 - F. Memory management
 1. Virtual memory
 2. Paging
 3. Segmentation
- III. Other topics or enhance the above (optional)

Required Instructional Materials:

- The [Altair 8800 Operator's Manual](#)

Course Credit: 3 Credits

CSC 205 (D01A)
Computer Organization
Course Syllabus

Time Allocation per Topic

The following table has the breakdown of the time in this course that will be spent on each course topic:

Ref	Topic	Hours	Percentage
I.A	Number representation and arithmetic	3	6%
I.B	Boolean algebra and truth tables	5	10%
II.A	Structural overview	6	13%
II.B.1	Boolean functions	3	6%
II.B.2	Integrated circuits	3	6%
II.C	Micro-programming	6	13%
II.D	Machine language level	3	6%
II.E	Overview of assembly language	3	6%
II.F	Memory management	3	6%
III	Other optional content or Enhance the above	9	19%
	Exams and Quizzes (NOT including final exam)	4	8%
	Total:	48	100%

CSC 205 (D01A)
Computer Organization
Course Syllabus

Policies:

I. 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 holistic letter grade that will incorporate classwork, 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 as soon as the course is completed.

II. 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. Attendance Policy

Regular attendance is essential for success in Web Page Design I. Absences in which work is not made up either in the week in which they occur or the following week will be reflected in the weekly cumulative grade.

c. Disabilities

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

d. 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.

CSC 205 (D01A)
Computer Organization
Course Syllabus

- iii. Dual enrolled students have access to full NOVA campus services including tutoring, library, and counseling services; student resources are found here: <http://www.nvcc.edu/students/index.html>
- e. **Office of Wellness and Mental Health**
During your time at NOVA, you may experience challenges including struggles with academics, finances, or your personal well-being. NOVA has support resources available. If you are seeking resources and support or if you are worried about a friend or classmate: <https://www.nvcc.edu/wellness/index.html>
- f. **Course Drop and Withdrawal Policy**
 - i. Please note two important dates related to your enrollment in a course:
 - The *drop date* (also known as census date) for a course is the last day to drop a course
 - The *withdrawal date* is the last day to withdraw without grade penalty
 Dropping a course before the drop date will not appear on your NOVA transcript. Dropping a course after the drop date and before the withdrawal date will result in a 'W' grade appearing on your transcript. To identify these dates for your dual enrollment course, please see below on the 'Course Schedule' chart or log into your myNOVA account and SIS.
 - ii. Withdrawal Process
 - Dual enrolled students are responsible for requesting to withdraw (Form 125-03) from their DE classes, using the following link: <https://dashboard.nvcc.edu/Forms/125-03>
 - Dual enrolled students will use their myNOVA credentials to access the withdrawal form and will select one or more enrolled DE classes to withdraw.
 - The withdrawal form is then routed to the assigned DE instructor and the Office of Dual Enrollment for review and approval.
 - Check your VCCS email for the status of your request.
- g. **Communication**
Students are likewise required to use their VCCS email accounts (____@email.vccs.edu) to communicate with college personnel and should check their email accounts regularly.
- h. **Title IX**
Title IX is a civil rights law that prohibits discrimination on the basis of sex in educational programs, activities, admission and employment. Complaints of sex-based discrimination, sexual violence, domestic violence, and sexual or gender-based harassment are governed by the Title IX Policy. For more information about Title IX or to make a report: <https://www.nvcc.edu/titleix/index.html>.

III. Course Schedule

a. Critical Course Dates

Course Start Date	Monday, August 30, 2021
Course Drop Date	Tuesday, September 21, 2021
Course Withdrawal Date	Monday, November 29, 2021
Final Exam Date	Week of January 24 to 28, 2022
Course End Date	Friday, January 28, 2022

- b. **Final Exam Date:** *The final exam will be given during the last week of class, between Monday, January 24 and Friday, January 28.*