

## CSCI 135/136 ANALYSIS & DESIGN 1 HUNTER COLLEGE CITY UNIVERSITY OF NEW YORK

In these two courses, both of which are required to graduate with a computer science major, you will learn principles of programming, analysis, and design and gain a deep practical knowledge of C++.

[CSCI 135 Syllabus](#)

[CSCI 136 Syllabus](#)

[Gradescope](#)

[Coding Style Guide](#)

**Text:** [Cay Horstmann, Brief C++, 3rd ed. eText](#) – please rent the eText for one semester from here – do not buy or rent it from Amazon or Kindle store – you will not get access to the necessary interactive material!

**Linux on Windows Tutorial:** [https://okunhardt.github.io/documents/Installing\\_WSL.pdf](https://okunhardt.github.io/documents/Installing_WSL.pdf)

**Tutoring:** The tutors for this course are available in the Open Lab Session on BlackBoard Collaborate of CSCI 135. This session runs all week:

Mondays: 11:00 AM – 7:00 PM

Wednesdays: 8:00 AM – 7:00 PM

Tuesdays, Thursdays, and Fridays: 11:00 AM – 6:00 PM

The tutors are there to help you with all of your labs, assignments, and projects! Get as much help as you need.

**Lecture: Monday, Wednesday, Thursday 12:10 – 1:00 PM on BlackBoard Collaborate**

**Lecture Instructor:** Genady Maryash HN1047 Office hours: Wednesdays 1:00 – 3:00 PM on BlackBoard Collaborate, [gmaryash@hunter.cuny.edu](mailto:gmaryash@hunter.cuny.edu)

**Email Questions** You must get hands-on programming help in person during your lab or from tutors in lab B. We will never debug your code over email. You should ask questions during the lab and the lecture. All other email questions must be sent to your lab instructor listed below. You must always include your section, name of lab instructor, your name and EMPLID.




Section	Lab in HN 1001C	Instructor	E-mail
136.01	Mo 1:10 – 3:00 PM	<i>Minh Nguyen</i>	<a href="mailto:minh.nguyen@hunter.cuny.edu">minh.nguyen@hunter.cuny.edu</a>
136.02	Mo 3:10 – 5:00 PM	<i>Minh Nguyen</i>	<a href="mailto:minh.nguyen@hunter.cuny.edu">minh.nguyen@hunter.cuny.edu</a>
136.03	Mo 5:10 – 7:00 PM	<i>Minh Nguyen</i>	<a href="mailto:minh.nguyen@hunter.cuny.edu">minh.nguyen@hunter.cuny.edu</a>
136.05	We 8:10 - 10:00AM	<i>Subhadarshi Panda</i>	<a href="mailto:spanda@gradcenter.cuny.edu">spanda@gradcenter.cuny.edu</a>




136.06	We 10:10 - 12:00C	<i>Subhadarshi Panda</i>	spanda@gradcenter.cuny.edu
136.11	We 10:10 - 12:00B	<i>Hirohiko Kushida</i>	hkushida1@gradcenter.cuny.edu
136.07	We 3:10 – 5:00 PM	<i>Jaspal Singh</i>	Jaspal.Singh62@myhunter.cuny.edu
136.08	We 5:10 – 7:00 PM	<i>Shadman Quazi</i>	Shadman.Quazi62@myhunter.cuny.edu
136.09	Th 1:10 – 3:00 PM	<i>Melissa Lynch</i>	lynch.melissat@gmail.com
136.10	Th 3:10 – 5:00 PM	<i>Melissa Lynch</i>	lynch.melissat@gmail.com

## COURSE OUTLINE

DATE	TOPIC	READING: Brief C++	SLIDES	DUE DATE
1/27	Syllabus Gradescope eText features <b>C++ Review</b>	1.3 Machine Code and Programming Languages 1.5 Analyzing Your First Program 1.6 Errors 1.7 HW Algorithm Design	1.5 1.6 1.7	<b>E1.7 1/27</b> <b>LAB 1 Intro to Linux and to C++ 2/3</b>
1/29	<b>Introduction Fundamental Data Types</b>	2.1 Variables	2.1	WE 2/3 WE 2/3 <b>E2.10 1/29</b>
1/30		2.2 Arithmetic <b>2.4 PS First Do It By Hand</b>	2.2	<b>PS 2/3</b> <b>Project 1A 2/3</b>
2/3		2.3 Input and Output	2.3-4	<b>LAB 2 Loops and Arrays 2/3</b> <b>Project 1B 2/3</b>
2/5	<b>Strings</b>	2.5 Strings	2.5	
2/6	<b>Arrays</b>	6.1 Arrays	6.1	<b>Project 1C 2/6</b>
2/10	<b>Loops</b>	4.1 The <code>while</code> Loop <b>4.2 PS Hand-Tracing</b>	4.1	<b>LAB 3 File I/O and Process Data 2/10</b> <b>PS 4/10</b> <b>E4.8 2/10</b>
2/13		4.3 The <code>for</code> Loop 4.4 The <code>do</code> Loop 4.5 Processing Input	4.2-3 4.4-5	<b>Project 1D 2/13</b> WE 2/13

DATE	TOPIC	READING: Brief C++	SLIDES	DUE DATE
2/19	<b>More Loops</b>	<b>4.6 PS Storyboards</b> 4.7 Common Loop Algorithms	4.6-8	WE 4 WE 4
2/20		4.8 Nested Loops <b>4.9 PS Solve a Simple Problem First</b> 4.10 Random Numbers and Simulations 3.7 Boolean Variables and Operators	4.9-10 Squares Montecarlo 3.7	<b>LAB 4 File I/O</b> <b>Process Data</b> 3 <b>PS 4</b> <b>PS 4</b>
2/24	<b>Decisions</b>	3.1 The <code>if</code> Statement 3.2 Comparing Numbers and Strings 3.3 Multiple Alternatives 3.4 Nested Branches 3.8 Application: Input Validation	3.1 3.2 3.3-4 D.M.L. 3.8	<b>E3.1</b> 2/ WE 3 <b>PS 3</b> <b>PS 3</b>
2/26	<b>Functions</b>	5.1 Functions as Black Boxes	5.1-3	<b>E3.5</b> 2/ WE 5
2/27		5.2 Implementing Functions 5.3 Parameter Passing 5.4 Return Values 5.5 Functions without Return Values <b>5.6 PS Reusable Functions</b>	Viz Pyramid 5.4-6	<b>LAB 5 Functions and</b> <b>Prime Numbers</b> 3 <b>E5.6</b> 3 WE 5 <b>PS 5</b>
3/2	<b>Scope Static Vars</b>	5.7 PS: <i>Stepwise Refinement</i> 5.8 Variable Scope and Global Variables ↪ Static Variables	5.7 5.8 StatVar Run Code	WE 5 <b>PS 5</b>
<b>3/4</b>	<b>MIDTERM EXAM 1</b>	<b>WEDNESDAY 3/4</b>		
3/5	<b>Streams</b>	8.1 Reading and Writing Text Files	8.1	<b>LAB 6 Strings and</b> <b>Cipher</b> <b>E8.1</b> Delay
3/9	<b>Pass by Reference</b>	5.9 Reference Parameters Introduction to Project 2	5.9 Coffee	<b>Project 2 A</b> 3/ <b>E5.14</b> 3/
3/11			Code By Value By Ref.	<b>Project 2 B</b> 3/ <b>E5.15</b> 3/

DATE	TOPIC	READING: Brief C++	SLIDES	DUE DATE
3/19	<b>Arrays</b>	6.1 Arrays 6.2 Common Array Algorithms 0's, Squares, Copy, Sum, Avg, Min, Max, Search, Remove unordered	6.1 6.2	<b>LAB 7 Automata</b> <b>Style</b> 4/ <i>Binary Search</i>
3/23		Remove ordered, Insert unordered, Insert ordered, Read inputs and find largest, 6.3 Arrays and Functions Array functions	 6.3	<b>E6.8</b> 4/ <b>Project 2 C</b> 4/ <i>Selection Sort</i>
3/25		6.4 PS: <i>Adapting Algorithms</i>	 6.4-5	PS 6 WE 6 WE 6
3/26		6.5 PS: <i>Discovering Algorithms by Manipulating Physical Objects</i> 6.6 Two-Dimensional Arrays Print 2D array	6.6 	PS 6 <b>E8.1</b> 4/
4/2	<b>Pointers</b>	7.1 Defining and Using Pointers Pointers Example	7.1 Ptrs 	<b>E7.1</b> 4/ <b>LAB 8 Image</b> <b>Processing</b> 4/ <b>Project 2 D</b> 4/
4/6		7.2 Arrays and Pointers Code	7.2 	
4/7	<b>Dynamic Memory</b>	7.4 Dynamic Memory Allocation Viz	7.4 	
4/13		7.6 PS Draw a Picture	Viz 	<b>LAB 9 Pointers</b> 4/ <b>PS 7.6 (1 and 3 on</b> WE 7

DATE	TOPIC	READING: Brief C++	SLIDES	DUE DATE
4/15		7.5 Arrays of Pointers Galton Board	7.5-6 Viz 	<b>E7.16</b> 4/
4/16	<b>Objects</b>	7.7 Classes of Objects 7.8 Pointers and Objects	7.7-8  Viz	<b>E7.18</b> 4/
4/20	<b>Review</b>	5.9 Reference Parameters	Ptrs 5.9_Slides 	<b>LAB 10 Class</b> <b>Enums</b> 4/
<b>4/22</b>	<b>MIDTERM EXAM 2</b>	<b>WEDNESDAY 4/22</b>		
4/23	<b>Enumerations</b>	The <code>switch</code> Statement Enumerated types: <code>bool</code> , <code>switch</code> , <code>MyBool</code> , <code>LIKELY</code> , <code>Color</code> , <code>Colors</code>	Enums	<b>PS 1</b>
4/27	<b>Classes</b>	9.1 Object-Oriented Programming 9.2 Implementing a Simple Class	9.1-2 Code	<b>WE 9</b> <b>LAB 11 Mc</b> <b>Classes</b> 4/

ChetSheet like the one that will be given to you on the exam

2019 Fall Midterm 1

2019 Fall Midterm 1 Answers

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