Welcome to Introduction to Programming

CS 1112

Dr. Nada Basit // basit[*at*]Virginia[*dot*]edu

Welcome to CS 1112!

In this course…
being kind, respectful, supportive, compassionate and mindful of others is *essential*.

Welcome to CS 1112!

Be an Active Participant in Your Learning!

Be Curious!

Ask Questions!

Announcements

- Check the course **Canvas** site for the Syllabus and Announcements
- Think you are already familiar with the fundamentals of programming? Consider taking the place-out test for CS 11xx!

- Waitlist
  - If you need CS 1112 – feel free to stay on the waitlist
  - Considering switching to CS 111x? Please let us know – don't drop the course on your own unless you see an open *lecture and lab* spot (CS 1110)
    or open *lecture* spot for CS 1111 (if the course is being offered).
- Note: being on a waitlist doesn't guarantee enrollment into a course
  - Your instructor cannot force your enrollment into a section that is already full
  - In rare circumstances, a dean or the registrar may be able to help

CS 111x place out and CS 1111 placement

- If you already know the material that we'll be covering, you may be able to place out of CS111x
- If you're not going to place-out, but know some programming, and want fewer weekly meetings, you could take CS1111, which meets only twice a week
- In either case, you can take the CS 111X Place-out Test
- After taking the online test, you'll be given 1 of 3 results:
  - Placed-out of CS111X, may move on to CS2100 if desired
  - Qualified for CS1111
  - Did not qualify for CS1111
- Don't open the test until you are ready to take it
- Information about taking the CS 111x place out test:
  - https://uvacsadvising.org/placeout.html#taking-the-place-out-test
  - The test will be open through Tuesday, January 21, 2025 – *Check with CS Office to confirm*

CS 1112 – Introduction to Programming

- Meeting Dates: January 13 – April 29, 2025
- Lecture / Location: **Sections 001 and 002**

Section	Days & Time	Location	Professor
001	M/W/F, 12:30-1:45pm	Olsson Hall 018	Nada Basit
002	M/W/F, 2:00-3:15pm	Olsson Hall 018	

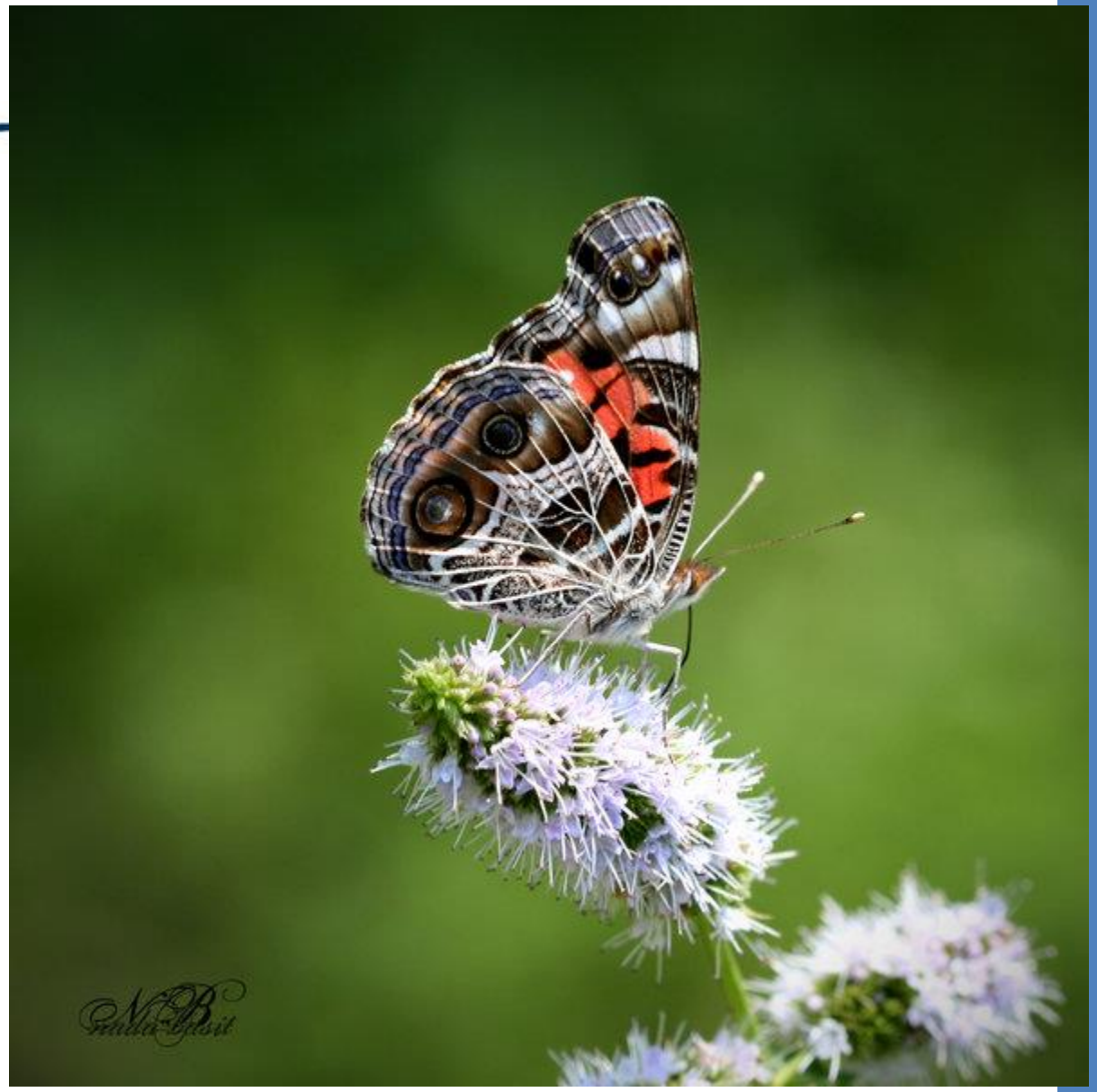
- Mode of instruction: In person
  - Lecture & Lab: *Course content* and *in-class "lab" activities* – *BRING YOUR LAPTOPS!*
  - Recommendation: *Bring a notebook and pen/pencil to class to take notes*
    - *Great way to summarize the material and becomes a great study aide*
  - Accessibility & Accommodations: *Happy to work with you to accommodate your needs; let's chat!*

Your Instructor

- **Dr. Nada Basit**
  - Office: Rice Hall 405
  - OH: Mon (10:30-12:00pm) and Tue (10:00-11:00am) *in person*
  - basit@virginia.edu
    Best way to get in touch with me!
    (Always include "CS 1112" in email subject line)

Prof. Basit's Office Hours Challenge!

About Me
~Photography



~Photography

~My Background

- Education
  - PhD in Computer Science
  - Machine Learning + Biology/Genetics
    → Computational Mutagenesis
  - Graduate Certificate in Biometrics
- Areas of Interest
  - Artificial Intelligence (Machine Learning/Pattern Recognition/Data Mining)
  - Databases
  - Computational Biology
  - Computer Science Education
  - …and of course, TEACHING! ☺

I'd be happy to talk about any and all of these things!

TA Introductions ☺

Quick & Fun Survey Questions

Get to know your peers! ☺

PC vs. MAC?

Speaking of Laptops…

- This course requires students to have a laptop
- I realize that not everybody might have one (nor necessarily need one for their desired major / path…)
- If you do not have a laptop for any reason… ***not to worry!***
- The CS department's Systems staff has a notebook / laptop loaner program and will be able to loan you a notebook / laptop computer for the duration of the semester if you don't have one or if you cannot afford one.
  - Also available if your laptop is broken and under repair, we can arrange for you to receive a loaner laptop for a week or two until your own laptop is fixed

Interested? Link: https://www.cs.virginia.edu/wiki/doku.php?id=cs_laptop_loaner

I am happy to be your sponsor. Let me know.

Course Description

- If you take a moment to think about all the ways **computerized systems** penetrate our daily lives…
- Now think about how your day would go ***without*** devices, services, and conveniences that require some form of computer instruction…
- … the importance of writing precise and correct computer instruction (code) is self-evident.

- A first course in programming, with an emphasis on introducing **computing fundamentals** and an appreciation of **computational thinking**.
- For students with **no previous programming experience**.

What Will We Be Learning?

- Programming in Python
  - **Variables and Types/basic data structures**:
    - ints, floats, strings, booleans, lists, tuples, dictionaries
  - **Control**: functions, conditions, repetition (loops)
  - **File Input/Output (***"File I/O"***)**: reading, writing
  - Using **libraries**
  - **Regular expressions**

Course Objectives/Goals

- By the end of the semester, students should be able to:
  - Understand the nature of the syntax and semantics of a programming language.
  - Analyze a problem and create a solution.
  - Produce a small working program that solves the problem given a set of requirements.
  - Understand and implement basic test strategies to test a program, given a set of requirements

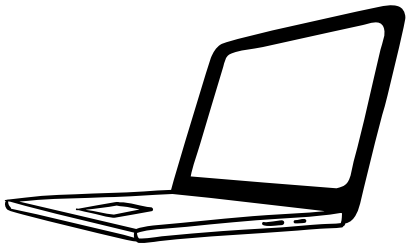
  - Develop an appreciation for computational thinking
  - Understanding of basic object-oriented design and programming
  - Be able to effectively communicate with peers and instructors about your programming

Lecture & Lab Combined

- In-Person
- Learning the course content and practicing through hands-on activities/experiences
- Please bring your laptop
- ***Commit to be a daily, active participant!***
  - Sign the **pledge**
    (soon, once enrollment settles down a bit)

Course Schedule

- See the “Course Schedule” tab on the left navigation bar on Canvas
- Let’s look at Canvas together



Syllabus Quiz

Don't forget to take the Syllabuzz Quizz!

- This quiz is *Mandatory!*
- This quiz is located on Canvas (see tab on left-hand side).
- Take this quiz ***individually***. Absolutely no collaboration permitted.
- Must get **100%** to stay in the course! *May take it as many times as needed.*
  - Review the detailed Syllabus
  - This quiz is ***open-book***
  - See score out of 12 points on Canvas Grades to confirm you've completed the quiz
- ***Opens:*** *Very soon!*
- ***Deadline:*** **January 29 @ 11:00pm**. (Just after the add deadline). *Take it early!*
  - *Most students should aim to finish the Syllabus Quiz by January 24, 2025*

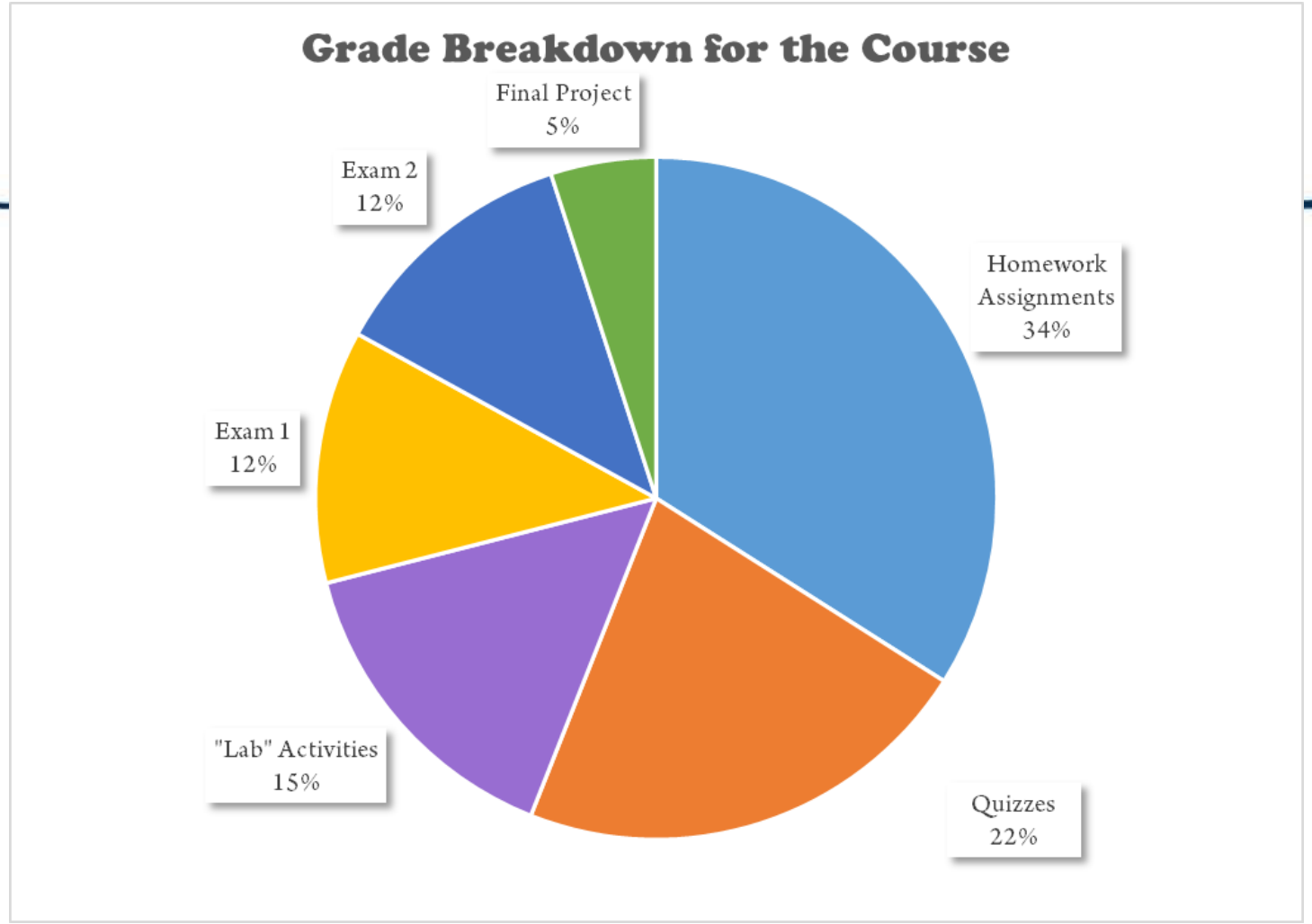
Peanut Butter & Jelly

Sandwiches!

Precise Instructions aka *Algorithms*

- Write down sufficient directions for making a PB & J sandwich!

GOAL



Letter grades will be assigned according to the following letter grade mapping:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Lower Bound	98.0	93.0	90.0	87.0	83.0	80.0	77.0	73.0	70.0	67.0	63.0	60.0	0

Homework Assignments

- **Approximately eight (8)** throughout the semester
- Use your programming assignments as a means to sharpen your skills and problem-solving abilities in order to do well on quizzes and the exams.
- Homework assignments are submitted online on **Gradescope**
- Submit by the deadline
  - Can submit up to 24 hours late, if necessary due to unexpected issues
  - Can submit multiple times on Gradescope – *look at feedback if applicable*
  - Last submission is the one that is graded
- Homework assignments are **due by 11:00pm on Wednesdays**

In-Class "Lab" Activities

- **On most days** there will be in-class activities – designed to be hands-on, ***collaborative***
- Give you the opportunity to review and reinforce your understanding of the material
- These activities are graded on a **completion basis**
- Submit by the end of class
  - Not necessarily based on correctness, but of course try your best to be correct!
  - As long as you try your best and we see you have made a ***sincere effort*** towards the goal/solution of the activity
- If you participate in at least 80% of the activities, you will earn full credit!
- Be sure to **check-in with a TA** to show them your work *before leaving class!*

Quizzes

- **Approximately eight (8)** throughout the semester
- One of the primary ways that we will assess your mastery of the material in this course. It is also a good way to self-assess in preparation for the exams.
- 30-minute limit
  - Open-book, take-home, but no collaboration
- Released Friday and due by **11:00pm the following Monday**
  - Find **any** 30-minute window during this period to take the quiz
  - No late options
- We will **drop two (2) lowest quiz scores**

Academic Integrity Policies For Each Assignment Type

- Homework/Programming Assignments (PAs):
  - No collaboration; all work must be the result of individual academic effort
- Quizzes:
  - Open-book, take-home
  - No collaboration; all work must be the result of individual academic effort
- In-class “Lab” Activities:
  - Collaborative by nature
  - Group discussions and engagements are highly encouraged
- Final project:
  - Collaboration in small groups permitted within the stated collaboration policy
- Exams (1 and 2):
  - Closed-book, in-person (in class)
  - No collaboration; all work must be the result of individual academic effort

Quick & Fun Survey Questions

Get to know your peers! ☺

East coaster / West coaster / Not from the US?