



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

COMP 110

Introduction to Programming

Fall 2015

Time: TR 9:30 – 10:45

Room: AR 121 (Hanes Art Center)

Jay Aikat

FB 314, aikat@cs.unc.edu

Introduction

Jay Aikat

Research Assistant Professor, Computer Science, UNC Chapel Hill



OHIO
UNIVERSITY



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

My Journey into Teaching **COMP 110**...

Introduction

Jay Aikat

Research Assistant Professor, Computer Science, UNC Chapel Hill



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Professional work and research in Computer Science

My **Journey** into
Teaching **COMP 110...**

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Registering for this Class

- 296 students in this class (capacity of this classroom)
- ConnectCarolina says “closed”
- You want to get in? (based on dropping those who don't show up today and Thu)
- Sign up on one of the sheets being sent around right now!

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Course info

- Course web page
<https://jayaikat.web.unc.edu/teaching/comp110/>
- Syllabus
<http://cs.unc.edu/~aikat/courses/comp110/syllabus.pdf>

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Teaching Assistants (TAs)

- Hold LOTS of office hours – all in one location TBA (evenings too)
- Run hands-on lab sessions in FB 007 (Brooks)
- Grade quizzes, assignments and exams
- Help you understand the material
Do not help you do the assignments

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About you...

- By Class
 - freshman - 12%
 - sophomore - 42%
 - junior - 27%
 - senior - 19%
- By Major
 - Psychology - 23%
 - Biology - 12%
 - Math - 10%
 - Comp Sci - 9%
 - Business - 8%
 - Economics - 8%
 - Chemistry - 7%
 - Journalism - 3%
 - Exercise and SS - 3%
 - undecided - 16%

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Your majors

- Psychology
- Biology
- Computer Science
- Economics
- Business Administration
- Chemistry
- Mathematical Decision Sciences
- Exercise and Sports Science
- Political Science
- Physics
- Applied Science
- Information Science
- Global Studies
- Journalism
- Communication Studies
- Philosophy
- Mathematics
- Sociology
- Anthropology
- Environmental Science
- non-degree grad
- Undecided

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Let's take a detour...

COMPUTER SCIENCE: Making a Difference



About COMP 110

- Learn how to develop *algorithmic thinking and problem solving skills*
- Learn the basic components of computer programming
 - can be applied to any programming language (Java, C++, etc.)
- Is COMP 110 right for you?
- Requirements / prerequisites
 - no programming knowledge assumed



Is COMP 110 right for you?

- Have you taken a programming course before? (e.g. High School AP CS)
- COMP 116: Intro to Scientific Programming (MATLAB)
- Three sections of COMP 110 this semester!

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Sending Email

- To me or TAs:
 - aikat@cs.unc.edu
 - comp110-team-cs@cs.unc.edu
- Put COMP 110 in subject line
- For example:
 - [COMP 110] I'm lost
 - [COMP 110] This course is too easy!

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Course Objectives

- You will learn the basics of JAVA programming
- More importantly, **algorithmic thinking**
 - Algorithm: sequence of instructions used to solve a problem
 - *Programming is understanding.* (Kristen Nygaard)
 - Programming is abstraction.
 - You will learn how to describe a problem and its solution abstractly and precisely.
 - Can be applied to any programming language (Java, C++, Python, Matlab, etc.)

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Basics

The details look different in different languages, but a few basic **instructions** appear in just about every language:

- **Input:** Gather data from the keyboard, a file, or some other device.
- **Output:** Display data on the screen or send data to a file or other device.
- **Arithmetic:** Perform basic arithmetical operations like addition and multiplication.
- **Conditional Execution:** Check for certain conditions and execute the appropriate sequence of statements.
- **Repetition:** Perform some action repeatedly, usually with some variation.

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Textbook / Reference

- Textbook -- How to Think Like a Computer Scientist: Java Version, 4th edition. Allen B. Downey. Available at no cost under the GNU **Free** Documentation License
at: <http://www.greenteapress.com/thinkajava/thinkajava.pdf>
- *Reference -- Java: An Introduction to Problem Solving and Programming (6th Edition)*, by Walter Savitch. ISBN: 978-0-13-216270-8. (reference)

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Grading

- | | |
|------------------------------------|---------|
| • Programming assignments | 45% |
| • Labs | 10% |
| • Weekly Quizzes | 5% |
| • Midterm | 15% |
| • Final | 20% |
| • Class participation / Attendance | 5% |
| • Extra credit (TBD) | upto 2% |

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Grading Scale

- A: 93 - 100; A- : 90 - 92.99;
- B+: 87 - 89.99; B: 83 - 86.99; B- : 80 - 82.99;
- C+: 77 - 79.99; C: 73 - 76.99; C- : 70 - 72.99;
- D+: 65 - 69.99; D: 60 - 65.99;
- F: 0 - 59.99.

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Software

- Java and Eclipse
-- See the course website for
detailed installation instructions

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Assignments

- Programming assignments
 - Programming assignments
 - Usually a week's time; highly time consuming
- Reading assignments
 - Complete reading assignments before class
- See class website for announcements and assignments

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Collaborating on programming

Don't cheat!

You can

- talk to each other about the lecture topics
- talk about assignment *requirements*

You should

- do your own assignments -- design and code

You should **never**

- talk to each other about assignment solutions
- share code -- ***it is easy to detect and we will take action***

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Assignment and Lab Submissions

- Submit assignments through Sakai
- Naming code scheme
 - name your jar files for submission as follows:
 - *youronyen_assignment#.zip*
 - Example: aikat_assignment1.zip
- We will include these instructions with each assignment

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Assignments and Labs

Late assignments are not accepted for full credit (see late policy)

No excuses acceptable:*

“I started late”

“something came up”

“I had a very busy week”

Or any other creative excuses...

*Exceptions will be made as necessary

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Due Dates

- Assignments and Labs are always due at 11:55 PM on the due date
- Assignment or Lab is late if submitted after midnight on the due date
- Example
 - Due date: Sep 10; say, your deserved credit: 90
 - If received on 11:55 PM, Sep 10: You get **90** points;
 - If received on 00:01 AM, Sep 12: You get **0** points!

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Late Policy

- An assignment is on time only if it is received at or before 11:55 PM on the due date.
 - You will receive at most **half** the credit if the assignment/lab is received no more than 24 hours late
 - After 24 hours, you will receive no credit
- Example
 - Due date: Sep 10; Your deserved credit: 90.
 - If received on 11:55 PM, Sep 10: You get **90** points;
 - If received on 00:01 AM, Sep 11: You get **45** points;
 - If received on 00:01 AM, Sep 12: You get **0** points!

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Exams

- Mid-Term
 - You can take a make-up mid-term **ONLY** in case of emergencies. I will ask for supporting documents (doctor's note etc.)
- Final (*Tuesday Dec 8, 8:00 AM*)
 - To take the exam at a different time, you must get permission from your Dean and bring me the blue slip you get from the Dean.
- I do not give *incompletes*

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Studying for Quizzes

- Go through the class slides and your notes
- Step through example code and make sure you understand
- Read the related sections in the textbook

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Working on Assignments

- Before you open Eclipse and start coding:
 - read the assignment
 - think about what the assignment is asking for
 - review lectures and examples on the topic
 - write (on paper) your plan for completing the assignment (i.e., your algorithm)

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Save and Make Back-ups

- Save a file as you edit it
 - Save it as and when you finish a part of it
 - However, if it's working and you want to add some new function, you should make a copy of the working version
- Back up your work using USB drives, or Dropbox
 - <https://www.dropbox.com/>

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Need Help?

- Piazza – stay tuned for announcement on email
- TA Office hours
- For help on general computer problems, or for free software
 - <http://help.unc.edu>
 - 919-962-HELP

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Assignment 1

- Will be announced Thu, Aug 20
- DUE: Friday, Aug 28
- See the course website for assignments – **calendar tab**

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START EARLY!

- Nope!
This →
strategy
will not
work for
this
class! 😊



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Our First Program

```
public class HelloWorld
{
    public static void main(String[] args)
    {
        System.out.println("Hello World");
    }
}
```

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Next class

- Computer Basics
 - Introduction to Programming
 - Quizzes start Thu, Aug 27
- Reading Assignment: Chapter 1