Welcome to CSCI 134!
Introduction to Computer Science
What is Computer Science?

[ Hint. It is not really about computers! ]

“[Computer science] is not really about computers -- and it's not about computers in the same sense that physics is not really about particle accelerators, and biology is not about microscopes and Petri dishes…” — Hal Abelson

“The topic became – primarily in the USA – prematurely known as ‘computer science’ – which, actually, is like referring to surgery as ‘knife science’ – and it was firmly implanted in people’s minds that computing science is about machines and their peripheral equipment.” — Edsger Dijkstra
What is Computer Science?

- Computer science ≠ computer programming!
  - Programming is a big part of computer science, but there is much more to CS than just writing programs!
- Another part of CS is computational thinking

Computational Thinking

• Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions. We can then present these solutions in a way that a computer, a human, or both, can understand.

• Four pillars of CT:
  • **Decomposition** - break down a complex problem or system into smaller, more manageable parts
  • **Pattern recognition** – look for similarities among and within problems
  • **Abstraction** – focus on important information only, ignore irrelevant details
  • **Algorithms** - develop a step-by-step solution to the problem, or the rules to follow to solve the problem

• A computer can perform billions of operations per second, but computers only do exactly what you tell them to do!

• In this course we will learn how to 1) use CT to develop algorithms for solving problems, and 2) implement our algorithms through computer programs
Course Logistics
CS 134 Team

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Tasan Smith-Gandy
Jocelyn Bliven
Tryphena Bossman
Greta Laesch
CS134: Course Website

- [https://www.cs.williams.edu/~cs134/](https://www.cs.williams.edu/~cs134/)
- One stop shop for all CS134 related info!

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**CSCI 134**

**Introduction to Computer Science**

Home | Bill's Lectures | Shikha's Lectures | Assignments | Resources | Williams CS

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### Home

**Instructor:** Bill Jannen  
**Email:** 09wkj@williams.edu  
**Office:** TPL 304  
**Help Hours:** (In TCL 216/217) W 12-1:30pm, Th 2:30-4 and by appt.  
**Class Meetings:** MWF 9-9:50 in Schow 030A

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**Instructor:** Shikha Singh  
**Email:** shikha@cs.williams.edu  
**Office:** TCL 304  
**Help Hours:** (In TCL 216/217) W 2-4pm, Th 1-2:30 and by appt.  
**Class Meetings:** MWF 10-10:50 & 11-11:50 in Schow 030A

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**Course Support:** Lida Doret  
**Email:** lpd2@williams.edu
Grading Breakdown

- **Homeworks (10%)**
  - Short answer programming & problem solving questions
  - Due every Monday (usually on GLOW)
  - Practice using “pencil and paper” before submitting answers

- **Labs (30%)**
  - Meet Mon/Tues for 90 mins
  - Monday labs → Wed @ 10pm | Tuesday labs → Thurs @ 10 pm
  - Review lab as soon as it comes out (~Fridays)
  - **Prelab** (5% of lab grade): complete before lab

- **Midterm (25%)**
  - Evening exam on **Thurs, March 14**

- **Final (35%)**
  - Scheduled Final Exam
Textbook?

- We **do not** have a textbook for CSCI134
- We will post all lecture materials (slides, code examples, etc.) on the website
- Use Online Textbook **Think Python** you can use as a reference: http://greenteapress.com/wp/think-python-2e/
Homework

• Usually multiple choice GLOW "quizzes"
• Serve as check points to review lecture content
• Will be posted on GLOW every Wed, due following Mon 10 pm
• Homework 1 is out (linked on course webpage/GLOW)
  • **Google Form** to get some information about you
  • Due Feb 5 (Monday) by 10 pm
• We’ll drop your lowest grade
Labs

• Longer programming assignments typically released on Friday
• Will be posted on webpage under assignments
• We expect you to read over the lab write up and complete the pre-lab (starting Lab 2) before your lab meeting
• Besides the pre-lab, we strongly encourage (but don’t require) you to start working on the actual implementation
• Labs are short: only 1.5 hours! Make the best of it by coming prepared!
Accounts

- **CS accounts**
  - You should have received an email from Lida about your CS account. This is a separate account from your campus account!
  - You will use these accounts for submitting labs this semester
- **Labs** are in **TCL 217A and TCL 216** (behind the stairwell)
  - This door is also always locked!
  - The combination is **3-9-2-7-8-1** (think 3-9-27-81)
- Each of you have also been assigned a unique anonymous ID assigned
  - Allows us to implement anonymous grading
  - Your email from Lida contains this info
  - Do not share your ID!
# Weekly Workload Summary

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<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
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<tr>
<td>Lab</td>
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<td>Next HW posted</td>
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<td>Next Lab posted</td>
<td>Complete pre-lab</td>
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<td>Graded Lab returned</td>
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<td>Work on HW</td>
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<td>HW due 10 pm</td>
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<td>Mon Labs due 10pm</td>
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<td>Tues Labs due 10pm</td>
<td>Review Lectures</td>
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## Help Hours

### Course Calendar Link

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<th>MON</th>
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<td>4-5pm</td>
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- Room: TCL 216/217a
- Times:
  - 7-10 pm
Late Policy

- Expected to turn in assignments by the due date to receive full credit.
- No late days.
- Things happen so if something comes up, please reach out to the course staff as soon as possible if you cannot meet a deadline.
- All emails for extenuating circumstances: cs134staff@williams.edu
Honor Code

• “Any work that is not your own is considered a violation of the Honor Code.”
• This includes work copied from webpages, auto-generated code, etc.
• If you are taking photos of someone else’s screen, looking at someone else’s screen, or telling someone else what to type, it is likely your/their work is no longer the work of an individual student.
• The following are all considered violations of the Honor Code:
  • giving your solution to other students
  • submitting another person's solution as your own
  • using another person's solution as the starting point for your solution
• One of the major goals of this course is to learn how to write code. Any use of generative AI technology (e.g. ChatGPT, Github Copilot) for code generation is therefore considered a violation of the Honor Code.
• If you aren’t sure if something is considered a violation, just ask (beforehand)!
About Class Participation

• **We like interaction in our classes!**

• Many ways to participate:
  • Ask questions! (there are no bad questions!)
  • Answer questions (there are no wrong answers!)
  • Talk to us after class/come to office hours

• Class participation does not mean dominating classroom discussions or interrupting your peers

**Bottom line.** *Help create a vibrant, positive, and inclusive classroom environment!*
CS 134 Tools
Computer Scientist’s Tools

- **Terminal**
  - Command line or “Shell”
  - Text input/output interface to interact with your computer

- **Editor**
  - Visual Studio Code (or VS Code)

- **Git**
  - Version-control system

- **Python**
  - Programming language
  - Created by Guido van Rossum in the late 1980s.
Fast Paced Course

• How to succeed:
  • Read and **think about** labs as soon as they are released
  • Seek help! Use resources! We are all here to help you!
• Learning to program is all about **PRACTICE, PRACTICE, PRACTICE!**
  • Just like learning a musical instrument, learning to ski, or building muscle, it requires repetition and dedication
  • Can’t passively absorb material
  • **Don’t be afraid to fail and make mistakes**—in fact you are encouraged to do so!
  • No one learns anything without making mistakes and learning why and how to fix them
Setting up your Personal Machines

- We strongly encourage you to use the lab machines (Mac)
  - Already configured with everything
  - Better ergonomics
  - Community
  - Separate your workspace from leisure
- **Resources to setup your personal** (Windows/Mac) machine are also available
  - Come see us if you get stuck!
  - Useful if you are traveling or sick
Hello World!

- Our first program:
  - Create a file called `helloworld.py` in VS Code
  - Execute a python3 program from terminal (either standalone or within VS Code)
    - Type `python3 helloworld.py` and enter
CS Colloquium Today

- Almost Every Friday
- Time: **2:35pm**, Location: **TCL123** (Wege Auditorium)
- Great way to engage with the CS community @ Williams
- Today: Thesis Proposals