Syllabus

━━━ Data Structures and Advanced Programming ━━━

Section R2 Instructor	Prof. Bill Lenhart
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Sections H3 & H4 Instructor	Prof. Sam McCauley
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Technical Support	Lida Doret
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Note: all times below are Eastern Time

Remote Conference Section	MWF 9:20–10:10 am (Bill)
In-Person Conference Sections	MWF 10:30–11:20 am & 12:00–12:50 pm (Sam) in TCL 217
Remote Labs (Thursdays)	R9: 9:45–11:15 am, R5-R6: 1:00–2:30 pm, and R7-R8: 3:30–5:00 pm
	Lab submissions due Mondays at 11 pm
Web Page	`https://williams-cs.github.io/cs136-s21-www/`

━━━ Text ━━━

We will be using the $\sqrt{7}$ edition the following text book:

- *Java Structures: Data Structures in Java for the Principled Programmer, $\sqrt{7}$ Edition*, Duane Bailey.

Do not use any earlier editions. A PDF version is freely available on the course website.

━━━ Course Objectives ━━━

This course couples work on program design, analysis, and verification with an introduction to the study of data structures. Data structures capture common ways in which to store and manipulate data, and they are important in the construction of sophisticated computer programs. We will use the Java programming language in class and for the assignments.

Students will be expected to write several programs, ranging from very short programs to more elaborate ones. Since one of our goals in this course is to teach you how to write large, reliable programs composed from reusable pieces, we will be emphasizing the development of clear, modular programs that are easy to read, debug, verify, analyze, and modify.

Given the unusual modes of instruction this semester, you will be carrying out your programming assignments on your own computers. All of the software tools you will need for this course are freely available and your first lab (**Lab 0 on Wednesday, Feb. 17**) will be devoted to guiding you through their installation and use.

Course Work

Workload The work that you should expect to engage with will involve:

- Watching the lecture videos that we will be releasing over the course of the semester

- Attending your conference and lab meetings, whether remotely or in-person.

- Preparing for the weekly programming labs, and when needed, for the conference meetings

- Completing the weekly labs

- Studying for the mid-term and final exam

- (Optional) Supplementary readings from the text: 12–15 pages, on average, per conference meeting

Some students program quickly but absorb material slowly, some do the opposite. The typical student should expect to spend at least 10 hours a week beyond the scheduled conference and lab hours (viewing videos, working on labs, etc). If you find yourself spending substantially more time than that on a regular basis, discuss the issue with your instructor.

Labs. On most weeks, there will be lab programming assignments. Even with the virtual lab environment this semester, **attendance in lab is mandatory**: there are valid reasons to miss lab, but any unexcused lab absence may result in failure in the course.

All programs will be graded on design, documentation and style, correctness, and efficiency. Programs should be turned in electronically by 11 pm on the due date, typically the Monday following lab. Each student may use a maximum of **three free late days** during the course of the semester. A late day permits you to hand in an assignment up to 24 hours late, without penalty. You may use at most 2 late days on a given assignment. Once those late days are exhausted, late labs will be penalized 20% per day. Programs will not be accepted more than four days late.

If you are going to submit an assignment after the due date (whether using a free late day or not), you'll need to fill out the online late submission form.

GitLab

All assignments for this course will be submitted using Gitlab. Prior to an assignment, a Gitlab repository will be created for you. Repository names generally conform to the following pattern:

    https://evolene.cs.williams.edu/cs136-s21/lab#-<labname>/<cs
    username>-lab#-<labname>.git.

You will be notified by email when your Gitlab repository is created.

Slack

In the interest of building a helpful community, we will be using Slack for course communication. Slack accounts are free and secure, and links will be provided on the course website. The advantages of Slack are many, including:

- all students benefit from answers to other student's questions;

- anyone can answer a question as soon as it is posted, decreasing the wait time for an answer; and

We remind you that all communications must follow the honor code—do not post solutions!

Grading

Grades will be determined as follows:

Programs/Labs:	45%
Final exam:	30%
Midterm exam:	25%

Exams. There will be one midterm and one final exam. The midterm will be scheduled during your lab period on **Thursday, March 25**. and it will replace the lab for that week. The final exam will be a standard 2.5-hour exam given during the scheduled final exam period.

Honor Code

Exams and lab assignments are to be the sole work of each student unless the assignment explicitly states otherwise. Students may discuss issues related to an assignment, provided that such discussions are cited in the material turned in. However, students may not collaborate on designing or writing code. Uncredited collaborations will be considered a violation of the honor code. If in doubt about what is appropriate, do not hesitate to ask us. For a fuller description of how the honor code applies to this course, please see here. A full description of the Computer Science Department Honor Code and Usage Policy can be found here

We are providing many digital course materials for your educational use. You *may not* record any digital meetings without the consent of all parties involved. See the college policy on Classroom Recordings and Use of Class Materials found on the dean's webpage.

Help!!!

Help. We all need it. There are many resources available when *you* need it. You are encouraged to discuss any questions, concerns, difficulties, or thoughts about the course with your instructor. In addition, TAs are available to help you with challenges you might face as you work through the course material and lab assignments. If you find yourself facing challenges beyond the typical, we encourage you to reach out. Talk to your instructor, a friendly face from the Dean's Office, or some of the many professionals across campus who stand ready to help, including

- The Peer Academic Support Network: Tutors can be arranged when 1-1 help is required beyond that available from your instructor and TAs. Go to

  `https://academic-resources.williams.edu/peer-academic-support/` for details.

- Math & Science Resource Center: Support is available for students grappling with the more quantitative aspects of their coursework. Go to

  `https://academic-resources.williams.edu/peer-academic-support/math-science/` for details.

- Accessible Education and Disability Support Center: Some students with documented disabilities may require accommodations in certain situations. If that's you, take advantage of the options available. Go to

  `https://academic-resources.williams.edu/disabilities/` for details.

- The Health Center: Sometimes your challenges are not course-related. The Health Center provides a range of medical, psychological, and health/wellness services. Go to `https://health.williams.edu` for details.