

# Software Development

CS 205  
Fall 2023

**Instructor** Tom Kelliher, Ph.D., Associate Professor of Mathematics and Computer Science  
Pronouns: he/him/his  
Office: Julia Rogers 133  
Office hours: MWF 10:00–11:30 am, drop-in when my office door is open, or email to request an in-person or Zoom appointment.  
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## Course Textbook and Other Resources:

1. C. Horstmann, *Object-Oriented Design & Patterns*, 3rd edition draft. Required. Available on Canvas.
2. See the course web site for additional resources:  
<https://phoenix.goucher.edu/~kelliher/f2023/cs205/>
3. We'll be developing Java software on the Eclipse platform using phoenix via NoMachine.

**Meetings** JR 121, TuTh 1:30–3:20 pm.

**Description** This course introduces object-oriented design and software design patterns. Advanced topics of object-oriented programming including interfaces, polymorphism, inheritance, generic types, multithreading, and user interface programming will be explored. Students will master the programming process with moderately sized projects from specification through complete implementation.

**Prerequisite** CS 116 with a minimum grade of C–.

## Learning Objectives:

At the end of this course you will be able to:

1. Design classes from a given project specification
2. Apply interfaces, abstract classes, and inheritance to achieve polymorphism
3. Apply common design patterns to programming problems of moderate complexity
4. Write event driven multithreaded programs

**Schedule** Refer to Canvas and the course web site on phoenix for the schedule.

**Expectations** You are expected to give CS 205 the attention it deserves as a college-level computer science course. In particular, you are expected to:

- Spend an average eight hours per week outside of class working on the course. This includes the entire range of activities from preparing for class, to completing assignments and projects, to attending office hours.
- Attend class each time it meets, with all assigned preparation activities completed. During each class meeting, you are expected to pay attention respectfully, work productively, and not interrupt the learning of your classmates.
- Take initiative to seek out help in a combination of forms and channels when needed, and to be honest about when help is needed.

Registering for a four-credit class is a 12-hour-per-week commitment, four hours of which take place during our class meetings. The other eight hours are to be spent in productive, engaged work in individual and group study and in attending office hours.

## **Grading:**

### **Grade Distribution**

At the conclusion of the semester, your grades will be weighted as detailed below, rounded up, and converted to a letter grade as follows: A = [92–100], A- = [90–92), B+ = [88–90), B = [82–88), B- = [80–82), etc.

### **Graded Work**

1. Labs, accounting for 50% total of your final grade. Labs are to be done individually.
2. Semester Project, accounting for 50% of your final grade. You will be working with an assigned partner for the project. Project demonstrations will held during the final experience period.

## **Course Mechanics**

The lab assignments are to be done individually, but discussions with your classmates, or internet research, about concepts and approaches are strongly encouraged. The rule of thumb is that you may discuss or research concepts and approaches, but when it comes time to write the code, it needs to be written by you alone. Anything else is plagiarism, as defined in Goucher’s Honor Code. Similar guidelines apply to the project, except for the realization that you are working with a partner.

The project assignments will be using pair-programming in which you will be working with a partner throughout the semester. The requirements and responsibilities of pair-programming are outlined in a video available on the course web site. Effective pair-programming requires that you work together, not that you split-up the work and then work individually. Because you are working with a partner it is imperative that you attend class and arrive on time. If the unexpected should happen and you must miss or be late for a class, you must contact me promptly concerning your absence. You have responsibilities to your partner — you must perform your share of the work. If you engage in free rider behavior, you will be required to complete the project on your own, without the benefit of a partner.

I will do my best to provide feedback on assignment submissions made before the deadline. You may use this feedback to revise and resubmit assignments. A few days after each deadline, I will close the assignment to further submissions. These closures will not be announced in advance. Once an assignment is closed, no further submissions will be accepted.

### **Academic Integrity**

Academic dishonesty is detrimental to the integrity of our learning community and will not be tolerated. All of us, including me, are bound by the Academic Honor Code. The College's Academic Honor Code is available at <https://www.goucher.edu/learn/provost/academic-honor-code>. I expect you to be familiar with its obligations and requirements. I have also written a statement that applies the Honor Code to this course. This statement is available on the course web site (see *Integrity in My Computer Science Courses*).

### **Disabilities**

If you have a documented disability you should contact the Academic Center for Excellence (ACE) to arrange for academic accommodations for the course. Carefully follow all of ACE's policies and procedures. Once you have coordinated with ACE, email me to make me aware of your accommodation. I will receive official correspondence from ACE; however, I would also like to receive an email from all students requiring accommodations for the semester. If your accommodation involves taking exams at ACE, it is your responsibility to schedule your exams with ACE. When scheduling exams with ACE, be sure to carbon copy me on any emails with ACE so that I have confirmation that everything is in order. This process is to be repeated for all exams throughout the semester.

### **Achieving Academic Success**

If you are struggling in this or other courses, I strongly encourage you to reach out for help sooner rather than later. Proactive strategies could include contacting me directly, attending office hours, and/or taking advantage of the multitude of academic services that the Academic Center for Excellence offers. The responsibility is upon you to recognize when you need help and to take the steps necessary to succeed. Goucher College has a variety of resources available to help you succeed in your classes; use them!

Office hours are perhaps the most effective and immediate way to get help. My goal in office hours is to answer your questions in such a way that you will not only get your question answered, but also strengthen your ability to answer your own questions.

If you don't need an immediate answer to a question, you may submit it by email. I check email several times during the day, and usually during the evening. Please note, however, that I am not available on a 24x7 basis, and don't check email very frequently the weekends.

The first 10 minutes of each class may be reserved for addressing the most common issues I see occurring from all of our interactions.

### **Student-Athletes**

According to the Goucher College policy on Student-Athlete Responsibilities, if you are a student-athletes, you are expected to contact me at the beginning

of the semester to request approval for absences associated with athletic events (or scheduled departure times for such events) that conflict with the regularly scheduled class meeting time. The approved absences will then be listed on a contract signed by both me and you. Additionally, it is the responsibility of the student-athlete to complete all assignments covered in class during the approved absences and to obtain all handouts, assignments, and notes from the missed class(es). Student-athletes who fail to coordinate with me prior to any class absences will not be permitted to make-up missed assignments.

**Student Responsibilities in Academic Conflicts (Field trips, Performances, etc.)**

According to the Goucher College policy on Academic Conflicts, if you are in a situation in which you are confronted with obligations or responsibilities (ranging from participation in field trips in the visual arts or the sciences or rehearsals or performances in the performing arts to extra-curricula activities at which students are representing the College such as model senate events or varsity athletic contests) that conflict with regularly scheduled academic classes, you are expected to contact me at the beginning of the semester, or as soon as the conflict is known, to request approval for absences that conflict with the regularly scheduled class time. The approved absences will then be listed on a contract signed by both me and you. Additionally, it is your responsibility to complete all assignments covered in class during the approved absences and to obtain all handouts, assignments, and notes from the missed class(es). Students who fail to coordinate with me prior to any class absences will not be permitted to make-up missed assignments.