Software Development

CS 205
Fall 2018

Instructor   Tom Kelliher, Ph.D., Associate Professor of Mathematics and Computer Science
Pronouns: he/him/his
Office: Julia Rogers 133
Office hours: M 1:00–2:00 pm and TuTh 10:00–11:00 am (tentative); drop-in when my office door is open; or request an 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:
   `http://phoenix.goucher.edu/~kelliher/f2018/cs205/`

3. We'll be developing Java software on the Eclipse platform. See the course web site for installation instructions on the Windows and Mac platforms.

Meetings   Julia Rogers 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 119 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   The dates below are the start dates, followed by the due dates. Deliverables are due at 11:59 pm.

- Aug. 23, Aug. 29, Lab 0A: Java — Classes and Objects; one day.

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- Aug. 28, Sept. 3, Lab 1: Object-Oriented Design; two days.
- Sept. 4, Sept. 14, Lab 0B: Java — GUI Programming; one day.
- Sept. 6, Sept. 17, Project: Part 1; three days.
- Sept. 18, Sept. 26, Project: Part 2; three days.
- Sept. 27, Oct. 3, Lab 2: Interface Types and Polymorphism; two days.
- Oct. 4, Oct. 17, Lab 3: Patterns and GUI Programming; three days.
- Oct. 18, Oct. 29, Project: Part 3; three days.
- Oct. 30, Nov. 7, Lab 4: Inheritance and Abstract Classes, and the Java Object Model, three days.
- Nov. 8, Nov. 14, Lab 5: Multithreading, two days.
- Nov. 15, Nov. 28, Project: Part 4, three days.
- Nov. 29, Dec. 7, Project: Part 5, three days.
- Dec. 14, 3:00 pm, Project Presentations.

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, able to complete in class, 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 nine 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 0 and 1 each account for 5% of your final grade. The remaining labs each account for 10% 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 a partner for the project.

For each lab and project, you are granted an automatic three calendar day due date extension. With the exception of emergencies or religious holidays, no other extensions will be granted.

Course Mechanics

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. 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.

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. If I must cancel office hours, you will receive warning in advance and I will schedule "make-up" office hours. You do not need an appointment for office hours; simply drop in and ask your questions. 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. You may also call my office during office hours. If you cannot make office hours due to a scheduling conflict, you may schedule time with me outside the normal office hours period. I will do my best to accommodate you.

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.

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.