# Syllabus for COMP132, Principles of Object-Oriented Design

Fall 2020

Dickinson College

Instructor: John MacCormick

### Goals

* understand, implement, and test object-oriented programs that use abstraction, encapsulation, inheritance and polymorphism.
* understand and implement selected object-oriented design patterns.
* understand the implementation and analysis of basic searching and sorting algorithms.
* understand and implement basic recursive algorithms.
* [writing in discipline goal] develop the ability to write code that is readable, maintainable, extensible, and reusable by future developers.
* [college-wide quantitative reasoning goal] comprehend and create basic numerical and/or logical arguments. For COMP 132, this means that students will use abstraction and logical thinking as problem-solving techniques.
* [college-wide lab science goal] develop the ability to use scientific methods as a way of understanding the world

Teaching methods

* Required reading
* Interactive lectures and class discussions (online)
* Labs for gaining experience with important concepts
* Homework and exams to reinforce understanding of concepts

When and where

* Classes: Interactive lecture classes MWF1030-1120 and lab sessions Tue3-5. All classes will take place online and attendance is expected. Classes will be recorded. Where necessary, separate arrangements will be made with students outside of the US Eastern time zone
* Office hours: see the instructor’s [office hours webpage](http://users.dickinson.edu/~jmac/office-hours.html).

### Book

Horstman, C. (2019). *Big Java*, 7th Edition. Wiley. (ISBN 978-1-119-49953-4) The digital and print versions are both acceptable. It is also acceptable to rent digital access for a single semester, which is a relatively low-cost option (see [vitalsource.com](http://vitalsource.com)).

### Assessment and grading

* Final grade will comprise:

Grade weights changed on 9/9/2020

|  |  |  |
| --- | --- | --- |
| Homework assignments (about 12 x 1.7% each) | ~~20%~~ | 22% |
| Labs (about 8 x 5% each) | ~~40%~~ | 42% |
| Midterm exams (2 x 10% each) | ~~20%~~ | 20% |
| Final exam | ~~15%~~ | 16% |
| ~~Participation in Moodle Discussion forum~~ | ~~5%~~ |  |

* **Homework assignments:** There will be approximately 12 homework assignments, due at the start of the class timeslot on the dates specified on the class schedule. Only a random subset of homework questions will be graded for correctness; the remainder of the homework will be graded based on completeness only. It is the responsibility of the student to consult the provided solutions and understand the correct approach to every question, whether graded or not.
* **Labs:** There will be approximately 8 lab assignments, due at the start of the class timeslot on the dates specified on the class schedule. Grading of labs will follow the same general principles as homework, with only a random subset of the lab content being graded for correctness.
* **Midterm exams:** There will be two midterm exams, likely to be held during the class timeslot on Monday, September 21 and Friday, October 30. However, ample extended time will be available to all students and the [ADS Test-Related Guidance](https://www.dickinson.edu/info/20027/academics/4045/ads_test_related_guidance) will be followed.
* **Final exam:** The final exam will take place on Wednesday, December 2nd, 9:00a.m. to noon. Ample extended time will be available to all students and the [ADS Test-Related Guidance](https://www.dickinson.edu/info/20027/academics/4045/ads_test_related_guidance) will be followed.
* Details on how the midterm and final exams will be administered will be determined later and posted on the course “exams” webpage.
* The midterm and final exams are open note and open web. Students may consult any printed or digital materials and may perform web searches. However, no communication with other humans is permitted.
* **Participation in Moodle Discussion forum:** The Discussion forum within the course Moodle site is intended for students to ask and answer questions about the course, including course content and any homework or lab assignments. Students are required to maintain a reasonable level of participation in this forum. Contributions to the forum will contribute to a student's participation grade. Details of exactly how the participation grade is calculated will be provided as the semester progresses. Typically, questions and answers will count equally towards the participation grade. The initial expectation is that each student will make at least one contribution to the forum per week, but this expectation may be adjusted during the semester.
* Final scores will be converted to grades according to the following thresholds (or possibly more generous thresholds): 93%=A; 90%=A-; 87%=B+; 83%=B; ...; 60%=D-.

### What will be on the exam?

Technically speaking, any material covered in any lecture, reading, lab, or homework assignment is eligible to appear in the midterm or final exams. In practice, most exam questions will be similar to a homework question, an example done in class, or other assigned practice questions.

### Amount of work

College policy recommends approximately 3 hours of independent work for every hour of class time. Our class timeslot is 2.5 hours lecture and 2 hours lab per week. Therefore, you should expect to spend 9-11 hours per week (outside of class time) on this course.

### QRA, TA, QR Center, and CS Help Room

We are fortunate to have both a Quantitative Reasoning Associate (QRA) and a Teaching Assistant (TA) supporting us in this course. The TA will provide guidance to students during lab sessions. The QRA will provide guidance and tutoring on homework, labs, and course content during specific QRA office hours. In addition, Dickinson’s Quantitative Reasoning Center is available to assist students. Finally, the computer science program runs a Help Room staffed by TAs in the evenings from Sunday to Thursday. Please see the course webpages for further details.

### Plagiarism, copying, and collaborating

The College's standard policy on plagiarism applies and you should be familiar with it, but here are some key points that apply particularly to this course:

* All work must be your own.
* Never copy work from someone else or allow your own work to be copied.
* You may not copy or consult assignment solutions from any source, including online repositories or solutions provided for previous instances of the course. Exception: you may consult solutions provided for this instance of the course, after they have been posted to Moodle.
* If you use exact words taken from any source, you must use quotation marks and cite the source.
* Students are encouraged to help each other understand concepts, including concepts that apply to homework and lab assignments. However, all work must still be your own. So if you discuss a problem with someone, you must destroy any written or electronic material that results from the discussion, and re-create it later on your own.
* Be especially careful not to copy computer code from another student, or from the Internet (unless an assignment question specifically states that it is permitted – and even then, state the origin of any copied code clearly using a comment in your source code). Sharing or copying computer code is easy and often tempting, but it is not permitted and will suffer the same penalties as any other form of cheating.
* Exception: some or all labs will be conducted in teams of two or more. In such cases, unlimited collaboration within the team is permitted, and each team will submit only one solution.

### Accommodations

The instructor will follow college policy on [Accommodating Students with Disabilities](http://users.dickinson.edu/~jmac/accommodations.html).

### Late Work Policy

Each student is permitted a total of four no-penalty days of lateness for submitted work over the entire semester; every subsequent day of lateness incurs up to a 25% penalty for the late assignment. Late days can be used only in whole day units. Accounting for late days is mostly via an honor system: students should keep count of their late day usage. To use one or more late days on a given assignment, state clearly at the start of your submission how many days you are using and the total used so far in the semester.

### Recording and posting of class content

All class meetings will be recorded, and the content will be made available only to members of the class. Do not share or repost class recordings or other content; doing so would be a breach of Dickinson’s [Community Standards](https://www.dickinson.edu/info/20273/dean_of_students/867/community_standards).