

Miami University
College of Engineering and Computing
DEPARTMENT OF COMPUTER SCIENCE & SOFTWARE ENGINEERING

CSE271 Object Oriented Programming
SYLLABUS – Spring 2017

Lectures:	4:00pm – 4:55pm	Mon & Wed	102	Benton Hall
Labs:				
Section A (Gage)	2:00pm-3:50pm	Fri	006	Benton Hall
Section B (Michael)	2:00pm-3:50pm	Fri	002	Benton Hall
Section C (Dustin)	2:00pm-3:50pm	Fri	010	Benton Hall
Section D (Emily)	4:00pm-5:50pm	Thu	010	Benton Hall

Instructor: Dr. Matthew Stephan
Office: 205-A Benton
Course Site: Canvas
E-mail: stephamd@miamioh.edu
Office Hours: Tuesday, Thursday 2:30pm-4:00pm
Other times by appointment.

Teaching Assistants:

Dustin Riley, rileydm3@miamioh.edu , Tuesday 730-830pm Benton 002
Emily Pantuso, pantusen@miamioh.edu , Monday 7-8pm Benton 002
Gage Lufenberg, mosleylm@miamioh.edu , Tuesday 830-930pm Benton 002
Michael Gentile, gentilm5@miamioh.edu , Friday 6-7pm Benton 006

IMPORTANT NOTE: Please read this syllabus very carefully and refer back to it occasionally. It contains information vital to this class and your performance in it.

CATALOG DESCRIPTION

The design and implementation of software using object-oriented programming techniques that include inheritance, polymorphism, and composition. Students will analyze program specifications and identify appropriate objects and classes. Additional programming topics include recursion, using existing class libraries, exception handling, file IO, and graphical user interfaces.

PREREQUISITES: CSE 174 with a grade of C- or better

Learning Outcomes:

By the end of this course, you should be able to:

1. Design and implement computer programs using object oriented programming techniques.
2. Write robust programs
3. Use permanent storage to preserve the state of a program
4. Use recursion as a problem solving technique
5. Describe and implement sorting algorithms
6. Design and develop applications with a graphical user interface

CSE 271 is a second-tier course in the CSE2 "Computer Programming" thematic sequence.

CSE 271 is a course in which you build upon the programming concepts and techniques learned in CSE 174 to design and implement more sophisticated programs using object-oriented design and programming techniques. You are expected to have a solid understanding and foundation of CSE 174.

Computer software plays an important role in our daily lives: Our mobile phones, laptop computers, online banking, Internet applications, video games and movies, cars, and almost all aspects of daily life are touched by software. In your personal and professional life you will utilize computer software. It is also likely that you will select, or even influence the design of, software that is used in your professional or personal life. This thematic sequence will give you a deep understanding of how

software works and is created, its limitations, and its potential. You will be able to read software and therefore be able to make informed decisions when selecting or participating in the design of business, scientific, or information systems that utilize computer software.

- CSE 174, Fundamentals of Programming and Problem Solving
- CSE 271, Object-Oriented Programming

Followed by **one** of the following courses...

- CSE 274, Data Abstraction and Data Structures
- CSE 252, Web Application Programming
- CSE 283, Data Communications and Networks

IMPORTANT DATES

Monday March 13th Exam 1 Location: TBA
 Wednesday Apr 19th Exam 2 Location: TBA
 Monday May 8th Final Examination – 8-10am, Room TBA

Thursday, Feb 9th Last day to drop a course without a grade
 Monday, April 3rd Last day to drop a course with a grade of “W”

Also, see <http://www.units.muohio.edu/reg/calendars/index.php> for the official university calendar.

TENTATIVE COURSE SCHEDULE

Subject to change due to conferences and guest speakers

Week	Date	Topics	Chapter	Notes
1	Jan 23 / Jan 25	Syllabus, Intro to Eclipse Review: Methods, Arrays and Array Lists High-Level Introduction of classes: Constructors, Methods, Data Encapsulation, Abstraction	5, 6	Lab 1
2	Jan 30 / Feb 1	Continuation of Arrays and Array lists File I/O & Exceptions	6, 7	Lab 2
3	Feb 6 / Feb 8	Object Oriented Programming Implementing Classes, Constructors, Accessors, Mutators, Encapsulation, Abstraction.	8.1 – 8.6	Lab 3
4	Feb 13 / Feb 15	Copy constructors, Testing Classes, Object References, Static Variables and Methods.	8.7-8.11	Lab 4
5	Feb 20 / Feb 22	Inheritance Polymorphism Abstract classes	9.1-9.3	Lab 5 Project 1 Out
6	Feb 27 / Mar 1	Interfaces Copy constructors	9.4-9.6	Lab 6
7	Mar 6 / Mar 8	Object-Oriented Design	12	Lab 7-8 released (Not due till Week 9)
8	Mar 13 / Mar 15	Mon March 13 – Exam 1 Monday – Class SWOT Analysis and Exam Review	12	No Lab but work on 7-8
~	Mar 20 / Mar 22	Spring Break		
9	Mar 27 / Mar 29	GUI Programming	10	Lab 9
10	Apr 3 / Apr 5	Advanced UI	11	Lab 10 CSE Alumni Conference
11	Apr 10/ Apr 12	Recursion	13	Project 2 out No Lab
12	Apr 17 / Apr 19	Advanced IO Wed Apr 19 – Exam 2	19 ~	Lab 11

13	Apr 24 / Apr 26	Sorting algorithms	14	Lab 12 (Due at end of Lab Period)
14	May 1 / May 3	Sorting Collections	14 15	Project 2 due Project 2 Demonstrations in Lab

Programming Style

All programming that is submitted as part of a lab or a programming assignment must follow the departmental Programming Style Guidelines. <http://miamioh.edu/cec/academics/departments/cse/academics/programming-style/index.html>

In particular, study the formatting, commenting, and naming conventions. Be consistent.

In addition to the requirements described by the style guidelines, the **closing braces for all methods and classes must be followed by an “end comment.”**

```

        ...
    } // end main
} // end HelloWorld class

```

Computer Science and Software Engineering Academic Integrity Expectations for Individual and Group Problem Solving Assignments

The Department of Computer Science and Software Engineering is committed to maintaining strict standards of academic integrity. The department expects each student to understand and comply with the University's Policy on Academic Integrity: <http://miamioh.edu/integrity/> and http://miamioh.edu/files/documents/secretary/Student_Handbook.pdf. Students may direct questions regarding academic integrity expectations to their instructor or to the department chair. All work submitted must be **original** for that class. Submitting the same project for two different classes, sections, or offerings is grounds for charging a student with academic misconduct unless prior written permission is received from **both** instructors.

“Problem Solving Assignments” are assignments that involve **programming, math, proofs, derivations, and puzzles**. The purpose of a problem solving assignment is for you to develop the skills necessary to solve similar problems in the future. To learn to solve problems you must solve the problems and write your solutions independently.

It is worth reiterating that the important aspect of our assignments is that you create the solution from start to finish; simply copying a solution and then **understanding it after the fact is not a substitute** for actually developing the solution and you will not learn as effectively.

The notion of academic integrity can be confusing in courses with substantial problem solving because certain forms of collaboration and investigation are permitted, but you are still required to complete your assignment independently. The following scenarios are meant to help distinguish between acceptable and unacceptable levels of collaboration and research, but are not all-inclusive:

ACCEPTABLE:

- Consulting solutions from the current course textbook, but not from other published sources.
- Seeking help on how to use the programming environment such as the editor, the compiler, or other tools.
- Seeking help on how to fix a program syntax error or how a certain language feature works.
- Discussing strategies with a fellow student on how to approach a particular problem. This discussion should not include significant sections of completed work or source code (including printouts, email, viewing on a monitor). Discussions should begin with a clean sheet of paper and end with conceptual drawings and/or pseudo-code.

UNACCEPTABLE:

- Looking at another solution including those written by current students, past students, or outside sources such as code or solutions found on the Web, or in publications other than the current class textbook.
- Using another solution as a starting point and then modifying the code or text as your own work.
- Providing a copy of your solution or a portion of your solution, in any form (electronic, hard copy, allowing another student to view your code on a monitor), to another student.
- Giving or receiving code fragments to fix a problem in a program.
- Submitting unoriginal work, as described above, from another academic offering.

If you are stuck on a problem and you are tempted to search for a solution on the Web or to look at another student's solution **STOP** and email or ask your instructor for help.

REQUIRED COURSE MATERIAL

1. **Textbook: Horstmann, Big Java Late Objects, Wiley, 2010, ISBN: 978-1-118-08788-6.**
It is available online at Safari books using your MiamiOh ID.

The textbook is available through **Safari Tech Books Online**. You can access Safari for free by going to <http://www.lib.muohio.edu>, selecting "Databases A-Z", and then "Safari Tech Books Online." You may need to log in with your Miami username and password. **HOWEVER, you cannot always rely on it being available as Safari allows only 100 people to access a resource at one time.**

Development Environment: There are many IDEs (Integrated Development Environments) for Java programming (BlueJ, DrJava, Eclipse, etc). The IDE we will be using in this class to develop Java programs is Eclipse. Eclipse is a free download (<http://www.eclipse.org>) and it is available on the workstations in Benton Hall.

COURSE COMPONENTS

Specific course components can be organized into five groups: lectures, laboratory work, project assignments, and examinations. There will be two midterm examinations, and one final examination.

Laboratory Work

Laboratories expose students to a variety of computer software tools, problem-solving paradigms, and computer environments. There will be several laboratory sessions this semester. You will be given problems, and will be expected to solve them. You will be allowed to use your textbook and notes, and ask me questions if you have difficulties. Some labs will be due by the end of the class; however, there may be some that I give additional time to complete. **YOU MUST ATTEND THE LAB SESSION (ATTENDANCE VERIFIED) IN ORDER TO GET FULL CREDIT FOR THE LAB** unless you email me first.

Project Assignments

This semester, you will have a number of project assignments. Please note the following in regards to projects:

1. You are expected to complete the assignments alone. **As far as the project assignments are concerned, I will consider group work as academic misconduct.** Please be aware that both in exams and in course assignments, I will NOT tolerate cheating. You may freely discuss your ideas and approaches concerning homework problems with your friends; but you should develop your own solutions independently. If you need help, please come and discuss your problems with me.
2. **I will not accept sloppy assignments.** ALL turned in code assignments must be documented with comments. Failure to do so will result in a loss of points for that assignment. If you are requested to supply additional documentation such as charts, make sure that you use either graphics software, or templates and standard paper they must be neat and free of spelling and grammatical errors. If you need to supply written documentation with your assignments, you should use a word processor – **NO HANDWRITTEN WORK WILL BE ACCEPTED.**
3. Your projects are to be turned in on or before the due date and time listed on the assignment. **I will not accept late assignments for any reason**

GRADING

The final grade will be a weighted average of the above categories:

2 examinations (2x12.5%)	25%
Final examination	25%
Labs/Programming Assignments	40%
Projects (2x5%)	10%

TOTAL	100%

STUDENT'S RESPONSIBILITIES

According to the Miami University Student Handbook, student responsibilities include:

- Attending class in accordance with University regulations;
- Being attentive during class, and participating constructively in class discussions;
- Doing the work assigned in each course to the best of their ability, and submitting it on time;
- Showing respect for instructors and fellow students at all times;
- Abiding by University regulations prohibiting academic misconduct (see Chapter 5 of Part 1 Undergraduate Academic Regulations);
- Endeavoring to ensure that the learning environment is free from all forms of prejudice that negatively influence student learning, such as those based on age, ethnicity, gender, mental or physical impairment, race, religion, sexual orientation, or gender identity.

ATTENDANCE

Attendance, as stated in the Miami University Student Handbook, Chapter 9, is required in this class. Below are extracts from the Student Handbook concerning class attendance.

“Every student is expected to attend every class session for which the student is duly registered. It is the prerogative of the individual faculty member to set attendance policy for each individual course, and it is the responsibility of the individual faculty member to inform students of that policy in the course syllabus or other written document within the first week of the semester.”

“Whenever a student is absent from class to such an extent as to make the student’s work inefficient or to impair the morale of the class, after the first 20 percent of the course the instructor may direct the University Registrar to drop the student from that course with a grade of W if before 60 percent of the course is complete, and with a grade of F if during the last 40 percent of the course. The instructor shall notify the student of this action no later than the time he or she notifies the Registrar.”

In case of an absence:

- inform me beforehand, if possible
- submit on time any work that is due
- In general, there are no make-ups for missed labs, quizzes, exams or other in-class work

Here is my lecture attendance policy: While I do not require you sign in for lectures, you are still required to attend every class. This is especially important because many classes will feature lab work or quizzes that cannot be made up.

Lab attendance is mandatory and recorded!

Please understand that an excused absence for a lab is listed below and PROPER PAPERWORK is REQUIRED for each on the day you return to class or prior to missing lab.

1. a physician-certified sickness/illness, or
2. a serious or important family problem (such as death, marriage, etc.), or
3. a serious personal problem (such as a traffic accident, a court appearance, etc.), or
4. a university-sponsored event (such as traveling out-of-town for a game or a meet if you are an athlete on a university team; however, this documentation needs to be supplied at the start of the semester).

If your absence is excusable, YOU MUST INFORM ME EITHER BEFORE OR IMMEDIATELY AFTER THE PERIOD DURING WHICH YOU WILL NOT BE ABLE TO ATTEND THE CLASS.

OFFICE HOURS

1. I have office hours each week to help you with your problems relevant to this course. The TAs will have multiple hours for this course.
2. If you cannot visit me during my office hours, you are welcome to contact me and make an appointment for a more suitable time.
3. You can use my office hours to request clarification of subjects pertaining to this course. If you have difficulties with homework problems, please do not expect me to give you the solutions; that would defeat the purpose of homework assignments. I will, however, provide you with hints. You can also go to the TAs for help.

E-MAIL COMMUNICATIONS

Of course, you are free to email me when you have a questions or concern. I will try to get back to you within 24 hours. Expect delays during busier weeks or if I am away at conferences.