George Mason University
Department of Computer Science

Object Oriented Programming – CS211
Spring 2020

Course Description: Thorough treatment of programming according to object-oriented principles. Introduces classes, interfaces, inheritance, polymorphism, and single dispatch as means to decompose problems. Covers intermediate programming techniques including error handling through exceptions, arrangement of source code into packages, and simple data structures. Intermediate debugging techniques and unit testing are covered.

Course Outcomes:
- An understanding of basic object-oriented programming concepts and principles
- An ability to apply basic object-oriented principles and techniques in the design and development of software systems using a specific programming language.
- An ability to effectively use both basic command line tools and sophisticated integrated development environments, and to understand the benefits and limitations of each.
- An ability to successfully perform debugging operations and techniques.

Course Prerequisites:
- CS112 (C or better)

Time:
- Lecture : Section 02 - MW 1:30 – 2:45 PM - Exploratory Hall - L004
                      Sections H01 & 005- MW 9:00- 10:15 AM   - Innovation Hall- 105
- Lab: TBA

Instructor:
Tessema Mengistu (Ph.D.)

Office: Engineering 2703

Phone: 703-993-6430

Email:tmengis-at-gmu.edu

Web Page: https://cs.gmu.edu/~tmengis/

Office Hours: TR 9:00 - 10:15 AM & 3:00 - 4:15 PM or by appointment

GTA:
TBA
UTA:
TBA

Text Book:

- GMU CS 211 Lab Manual available for free download from https://cs.gmu.edu/~marks/211/textbook/
- zyBooks Programming in Java available online at https://learn.zybooks.com/ (access code – GMUCS211Spring2020)
- (Optional)
  - Reges and Stepp Building Java Programs, 3rd ed. (online at https://practiceit.cs.washington.edu/

Course Webpage: https://cs.gmu.edu/~tmengis/courses/sp2020/

PIAZZA: Piazza will be used for all official announcements and online discussion; any information discussed on Piazza will be assumed to be known to students.

- Course schedule, announcements discussion. GTA/UTA contacts and office hours will be on Piazza too.
- Do not e-mail course staff about programming problems; use the discussion board.
- Use public posts on Piazza to discuss programming project requirements, labs, and other material related to the course.
- When prompted by a TA, use private posts on Piazza to share portions of your code pertaining to your questions. Don't share your project code in public posts.
- Email course staff only for logistical issues such as meeting outside of office hours, missing lab/lecture, grading disputes, medical situations, etc. Email addresses are listed on above and on Piazza.

BLACKBOARD: Blackboard will be used for course slides, assignments (including submissions), and grades as well as announcements.

Grading:

- Exercises (almost Weekly), zyBooks, quizzes, lab tasks: 20%
- Mini-Projects: 20%
- Mid exams (2): 20%
- Final Exam: 20%
- Final Project: 20%

Grading Scale:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
max	↑	97	91	89	87	81	79	77	71	69	59
min	98	92	90	88	82	80	78	72	70	60	↓

Course Tentative Schedule:

Week	Topics	Lab Text reading	zyBooks reading	Exercises & Quizzes	Remark
1	Introduction; Basics; Flow control	1,2	1-3 1-3 due	Exercise-1	
2	Arrays; Input/Output	3-5	4,5 4,5 due	Exercise-2 E1 due	
3	Classes; Objects; Methods; Fields	6	6-7 6-7 due	Exercise-3 E2 due	Mini-P1 due
4	Command line args; Packages; Javadocs	11,13	8,19 8 due	Quiz-1 E3 due	
Mid Term 1 (February 19)_					
6	Inheritance and Polymorphism;	7	10 10 due	Exercise-4	
7	Abstract classes; Interfaces; Enums	8,9	11 11 due	Exercise-5 E4 Due	Mini-P2 and Final Project Proposal Due
Spring Break					
9	Exceptions; Unit testing	10,12	12 12 due	Exercise-6 E5 due	
10	Generics	14	13 13 Due	Exercise-7 E6 due	Mini-P3 due
11	Collections, Lists & Queues		14 14 due	Quiz-2 E7 due	
Mid Term 2 (April 08)					
13	Recursion	15	15 15 due	Exercise-8	
14	Sort & search	16	16 16 due	Exercise-9 E8 due	Mini-P5 due
15	Inner and Anonymous classes and Lambda functions	A1		Quiz-3(online) E9 due	Final-Project Due
Final Exam Sec H01 -- TBA Sec 002 ----TBA Sec 005 ---- TBA					

Course Policy:

1. **Attendance**. Due to the nature of the course and the frequency of assignments, attendance is mandatory. You are totally responsible for all the announcements and for all the materials presented in the lectures and lab sessions. Come prepared for class. Read the assigned material in advance of lectures. If you have to miss class, please consult with your classmates so that you can find out what happened in class.
2. **Assignments**. There are several programming assignments. Additional help sessions for each lab assignment maybe scheduled after the assignment is posted. Please make sure that your

programs are properly documented and indented. You must talk to the instructor, not the TAs, for any grade appeal about an assignment, and it must be made within one week after the assignment is handed back. Late submission policy (up to 24 hours) is as follows: <=24 hours with 25% off, >24 hours &&<=48 hours with 50% off, > 48 hours will receive 0. Submission times are automatically recorded by Blackboard, and there is no distinction between a minute late and a day late. Please plan ahead to make sure that your submission is on time. Taking backups regularly is highly recommended.

3. **Exams**. There will be two midterm exams and one final exam, the midterms last around 1 hour and 2 hours for the final. All exams are in-class and closed-book (unless otherwise specified). Additional review and Q&A sessions will be scheduled prior to the exams. The time and location of the final exam is to be announced. There will be no make-ups except under very special circumstances. Any reason for a make-up must be approved by the instructor. By the Department of CS policy, a student must pass the final exam or the weighted average of all the three exams must be a passing grade (≥ 60) in order for a student to pass the course. The final exam is cumulative.

4. **Programming Environment**. All programs in lab assignments must compile and run in at least Java SE 8 environment. You can compile and run your source code from the command line or you can choose to use any IDE you prefer, for example Eclipse (recommended), NetBeans, DrJava or BlueJ. All of the necessary software can be freely installed on your PC. For any technical questions regarding software installation, lab assignments, Java programming, and development environment, please consult the GTA/UTA first. Programs that cannot be compiled or run will receive zero points.

5. **Honor Code**. All homework and lab assignments are to be done individually unless otherwise specified. You are allowed and even encouraged to verbally discuss the assignment material with your classmates or consult others for debugging assistance, but you must prepare the solution on your own. Plagiarism and other anti-intellectual behavior are not tolerated and are subject to severe penalties. For more information, please carefully read both the GMU Honor Code and the CS Department Honor Code. Any use of a direct contribution on any program, homework, quiz, or exam will be reported as a violation of the honor code.

6. **Project.** Projects are integrated part of this course. There are 5 mini-projects and one final project. For the final project, you are required to form a group of maximum four (2 for honor section students) students and develop a program by applying the concepts discussed in class. The title of the project should be submitted and approved by the instructor before you start working on it. The time for submitting a title and the final program is to be announced. Final project is not optional.

7. **Time Management**. This course is an extremely time-demanding course. Please plan your time wisely and start work on the assignments as soon as they are available. Nevertheless, this course is probably the most important and useful course in your Computer Science education.

8. **Special Accommodations**: Students who have a right to accommodations due to disabilities or other conditions should discuss this with the instructor as soon as possible. Accommodations will follow the recommendations of the University's Office of Disability Services.