

CSE 114, Introduction to Object-Oriented
Programming
Course Information

Summer 2021 Session 1

Stony Brook University

Instructor: Dr. Paul Fodor

<http://www.cs.stonybrook.edu/~cse114>

Course Description

- *“An introduction to procedural and object-oriented programming methodology. Topics include program structure, conditional and iterative programming, procedures, arrays and records, object classes, encapsulation, information hiding, inheritance, polymorphism, file I/O, and exceptions. Includes required laboratory”*

<https://www.cs.stonybrook.edu/students/Undergraduate-Studies/courses/CSE114>

- Prerequisites: Level 4 or higher on the math placement exam (or MAT 123+)
- **Advisory Prerequisite: CSE 101 or ISE108.**

Course Outcomes

- The following are the official course goals agreed upon by the faculty for this course:
 - An ability to program in an object-oriented language, using concepts such as object classes, encapsulation, inheritance, and polymorphism.
 - An ability to use fundamental data structures such as arrays.
 - An ability to program with sound code structure and use systematic software debugging and testing techniques.

Major Course topics

1. **Procedural Programming Basics:**
 - data types
 - variable declarations
 - assignment statements & expressions
 - input/output
 - textual manipulation & strings
 - conditional (branching) statements
 - iteration = loops and recursion
 - method construction

Major Course topics

2. Arrays:

- **collect data in arrays**
- **searching**
- **sorting**
- **array manipulations**

Major Course topics

3. **Object Oriented Programming:**
 - designing and constructing classes
 - aggregation
 - inheritance
 - polymorphism
 - abstract classes and interfaces

4. **Recursion**

Instructor Information

- Dr. Paul Fodor
214 New Computer Science Building
- Office hours: Mondays and Wednesdays 5-6:30PM on Google Meet
- Phone: 1 (631) 632-9820
- Email: paul (dot) fodor (at) stonybrook (dot) edu
 - Please include “CSE 114” in the email subject and your name in your email correspondence
- Course Web page: <http://www.cs.stonybrook.edu/~cse114>
- **Blackboard** will be used for assignments, grades and course material.

General Information

- Meeting Information (Class Time and Place):
 - Lecture: MoWe 9:30AM - 11:30AM, online on Zoom (see Blackboard for link).
 - Laboratory: MoWe 11:45AM - 1:00PM, online on Zoom (same link used by the lecture).

Textbook

- Optional: Introduction To Java Programming, Comprehensive Version, Author: Daniel Liang, Publisher: Pearson , Edition: 11th, 2017.

Software

- Necessary Software:
 - Java Developer Kit (JDK): download from <https://java.com/en/download/>
 - You should download JDK for your operating system (cost: free)
 - Eclipse IDE: <https://www.eclipse.org>
 - You should download the Eclipse IDE for Java Developers (cost: free)

Coursework

- Grading Schema
 - Grades will be based on homework and exams according to the following formula:
 - Homework assignments -- 15%
 - Labs -- 10%
 - Midterm exams (2) -- 50% (25% each)
 - Final exam -- 25%

Coursework

- Grade Cutoffs

- A [95-100], A- [90-95), B+ [87-90), B [83-87), B- [80-83), C+ [77-80), C [73-77), C- [70-73), D+ [65-70), D [60-65), F [0-60)

- SPECIAL RULE: If all your grades, including homework assignments, quizzes, recitation and your three exam grades are above the respective class averages, you're guaranteed to receive a grade of C or higher for this class.

Important Dates

- Midterm Exam #1: Wednesday, June 16, 2021, during class time 9:30-11:30am (120 minutes), online with LockDown Browser with Monitoring.
- Midterm Exam #2: Wednesday, June 30, 2021, during class time 9:30-11:30am (120 minutes), online with LockDown Browser with Monitoring.
- Final Exam: FINAL EXAM: Wednesday, July 14, 2021, during class time 9:30-11:30am (120 minutes), online with LockDown Browser with Monitoring.

Assignments

- Homework assignments due on fixed dates and times
 - **no late submission is permitted**
- All assignments should be submitted electronically
 - Blackboard

Lab exercises

- Simple Coding Exercises
 - TAs will present problems that you must implement and submit by the end of the day of the lab
 - Submit your lab work on Blackboard for lab credit by the end of the lab day
- 0 –3 points:
- 0 - Student did not submit the lab or program does not even compile
 - 1 - Student submitted the lab, program compiles but has major problems
 - 2 - Student submitted the lab, and program partially works (with some errors)
 - 3 - Student submitted the lab and the program is correct

Regrading of Homework/Exams

- Please meet with a grading TA or the instructor and arrange for regrading
- **You have one week from the day grades are posted or mailed or announced!**
- Late requests will not be entertained

Class Schedule

Week	Lecture Topics
1	Introduction to Computers, Programming and Java, Elementary Programming, Selections
2	Mathematical Functions, Characters, and Strings, Loops
3	Methods, Arrays
4	Multi-dimensional Arrays
5	Objects and Classes, Object-Oriented Thinking
6	Inheritance and Polymorphism
7	Exception Handling and Text I/O, Abstract Classes and Interfaces
8	Recursion

Student Accessibility Support Center

- If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential
- Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website:
<http://www.stonybrook.edu/ehs/fire/disabilities>
- **All documentation of disability is confidential**

Academic Integrity

- The following rules are posted in every course syllabus: *"Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. **Any suspected instance of academic dishonesty will be reported to the Academic Judiciary.** For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/"*

Academic Integrity

- You can discuss general assignment concepts with other students: explaining how to use systems or tools and helping others with high-level design issues
- You **MAY NOT share** assignments, source code or other answers by copying, retyping, looking at, or supplying a file
 - Assignments are subject to manual and automated similarity checking (We do check! and our tools for doing this are much better than cheaters think)
- If you cheat, you will be brought up on academic dishonesty charges - we follow the university policy:
 - <http://www.stonybrook.edu/uaa/academicjudiciary>

Examples of Academic Dishonesty

- Unpermitted collaboration (on a paper, homework, lab reports, etc.). Unless an instructor has explicitly approved working together, students should assume, for their own protection, that it is not permitted.
- Helping someone else to plagiarize from one's own homework (for example, by giving them a copy of yours, or doing it for them)
 - This includes having a public repository on Github that other students can copy from.
- Representing someone else's source code as one's own. If another person's code is being used, it must be properly cited.
- Buying or selling source code.
- Using source code or pieces of a paper from the internet without properly citing the source.

Academic Dishonesty

- The instructor makes a recommendation at the Academic Judiciary office
 - Cheating is cheating! No matter the amount of cheating or if one is the source or destination of cheating.
 - Do not cheat! You are cheating yourself.
 - Our job is to teach you the material and make sure that you learn it.
 - Our recommendation is always F for the cheaters!

Catastrophic events

- Major illness, death in family
- Formulate a plan (with your CEAS academic advisor) to get back on track
- Advice
 - Once you start running late, it's really hard to catch up

Piazza

- The Piazza discussion board should be used for all communication with the teaching staff for questions about the course assignments and material
 - Piazza is a forum for additional learning and assistance
 - You are expected to use the Piazza forum for all non-personal, course-related communication
 - Like questions about what a homework problem is asking, technical problems that need troubleshooting, or other questions that might be of interest to other students must be posted to Piazza and not emailed to the instructor or a TA

Piazza

- The following are NOT appropriate uses of Piazza:
 - cyber-bullying
 - posting memes
 - complaining about a grade
 - airing concerns/ comments/ criticisms about the course
 - posting more than a few lines of source code from an attempt at a homework problem
 - posting the solution to a homework problem or a link to a website containing the solution
 - in general, anything unrelated to the course material and student learning
- Anonymous posting is turned off, so we can see who you are.

Email Etiquette

- When emailing your instructor about the course, use the following guidelines to ensure a timely response:
 - use your official @stonybrook.edu email account (we cannot respond to other emails due to FERPA regulations)
 - use a descriptive subject line that includes "CSE114" and a brief note on the topic
 - begin with a proper greeting, such as "Hi Prof. Fodor"
 - briefly explain your question or concern or request including the course (we are teaching several courses)
 - end with a proper closing that includes your full name, Net ID and SBU ID number

What do you need to get started?

- Blackboard account
 - <http://blackboard.stonybrook.edu>
- Java Developer Kit 8 (JDK): download from <https://java.com/en/download/>
 - You should download JDK for your operating system (cost: free)
- Eclipse IDE: <https://www.eclipse.org>
 - You should download the Eclipse IDE for Java Developers (cost: free)
 - **Learn to use the debugger!!!**
- Optional: Liang's student Web site:
 - <https://yongdanielliang.github.io>

Tools for Writing Java Programs

- 1st Approach – the bare minimum
 - edit Java source code in text editor (ex: Notepad or Pico)
 - compile source code into class files from command line: `javac`
 - can be tedious
 - poor interactivity
- 2nd Approach – Integrated Development Environment (IDE)
 - combines writing, compiling, running and debugging Java code into a single application
 - makes coding much more efficient and organized
 - Eclipse, NetBeans, etc.

Java: How does it work?

- Java Source Code
 - you write *?????.java* files
- Compile your Program
javac *?????.java*
OR
 - *Build menu option in the Run menu* included in the Eclipse IDE
 - The Result is: Java Executable Code (bytecode)
 - *?????.class files* = Java bytecode - not humanly readable
- Now you can run your java program using the Java Virtual Machine (JVM):

java *YourProgramName*

OR *Run* button included in the Eclipse IDE

Please

- Please be on time
- Please show respect for your classmates
- Please turn off (or use vibrate for) your cellphones
- ...
- On-topic questions are welcome

Welcome
and Enjoy!