CpS 209 Object-Oriented Programming II 01 Fall 2024

College of Arts and Science

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Office Hours: MW   8:00-8:50am
                MW   10:00-10:50am
                TTH   1:00-2:30pm
                W   1:00-1:50pm
                F   8:00-10:50am
                M-F   12:00-12:50pm *by appointment only*

Course Information

Introduces fundamental concepts needed to support the development of desktop applications. Topics include GUI frameworks, object-oriented design with design patterns, model-view architecture, introductory generic programming, and functional programming techniques. *Prerequisite: CpS 110*.

Program Learning Outcomes (PLO):

- Write, debug, and test programs using the object-oriented paradigm
- Describe and apply standard object-oriented Design Patterns
- Develop graphical event-driven programs using a professional IDE and GUI framework

Course Resources

Website: Please keep up with the course page at https://bju.instructure.com/

Textbook: [The Java WorkshopLinks to an external site.](#)

Grading

Qty	Item	Points	Total		Scale:	
2	Quizzes	10	20		A	90-100%
10	Labs	10	100		B	80-89%
5	Programs	70	350		C	70-79%
1	Team Project	120	120		D	60-69%
2	Lab Tests	70	140		F	<60%
3	Written Tests	80	240			
Total Points:		950				

Programming Assignments: There are two types of assignments in the class: labs and programs. Labs are small-scale assignments that typically take an hour or two to complete. Programs are larger-scale assignments that will likely take many hours (10-15 or more). Programs are graded as follows:

- **60% Correctness:** Program produces correct results; runs according to specification. Attention to the program specification is very important here.
- **20% Style:** Code is written according to style guidelines and instructor's design requirements. Consistency and attention to detail are important. The goal is clear, easily understandable code, thoughtfully commented.
- **15% Reports:** Each program and project submission must be accompanied by a written report.
- **5% Submission:** Program assignment submitted according to instructions.

Course Policies

In this course, topics build on the previous topic. Thus, if you fall behind, you will struggle with new content. For this reason, I do not accept late work. Work is due at the deadline. **Late work receives a 0**. Notify me immediately if a situation arises necessitating an **extension**. Early, impressive work is encouraged and may result in extra credit.

Students are required to submit a reasonable attempt for all programming assignments, even if the attempt is too late to receive credit. Failure to submit a reasonable attempt for one or more assignments may result in a penalty of up to one letter grade on the final course grade.

Do not share class notes with anyone who is not enrolled in the same class section as you are during the same semester.

Professionalism

University classes are a place to sharpen your professional habits. Arrive on time. Dress appropriately. Engage with the material. Take pride in your work. Build relationships. Encourage growth in others.

University Policies

Handbook Policies

Compliance with student handbook policies is expected during class.

Attendance Policy

You are expected to attend class and be on time: https://home.bju.edu/bju-policies/Links to an external site.. A partial attendance will be recorded when you miss the beginning or end of a class. If you miss more than 15 minutes of class, you will be marked absent. Students who exceed the 3 allowed absences may be withdrawn from class.

If you need to miss class any reason, please contact me as soon as possible. Assignments and tests should be completed before planned absences.

Accommodations for Students with Disabilities

Students are required under Section 504 to communicate the need for accommodations and provide documentation to the Academic Resource Center Accommodations Office in AL 213. Visit https://success.bju.edu/Links to an external site. for more information. Students are encouraged to seek an appointment in the first week, as accommodations are not provided retroactively.

Academic Honesty and Integrity Policy

See the Computer Science Department's Academic Integrity Policy:

https://cs.bju.edu/academics/policies/academic-integrity-policy/Links to an external site.

Taking credit for someone else's work is unethical in any setting. In a university setting, it undermines the ability of faculty to accurately evaluate your competence, harming you and the reputation of the department. For these reasons, the penalties for academic dishonesty may be severe.

Generative AI

Since the goal of the assignments in this course is to learn to develop the skills covered NOT complete the tasks assigned, and since the use of AI to complete or jumpstart tasks defeats the goal of the assignments, you may not use generative AI tools (i.e. Chat GPT, Bing Chat, Google Bard, etc.) in this course for any assignment without the professors express permission. Should an AI tool be used with permission, its use must be documented.

Curriculum Information

Context

This course supports the following objectives of the Computer Science and Information Technologies programs:

CS 1. Design and implement solutions to practical problems

CS 8. Demonstrate understanding of fundamental concepts in the student's discipline

Learning Objectives

Objective	Content	Assessment
Write, debug, and test programs using the object-oriented paradigm (CS 1)		Programs 1-5 Lab Tests 1, 2 Test 1

Describe and apply standard object-oriented Design Patterns (CS 8)		Programs 3, 4; Test 3
Develop graphical event-driven programs using a professional IDE and GUI framework (CS 1)		Programs 1-5; Test 2

Tentative Schedule

Day	Topic	Text/Asgs	Due
Wed, Aug 28	Java Fundamentals		
Thu, Aug 29	Lab 1		
Fri, Aug 30	Classes, Gradle	Chapter 1: Getting StartedLinks to an external site.	
Mon, Sep 02	*Labor Day, no class*	How to Videos	
Wed, Sep 04	Unit Testing, More Java; Program 1	Chapter 2: BasicsLinks to an external site.	
Thu, Sep 05	Lab 2		Lab 1
Fri, Sep 06	Arrays, Lists, Factory Methods; Strings	Chapter 3: OOPLinks to an external site.	
Mon, Sep 09	Test 1 topics		
Wed, Sep 11	File formats, PNG Format, File IO	Chapter 4: CollectionsLinks to an external site.	Quiz 1 Quiz 2
Thu, Sep 12	Lab 3		Lab 2
Fri, Sep 13	Test 1	Chapter 5: ExceptionsLinks to an external site.	Program 1
Mon, Sep 16	GUI Apps, Interfaces		
Wed, Sep 18	Design a Reader, OO Design		

Thu, Sep 19	Lab 4		Lab 3
Fri, Sep 20	TDD, Model-View Architecture		
Mon, Sep 23	GUI Programming, Test 2 topics		
Wed, Sep 25	*Reach week, no class*		
Thu, Sep 26	Lab 5		Lab 4
Fri, Sep 27	Inheritance		Program 2
Mon, Sep 30	Test 2	Lab Test 1 Practice	
Wed, Oct 02	Class Hierarchies		
Thu, Oct 03	Lab Test 1		
Fri, Oct 04	Even More Java		
Mon, Oct 07	Dynamic Controls		
Wed, Oct 09	Anonymous Methods		
Thu, Oct 10	Lab 6		Lab 5
Fri, Oct 11	Observer Pattern	Chapter 13: Function ProgrammingLinks to an external site.	Program 3
Mon, Oct 14	Timers, Animation, Sound		
Wed, Oct 16	Intro to Git		
Thu, Oct 17	Lab 7		Lab 6
Fri, Oct 18	Functional Programming	Chapter 15: StreamsLinks to an external site.	
Mon, Oct 21	*Fall break, no class*		
Wed, Oct 23	Generics, Choose teams	Lab Test 2 Practice	Program 4
Thu, Oct 24	Lab: Proposal		

Date	Topic		
Fri, Oct 25	Command Pattern, Test 3 Topics, Project Introduction	[Command PatternLinks to an external site.](#)	
Mon, Oct 28	Test 3		
Wed, Oct 30	State Pattern, State Machines		
Thu, Oct 31	Work day		
Fri, Nov 01	Project Proposal Presentations		Project Proposal Presentations [Proposal](#)
Mon, Nov 04	Git		
Wed, Nov 06	Data binding		[Program 5: Wednesday](#)
Thu, Nov 07	[Lab 8: Git](#)		[Lab 7](#)
Fri, Nov 08	Serialization		
Mon, Nov 11	Design Patterns, Dependency Inversion		
Wed, Nov 13	Multithreading, Multithreading with Servers		
Thu, Nov 14	[Lab Test 2](#)		[1st Sprint](#)
Fri, Nov 15	Asynchronous Methods		
Mon, Nov 18	Workday		
Wed, Nov 20			
Thu, Nov 21	[Lab 9](#)		[Lab 8: Git](#)
Fri, Nov 22	Workday		[2nd Sprint](#)
Mon, Nov 25	*Thanksgiving break*		
Wed, Nov 27	*Thanksgiving break*		
Thu, Nov 28	*Thanksgiving break*		

Fri, Nov 29	*Thanksgiving break*		
Mon, Dec 02	Workday		
Wed, Dec 04	Workday		
Thu, Dec 05	Lab 10		Lab 9
Fri, Dec 06	Workday		
Mon, Dec 09	Workday		
Wed, Dec 11	Workday		
Thu, Dec 12	Workday, Lab 11		Lab 10; Final Sprint
Fri, Dec 13	Project Demos, Exam Topics		Lab 11; Demos
Wed, Dec 18	3:30-4:40 p.m. Final		