Information Sciences and Technology (IST)
Penn State Beaver
100 University Drive, Monaca PA 15061
Telephone: 724-773-3800

COURSE SYLLABUS
[IST 311: OBJECT-ORIENTED DESIGN AND SOFTWARE APPLICATIONS]

Catalogue Description:

This course is intended to provide students with a background in object-oriented design and object-oriented application development. Students will learn the fundamentals of object-oriented analysis, design, and modeling. They will apply design concepts and develop the skills necessary to bring an idea through the different phases of the application development lifecycle. The course normally involves students working on teams to design and develop working application prototypes.

Upon completion of this course, students will be able to apply object-oriented design principles using object-oriented modeling and programming languages, show how object-oriented principles increase the quality of complex applications, and begin development of the team skills necessary when developing complex systems.

Prerequisite(s):	IST 242 or CMPSC221
Class Time & Location:	MWF 2:30 PM - 3:20 PM, MBB 108 & Frable Bldg 221
Website:	Canvas
Course Credits:	3
Class Delivery Mode:	On campus and via Polycom

Instructor Information

Instructor:	Dr. Richard Lomotey
Contact:	Email**:** rkl5137@psu.edu
	Office Phone: [724 773 3814]
Office Hours:	Location**:** 119 MBB (Michael Baker Building)
	Hours**:** 12.00 Noon – 1.30 PM, MWF, or immediately after class

Course Objectives

Upon completion of the course, students will be able to:

- Explain the foundations of the object-oriented software paradigm.
- Explain the central issues in software design and development.
- Use the Java programming language and some of its core class libraries.
- Design and create a basic, windowed, event-driven application in Java.
- Advanced Java concepts
- Applets
- Database programming in Java

Student Evaluation

Grading Scheme

Class Participation	10%
Home Work Assignments	20%
Project	30%
Midterm Exam	15%
Final Exam	25%
Total	**100%**

There will be bi-weekly assignments. The assignments are due end of the second week but students can negotiate for extension based on merit (e.g., documented health conditions, etc.). Projects will be graded during the last week of classes.

Some of the assignments will require individual attempts while some can be done in groups. The class project can be completed in teams (strongly encouraged) or in some exceptional scenarios, individual projects will be accepted. Students should discuss their challenges with the instructor regarding projects and assignments.

Criteria that must be met to pass the course

At least grade C in the following: Homework assignments, projects, midterm exam, and the final exam.

Attendance Policy

Although attendance is not mandatory, your participation grade is based on your presence and involvement in class activities. Therefore, attendance is strongly recommended, and failure to regularly attend class will negatively impact your participation grade. Students are expected to act accordingly during class time, and engagement and involvement in class is crucial to meeting the objectives of the course. To minimize distractions, the use of cell phones and other electronics during class time is prohibited.

Final Exam Policy

Exams will be administered on Angel, and students are expected to complete exams during the allotted class time. All exams must be completed individually and cheating will not be tolerated.

Note: All students must be properly registered in order to attend lectures and receive credit for this course.

Textbook Information

Required Text

- Horstmann, Cay S., Big Java: Late Objects, Edition: 6, Publisher: John Wiley & Sons, ISBN: 9781118087886

Recommended Texts

- Benjamin J Evans; David Flanagan, Java in a Nutshell, 6th Edition, ISBN: 9781449370824)

Recommended Sources

- Use this site to revise and practice the foundational concept in Java: http://www.learnjavaonline.org

Lecture Schedule (Tentative)

Week	Major Items	Topics	Slides/References
Week 1	HW1	• The fundamental concepts in OOP • Decisions and Control Structures	Chapter (1, 2, 3, 4)
Week 2			
Week 3	HW2	• Data Modeling	Chapter (5, 8)
Week 4		• Collections	Chapter (6, 15)
Week 5	HW3 Submission of Project Proposal	• Encapsulation • Polymorphism • Abstraction	Chapter (9)
Week 6		• Applets	
Week 7	Midterm Exam	Review	
Week 8	Submission of project evaluation plans	• Multithreading	Chapter (20)
Week 9		• Relational Databases	Chapter (21, 24)
Week 10	HW4		Chapter (21)
Week 11			Chapter (22)
Week 12	Focus on Project		
Week 13		• JavaBeans, JSF	Chapter (24)
Week 14	Project Presentations	Projects	
Week 15	Review and Final Exam		

Students are advised that the class schedule can shift based on holidays (e.g., thanksgiving, etc.). Students will be duly informed of such changes.

Policies

Recording of Lectures

Students should seek approval from the instructor.

Late Assignments

Discuss with the instructor but there will be 5% penalty when valid reason(s) are not given for the late submission.

Missed Assignments

Discuss with the instructor

Missed Examinations

Contact the instructor on the guidelines to apply for **deferred** exam if it is permissible by the University.

Grading Policy

Grades will be assigned based on performance in the course. Grades that are on the border of will be rounded to the nearest percent and subject to instructor's evaluation: In other words, students who are diligent and put forth substantial effort will likely be rounded up, while those who miss class and hand in assignments late will be rounded down. This only applies to grades on the boundary of two grades.

The grading scale adopted is as follows:

Grading Scale	Grade
94-100	A
90-93	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
65-69	D
Below 65	F

Incomplete Course Work and Final Grades

See the instructor for suggestions and possible guidelines

Academic Integrity

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. Academic integrity includes a commitment by all members of the University community not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others. For additional information, please consult the IST department's site for academic integrity at www.ist.psu.edu/current-students/academic-integrity

Disability Policy

Penn State Beaver welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments, we can help you to receive those adjustments and prepare you to accomplish your academic goals. To make arrangements to receive accommodations at Penn State Beaver for a documented disability, you will need to meet with the Disability Contact Liaison, Ms. Jill M. Tress, 105 RAB, jmt31@psu.edu.