

CS 3354.006: Object-Oriented Design and Programming

Fall 2019

updated Oct 15 2019

Instructor	Dr. Jelena Tešić (pronounced as Yeh-LE-nah TE-shich)
Contact	jtesic@txstate.edu (office x5-3436)
Faculty Profile	https://cs.txstate.edu/accounts/profiles/j_t463/
Student Hours	Tue 11:30 a.m. – 1:30 p.m. Thu 3:30 p.m. – 6 p.m. @ Comal 307B
TA	James Steckler, jes270@txstate.edu
Student Hours	Mon Wed 12:30 – 2 p.m. Comal 209 email him to set appt or to get help with git and assignments
Class Meets	Tue Thu 2:00 p.m. - 3:20 p.m. @ IGRM 03104
Open Labs	DERR 231 (Linux Lab) MCS 590 (Windows Lab)
Prerequisites	Grade of C or better in CS 2308

Course Material

Required course material is online textbook w Labs:

1. Sign in or create an account at <https://learn.zybooks.com/>
 2. Enter zyBook code: TXSTATECS3354Fall2019
 3. Subscriptions will last until Dec 30, 2019, you get to keep the pdf file
- Additional class slides, notes, and source code posted on <https://git.txstate.edu/CS3354/src>

Course Description

The course covers object-oriented design principles and programming for students **with prior** programming experience. The topics include inheritance and polymorphism, object-oriented design process, UML diagrams, design patterns, exception handling and multithreading. Students will design and implement programs in Java.

Course Objectives

At the end of the semester the student should be able to:

- Design, implement, test, and debug programs in an object-oriented programming language: Java.
- Describe the unique features of Java.
- Read and write Java programs that use generic types and data types from the Java Collections library.
- Describe the concepts of inheritance and polymorphism and incorporate them into Java programs using abstract classes and interfaces.
- Describe how the class mechanism supports encapsulation, information hiding, and interfaces.
- Develop programs using multiple classes and composition.
- Read and write Java programs that use persistence (serializable objects).
- Describe and apply the Object-oriented design process to design a Java program.
- Describe the semantics of exception handling in Java, and use it to write reliable Java code.
- Read, design, and draw the following models using the Unified Modeling Language (UML)
- Write Java code that implements the designs specified by UML diagrams.
- Describe the following Design Patterns and create UML designs using them and implement the

- designs in Java programs.
- Determine the proper design pattern for a given problem.
- Use Javadoc to specify the interface (API) of Java objects.
- Understand and apply event-driven programming principles by developing programs with a graphical user interface, using objects from the Java Swing library.
- Read and write Java programs that use threads to implement concurrency.

What is expected of student registered for CS 3354.253 in Fall 2019?

Students are expected to:

- (1) Attend instructional meetings
- (2) Do not distract or disrupt students during instructional meetings
- (3) **Read announcements** from the instructor posted on TRACS course site.
- (4) Complete participation assignment on zyBooks (due Tue 2 p.m. for the week)
- (5) Be informed and prepared for the class
- (6) **Submit participation assignment, homework, and programming assignment on time**
- (7) Group assignment means the entire group gets an identical grade score. Each student in the group MUST submit the programming assignments to its git.txstate.edu repository.
- (8) Check grading, and grade grievance policy
- (9) Take midterm and final exam in the classroom during the exam time
- (10) Clearly communicate with the instructor regarding any issues, delays or unforeseen circumstances in timely manner. Emailing is the fastest way to reach the instructor.

Grading

What	Grade Percentage	Date (if applicable)
Active Learning in the Classroom	5%	Attendance, active responses
Participation assignments in zyBooks (labeled Participation #x)	10%	Weekly, posted on zyBooks (#1-#6, #8, #10) and TRACS (#7, #9). Due Tuesday 2 p.m.
Homework assignments (labeled HW #x)	24%	Due times posted on zyBooks (#1-#8). 1-3 due Thursday 2 p.m. 4-8 due Tuesday 2 p.m.
Three Programming Assignments	21%	Posted on TRACS and git.txstate.edu
Midterm	15%	Thu Oct 10 2 p.m. - 3:20 p.m.
Final	25%	Tue Dec 10 2:00 p.m. - 4:30 p.m.

Assignments

- All zybooks work due will be on zybooks. Check it regularly. There will be no deadline warning on TRACS
 - **Participation assignments:** help students catch up with class pace, get introduced to the material (pre-reading), and revisit programming concepts that are needed to follow the lectures. Each participation assignment is ~ 1% of the final grade point.
 - **Homework assignments:** test students on material covered in-depth in class. Each homework assignment is ~3% of the final grade point.
 - Chapters and sections marked Optional: additional practice Labs available for students that want to polish their programming skills in Java. We will not have time to cover examples in the class.
- Three programming assignments will be announced using TRACS Assignment Tool.

- All three assignments will cover coding, documentation, code review, drawing UML models, explaining and implementing design patterns, concurrency.
- Three programming assignments need to be submitted to git.txstate.edu/CS3354/NetID.git repository.
- The assignments need to be submitted by each individual student.
- Students can work in pairs, and they should submit the assignment naming the partner – both students need to submit the assignments.
- **There is no assignment deadline extension: if assignments are not submitted in time, they are not accepted. Due date for all 3 assignment is 2:00 pm Tuesday**

Schedule

	Lecture	Assignment
Aug 27	01 Introduction	
Aug 29	02 Java Programming 1	
Sep 3	03 Java Programming 2	Participation #1 due
Sep 5	04 Introduction to Objects and Methods	HW #1 due
Sep 10	05 Data Types Branches Loops Arrays	Participation #2 due
Sep 12	06 IntelliJ Tutorial/Methods	HW #2 due
Sep 17	07 Input Output Exceptions	Participation #3 due
Sep 19	08 Classes	HW #3 due
Sep 24	09 Inheritance	Participation #4; HW #4 due
Sep 26	10 Object Oriented Concepts	
Oct 1	11 Object Oriented Principles	Participation #5; HW #5 due
Oct 3	12 Collections and Generics	
Oct 8	13 Review	
Oct 10	14 Midterm	
Oct 15	15 UML 1	Programming Assign #1 due
Oct 17	16 UML 2	
Oct 22	17 UML 3	Participation #6; Peer reviews for Assign 1 due
Oct 24	18 Java GUI	
Oct 29	19 Java GUI	Participation #7; HW #6 due
Oct 31	20 Java FX	
Nov 5	21 Search and Sort	Participation #8; HW #7 due
Nov 7	22 Recursion and Threads	
Nov 12	23 Java Concurrency	HW #8 due
Nov 14	24 Design Patterns 1	
Nov 19	25 Design Patterns 2	Programming Assign #2 due
Nov 21	26 Design Patterns 3	
Nov 26	27 Java Object Model Summary	Participation #9;
Dec 3	28 Review	Participation #10;
Dec 5	29 Review and Research	Programming Assign #3 due
Dec 10	Final Exam 2-4:30 pm	

Policies

Grade Grievance Policy: If a student believes a mistake has been made in grading an assignment, the student has one week after an assignment is returned to resubmit an assignment for re-grading if they believe there is an error.

Drop Policy Students will not be automatically dropped for non-attendance: if you are planning to drop the class or withdraw from the class, follow the instructions listed on registrar's web site:

<http://www.registrar.txstate.edu/registration/drop-a-class.html>

It is student's responsibility to be familiar with the University Policy on dropping classes as described in the catalog and the TXSTATE website (see), to observe relevant deadlines, and to follow proper procedures for dropping classes.

Incomplete Policy Computer Science department has a strict policy regarding 'Incomplete grade'. It has to be approved by the chairman and thus an 'Incomplete grade' will only be granted under unexpected and truly severe situations, which must be supported by some official documents.

Makeup Policy Zybooks pre-reading cannot be made up. Three programming assignments **cannot** be made up. Midterm exam cannot be made up. Final exam may be made up in exceptional circumstances, with approval from the instructor.

E-mail Policy: During the work week, instructor will respond to personal emails during working hours, within 24 hour window. Instructor will review communication over the weekend but will respond on Monday to most situations. If you need to reach me by email, please use the subject line: Your Name, Course Name/Number, Topic. Please allow a full 24 hours before emailing me again about the same question or issue, and on Monday for inquiries sent over the weekend.

Extra Credit Policy: There is no extra credit or make up assignment available for this class.

Plagiarism Policy: Except where explicitly and specially allowed (such as group project), all work submitted in class is expected to be your individual work. Plagiarism will not be tolerated and if detected will result in an automatic 'F' grade. Please refer to <http://www.txstate.edu/effective/upps/upps-07-10-01.html> for Texas State's Honor Code.

Do not copy "as is" code from the open source in your assignment: use of open source is encouraged, but personal stamp on comments classes and flow needs to be visible – penalty is 0 points for the assignment.

Communication

Best way to contact the instructor is to send her an email. All announcements, resources, and updated will be posted on TRACS <https://tracs.txstate.edu/> We will use the TRACS website largely for the Announcements (Announcement Tool), Three Programming Assignments description (Assignments Tool) and Grades (Gradebook Tool).

GutHub

Students will submit programming assignments through <https://git.txstate.edu>. Your login is your NetID. If you have questions about using git, please contact cs_helpdesk@txstate.edu. Students repository for the class is <https://git.txstate.edu/CS3354/<NetID>.git>

Accommodations for students with disability

Any student requiring special accommodations, should inform me during the first two weeks of classes. The student should also contact the office of disability services at the LBJ student center. Students who qualify for extra time for exams must take their test with ATSD and must schedule their test at the same

time the test is given in class.

Academic Honor Code and Conduct

You are expected to adhere to

- the University's Academic Honor Code <http://www.txstate.edu/honorcodecouncil/Academic-Integrity.html>
- Code of Student Conduct - <http://www.dos.txstate.edu/handbook/rules/cosc.html>
- Texas State Mission and Shared Values: <http://universityplan2023.avpie.txstate.edu/overview/Texas-State-Mission-and-Goals.html>.

Relevant Campus Resources

cs.txstate.edu -> News, Job Announcements, Lab and Tutoring Announcements (@txstCS)

Free Online Courses through LinkedIn Learning Hub: <https://doit.txstate.edu/services/online-training.html>

Food Insecurity: Bobcat Bounty is the first student-run, on-campus food pantry at Texas State University. It is run by students under the direction of faculty from the Food Security Learning Community in the Nutrition & Foods Program. Our goal is to decrease food insecurity by providing healthy food to the students, faculty, and administration at Texas State University. The majority of our food comes from the Hays County Food Bank, a partnership to create a grocery store style experience for clients.

<https://bobcatbounty.txstate.edu/Eligibility.html>

Texas State Counseling Center: Counseling Center services are free, confidential, and provided by trained professionals to currently enrolled Texas State students while classes are in session. Counseling Center Services include brief individual, group, and couples counseling, consultation and crisis response, and workshops about coping with stress and other mental health topics.

<https://www.counseling.txstate.edu/>

Texas State Sexual Misconduct Policy and Reporting: If you need to make a report, please contact Ameerah McBride, Title IX Coordinator at 512.245.2539 or you can file a report for someone else, anonymously, or using a pseudonym here:

https://cm.maxient.com/reportingform.php?TexasStateUniv&layout_id=10

Title IX details: <https://www.txstate.edu/oei/title-IX.html>

Discrimination Complaints: Texas State prohibits discrimination and harassment on the basis of race, color, national origin, age, sex, religion, disability, veterans' status, sexual orientation, gender identity, or gender expression. Additionally, Texas State prohibits retaliation against a person who files a harassment or discrimination complaint, or who assists or participates in the investigation of a report.

<https://www.txstate.edu/oei/policies/complaints.html>

Download the discrimination complaint form:

<https://gato-docs.its.txstate.edu/jcr:1376ecad-b820-4bb5-bd4a-508ef63844f0/Discrimination%20Complaint%20Form.v3.fillable.pdf>

Office of Student Diversity and Inclusion: <https://www.sdi.txstate.edu/>

Texas State Alliance: <https://twitter.com/TxstAlliance>
<https://www.sdi.txstate.edu/Support-and-Empowerment/LGBTQIA-and-Allies.html>

Full List of On-Campus Resources:

<https://www.studentsuccess.txstate.edu/programs/faces/On-Campus-Resources.html>

Search Student Organizations:

<https://www.lbjsc.txstate.edu/soc/join/search-orgs.html>