CS 3354: Object-Oriented Design and Programming
Spring 2018

Instructor: Dr. Jelena Tešić (pronounced as Yeh-LE-nah TE-shich)
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Faculty Profile: https://cs.txstate.edu/accounts/profiles/j_t463/
Office Hours: Monday Wednesday 11:30 p.m. – 1 p.m. and by appt.

Section Information: CS3354-262
Class Meetings: Monday Wednesday 2:00 p.m. - 3:20 p.m., FAB 102
Open Labs: DERR 231 (Linux Lab) MCS 590 (Windows Lab)

Prerequisites: Grade of C or better in CS 2308

Course Material
1. Class slides, notes, and source code posted on TRACS, No required textbook
2. Suggested Textbooks:

   - HEAD FIRST JAVA
   - HEAD FIRST OBJECT-ORIENTED ANALYSIS
   - HEAD FIRST DESIGN PATTERNS
   Please contact the instructor for more recommendations.

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.

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/dropping-or-withdrawing.html
What is expected of student registered for CS 3354-262 in Spring 2018?

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. Be informed and prepared for the class
5. **Submit homework assignments on time**
6. Complete individual assignments by yourself. Help will be provided during office hours of an instructor and a teaching assistant.
7. Participate in the completion of a group assignment. Group assignment means the entire group gets an identical grade score.
8. Take midterm and final exam in the classroom during the exam time
9. Clearly communicate with the instructor regarding and issues, delays or unforeseen circumstances in timely manner. Emailing is the fastest way to reach the instructor.

### Grading

<table>
<thead>
<tr>
<th>What</th>
<th>Grade Percentage</th>
<th>Date (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework and Programming Assignments</td>
<td>40%</td>
<td>Due date in TRACS and announced in the class</td>
</tr>
<tr>
<td>Midterm</td>
<td>25%</td>
<td>Wednesday Mar 5 2 p.m. (to be confirmed)</td>
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<tr>
<td>Final</td>
<td>30%</td>
<td>Monday May 7th 2-4:30 p.m.</td>
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<tr>
<td>Quizzes and Class Participation</td>
<td>5%</td>
<td>Class attendance, unannounced quizzes, participation.</td>
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### Assignments

The homework assignments involve drawing models and providing some written explanations. The programming assignments involve developing programs in Java. You will submit your assignments using TRACS. Penalty for including anything but java and/or .pdf files is **10pt per assignment**.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Post Date</th>
<th>Due Date</th>
<th>Late Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 24</td>
<td>Feb 7</td>
<td>Feb 9</td>
</tr>
<tr>
<td>2</td>
<td>Feb 7</td>
<td>Feb 21</td>
<td>Feb 23</td>
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<tr>
<td>3</td>
<td>Feb 21</td>
<td>Mar 7</td>
<td>Mar 9</td>
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<tr>
<td>4</td>
<td>Mar 9</td>
<td>Mar 28</td>
<td>Mar 30</td>
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<td>5</td>
<td>Mar 28</td>
<td>Apr 18</td>
<td>Apr 20</td>
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<td>6</td>
<td>Apr 20</td>
<td>May 2</td>
<td>May 4</td>
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Late assignments will incur 2-point (out of 100 point) penalty per day, for up to 2 days. After the 2 days, no submission will be accepted. Last day of submission is listed in the table above. Submission time is always 11:55 p.m. on a given date.

Makeup Policy: Exercises and programming assignments cannot be made up. Midterm exam cannot be make 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 within 24 hours. 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.

TRACS URL: https://tracs.txstate.edu/
We will use the TRACS website for the following:
- Announcements (Announcement Tool)
- Grades (Gradebook tool)
- Programming assignment submissions (Assignments tool)
- Attendance (Attendance tool)
- Resources (Resources tool)
  - Lectures – pdf copies of lecture notes posted prior to the lecture
  - src – source code covered in lectures and useful examples for your programming assignments
  - videos – video capture of writing, compiling, and running the code in lecture

Do not list
- Do not email your program to anyone except your partner (if approved by instructor) and
- Do not include the code from the open source in your assignment (unless it is approved by the instructor) – penalty is 0 points for the assignment.
- All assignments must be done either individually or in pairs or in groups, instructor will clearly specify the grouping for each assignment.

Course Topics
1. Java Programming
2. Javadoc and Java I/O
3. Java Exceptions
4. Object Oriented Design
5. UML
6. Java Collections Framework
7. Java Logging and Unit Testing
8. Java GUI
9. Design Patterns
10. Java Concurrency
11. Java Object Model
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.
- Describe the semantics of exception handling in Java, and use it to write reliable Java code.
- Read and write Java programs that use persistence (serializable objects).
- Read and write Java programs that use threads to implement concurrency.
- Describe and apply the Object-oriented design process to design a Java program.
- 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.

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]