# **Object-Oriented Programming**

CS - 1410 002

# Course Student Learning Outcomes

- Implement classes with appropriate attributes and behaviors.
- Create a hierarchy of classes through inheritance, implement polymorphic behavior using methods and interfaces, and visualize classes and their relationships with Unified Modeling Language (UML) class diagrams.
- Implement and utilize generic methods and classes in a programming project to enhance code reusability, type safety, and demonstrate polymorphic behavior.
- Design and implement a Graphical User Interface.
- Manipulate data accessed through multiple I/O techniques, including reading from and writing to files, and implement object-oriented exception handling mechanisms.
- Use an automated testing framework to validate code functionality and incorporate doc comments to increase the readability of the code.
- Collaborate with team members to design, implement, and test an object-oriented computer program.
- Construct recursive methods that provide a specified functionality.

# **Engagement Plan**

#### Example language:

- I will respond to email within 1 day. I will offer feedback on major assignments within 1 day. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.
- In this course I will be posting interactive announcements which will offer specific opportunities for class questions and extra credit every other week.

- Additionally, I will be participating in the discussion forums with you to share my perspective within the discipline and to offer some nuances of interpretation that may not be present in your textbook.
- Lastly, we'll be holding small group Q & A sessions, where we can learn from our peers (and faculty) on some of the more difficult units within the course.

# Brief Description of Assignments/Exams

Assignments and Exams will mostly be coding based. The Final is a multiple choice style quiz but the primary objective of the class is to give the students practical experience in programming.

# Assignment Schedule

| Due Date | Assignment Name                          | Assignment Type | Points |
|----------|--|-----------------|--------|
|          | Bonus Points                             | Assignment      | 0      |
|          | Introduce Yourself                       | Discussion      | 0      |
|          | Introduce Yourself                       | Discussion      | 0      |
|          | Introduce Yourself                       | Discussion      | 0      |
|          | <u>Jamboree Reflection</u> <u>15 XC</u>  | Assignment      | 0      |
| 2/19/25  | Practice - Interfaces<br>from Java API   | Quiz            | 0      |
| 8/30/25  | Academic Honesty                         | Quiz            | 6      |
| 8/30/25  | <u>Discussion - This Is</u><br><u>Me</u> | Discussion      | 8      |
| 8/30/25  | <u> Lab - Getting Started</u>            | Assignment      | 10     |
| 8/30/25  | Programming Survey Study Group           | Quiz            | 3      |

| Due Date | Assignment Name   | Assignment Type | Points |
|----------|---|-----------------|--------|
| 8/30/25  | Quiz Orientation  | Quiz            | 19     |
| 9/3/25   | <u>Lab - Doc Comments</u><br><u>  JAR</u>               | Assignment      | 10     |
| 9/3/25   | <u>Team Assignment -</u><br><u>Partner</u>              | Assignment      | 5      |
| 9/3/25   | <u>Video &amp; Quiz - Java</u><br><u>Doc #1</u>         | Quiz            | 6      |
| 9/3/25   | <u>Video &amp; Quiz - Java</u><br><u>Doc #2</u>         | Quiz            | 2      |
| 9/3/25   | <u>Video &amp; Quiz -</u><br><u>Runnable JAR</u>        | Quiz            | 3      |
| 9/7/25   | Review - 1400 Java<br>Terms                             | Quiz            | 23     |
| 9/8/25   | <u>Lab - Text</u><br><u>Manipulation</u>                | Assignment      | 10     |
| 9/8/25   | <u>Video &amp; Quiz - Class</u><br><u>String</u>        | Quiz            | 5      |
| 9/8/25   | <u>Video &amp; Quiz - Class</u><br><u>StringBuilder</u> | Quiz            | 5      |
| 9/10/25  | <u>Lab - jUnit</u>                                      | Assignment      | 10     |
| 9/10/25  | <u>Video &amp; Quiz - jUnit #1</u>                      | Quiz            | 5      |
| 9/10/25  | <u>Video &amp; Quiz - jUnit</u><br>#2                   | Quiz            | 4      |
| 9/13/25  | Assignment - Text  Manipulation   jUnit                 | Assignment      | 40     |
| 9/15/25  | <u>Lab - Recursion</u><br><u>JUnit</u>                  | Assignment      | 15     |

| Due Date | Assignment Name   | Assignment Type | Points |
|----------|---|-----------------|--------|
| 9/15/25  | Video & Quiz -<br>Recursion #1                          | Quiz            | 5      |
| 9/17/25  | Module 01 Test  | Quiz            | 50     |
| 9/22/25  | Lab - Inheritance and Polymorphism_PLO-CS-1             | Assignment      | 10     |
| 9/22/25  | <u>Video &amp; Quiz -</u><br><u>Inheritance Part 1</u>  | Quiz            | 5      |
| 9/22/25  | Video & Quiz -<br>Inheritance Part 1<br>Code            | Quiz            | 3      |
| 9/22/25  | Video & Quiz -<br>Inheritance Part 2                    | Quiz            | 6      |
| 9/22/25  | Video & Quiz -<br>Inheritance Part 2<br>Code            | Quiz            | 3      |
| 9/22/25  | <u>Video &amp; Quiz -</u><br><u>Polymorphism Part 1</u> | Quiz            | 5      |
| 9/22/25  | <u>Video &amp; Quiz -</u><br><u>Polymorphism Part 2</u> | Quiz            | 5      |
| 9/24/25  | <u>Lab - Abstract</u>                                   | Assignment      | 10     |
| 9/24/25  | <u>Video &amp; Quiz -</u><br><u>abstract   final</u>    | Quiz            | 8      |
| 9/28/25  | Assignment - Inheritance   Polymorphism                 | Assignment      | 40     |

| Due Date | Assignment Name   | Assignment Type | Points |
|----------|---|-----------------|--------|
| 9/28/25  | https://slcc.instructure.<br>com/courses/599746/<br>quizzes/1639254/edit<br>#questions_tabCours<br>e Survey |                 | 5.5    |
| 10/1/25  | <u>Discussions - Class</u> <u>Relationships_PLO-CS-4</u>  | Discussion      | 10     |
| 10/1/25  | Video & Quiz -<br>Interfaces Part 2   | Quiz            | 12     |
| 10/1/25  | <u>Video &amp; Quiz -</u><br><u>Interfaces Part 1</u>   | Quiz            | 4      |
| 10/1/25  | Video & Quiz - UML Associations and Multiplicity  | Quiz            | 9      |
| 10/1/25  | <u>Lab - Interface</u>  | Assignment      | 10     |
| 10/5/25  | <u>Assignment -</u><br><u>Interface</u>   | Assignment      | 40     |
| 10/6/25  | Video & Quiz -<br>Object Class_PLO-<br>CS-1   | Quiz            | 6      |
| 10/13/25 | <u>Lab - Getting Started</u><br><u>With WindowBuilder</u>   | Assignment      | 5      |
| 10/13/25 | <u>Lab - Intro to GUI</u>   | Assignment      | 10     |
| 10/13/25 | Module 02 Test  | Quiz            | 50     |
| 10/15/25 | Video & Quiz - Intro<br>to GUI and Dialogs  | Quiz            | 3      |
| 10/15/25 | Video & Quiz - Intro<br>to Swing Components   | Quiz            | 8      |
|          |   |                 |        |

| Due Date | Assignment Name  | Assignment Type | Points |
|----------|--|-----------------|--------|
| 10/15/25 | Extra Credit: Design a Game                            | Assignment      | 0      |
| 10/27/25 | <u>Lab - Dice</u>                                      | Assignment      | 10     |
| 10/27/25 | <u>Video &amp; Quiz - GUI</u><br><u>Event Handling</u> | Quiz            | 4      |
| 10/29/25 | <u>Lab - GUI Layout</u><br><u>Manager</u>              | Assignment      | 10     |
| 10/29/25 | <u>Video &amp; Quiz - More</u><br><u>GUI Layouts</u>   | Quiz            | 7      |
| 11/2/25  | Assignment - Red<br>Counter                            | Assignment      | 40     |
| 11/3/25  | Module 03 Test   | Quiz            | 50     |
| 11/5/25  | Video & Quiz - Class<br>Collections                    | Quiz            | 3      |
| 11/5/25  | Video & Quiz -<br>Generic Collections<br>#1            | Quiz            | 8      |
| 11/5/25  | Video & Quiz -<br>Generic Collections<br>#2            | Quiz            | 3      |
| 11/10/25 | <u>Lab - Wrapper Class</u>                             | Assignment      | 10     |
| 11/10/25 | Video & Quiz -<br>Autoboxing  <br>Wrapper Classes      | Quiz            | 5      |
| 11/12/25 | <u>Lab - Collection</u>                                | Assignment      | 10     |
| 11/12/25 | <u>Video &amp; Quiz -</u><br><u>Lambdas</u>            | Quiz            | 7      |
|          |  |                 |        |

| Due Date | Assignment Name  | Assignment Type | Points |
|----------|--|-----------------|--------|
| 11/16/25 | <u>Team Assignment -</u><br><u>Design</u>                | Assignment      | 20     |
| 11/17/25 | <u>Lab - KeyValuePair</u>                                | Assignment      | 15     |
| 11/17/25 | Video & Quiz - Generic Methods and Types   Bounded Types | Quiz            | 9      |
| 11/17/25 | <u>Video &amp; Quiz -</u><br><u>Wildcards   Erasure</u>  | Quiz            | 4      |
| 11/19/25 | <u>Video &amp; Quiz -</u><br><u>Exception #1</u>         | Quiz            | 5      |
| 11/19/25 | <u>Video &amp; Quiz -</u><br><u>Exception #2</u>         | Quiz            | 5      |
| 11/19/25 | <u>Video &amp; Quiz -</u><br><u>Exception #3</u>         | Quiz            | 5      |
| 11/23/25 | Assignment - Generic Collections                         | Assignment      | 40     |
| 11/24/25 | <u>Lab - Reading from a</u><br><u>File</u>               | Assignment      | 10     |
| 11/24/25 | <u>Video &amp; Quiz - Class</u><br><u>File</u>           | Quiz            | 4      |
| 11/24/25 | <u>Video &amp; Quiz - Files</u><br><u>and Streams</u>    | Quiz            | 7      |
| 11/24/25 | <u>Video &amp; Quiz -</u><br><u>Reading from a File</u>  | Quiz            | 6      |
| 11/26/25 | <u>Lab - Writing to a File</u>                           | Assignment      | 10     |
| 11/26/25 | <u>Video &amp; Quiz -</u><br><u>Writing to a File</u>    | Quiz            | 7      |
|          |  |                 |        |

| Due Date | Assignment Name   | Assignment Type | Points |
|----------|---|-----------------|--------|
| 11/30/25 | <u>Team Assignment -</u><br><u>Significant Progress</u> | Assignment      | 25     |
| 12/1/25  | <u>Lab -</u> <u>BufferedReader/Writ</u> <u>er</u>       | Assignment      | 10     |
| 12/3/25  | <u>Lab - Serialization</u>                              | Assignment      | 10     |
| 12/3/25  | <u>Video &amp; Quiz -</u><br><u>Serialization</u>       | Quiz            | 8      |
| 12/9/25  | <u>Team Assignment -</u><br><u>Project</u>              | Assignment      | 50     |
| 12/15/25 | <u>Final</u>  | Quiz            | 78     |

#### **Grading Scale**

Participation is not dependent on attendance. All course work can be accomplished just using the resources available through Canvas. Attendance is recommended as it provides direct access to the instructor and a better understanding of the concepts being discussed. The grading scale is standard and should be available as you look at your grades in Canvas. Extra Credit is also available through assignments indicated as such on the Modules.

# How to Navigate to Canvas

### Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities,

academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the <u>Institutional Syllabus</u> page.

#### Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the <u>Institutional Syllabus</u> page under the Tutoring and Learning Support tab. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

#### Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the <u>Institutional Syllabus</u> page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

#### Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar