



PROMINEO TECH

Syllabus: Back End Software Development Coding Bootcamp

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Program Objectives

Week 0 - Back End Orientation

Welcome to the Back End Coding Bootcamp: Learning Management System (LMS), Slack, Git and GitHub, OpenClass Mastery Assignments, and Tips for Success

Back End Coding Bootcamp

Introduction to Java

- Week 1: Java, Programming, Command Line Interface (CLI), Variables
- Week 2: Conditions and Loops
- Week 3: Source Control (git and GitHub), Arrays and Methods
- Week 4: Collections
- Week 5: Object Oriented Programming
- Week 6: Debugging and Unit Tests & Java Final Project

Relational Database with MySQL

- Week 7: Introduction to MySQL
- Week 8: Tables and Relationships
- Week 9: JDBC
- Week 10: Returning Data
- Week 11: Many to Many, Update, Delete & MySQL Final Project
- Week 12: JUnit Testing

Web API Design with Spring Boot

- Week 13: Introduction to Spring Boot – REST API #1 Week 1
- Week 14: Spring Boot – REST API #1 Week 2
- Week 15: Spring Boot – REST API #2 Week 1
 - Spring Boot Final Project Planning & Proposal
- Week 16: Spring Boot – REST API #2 Week 2
 - Spring Boot Final Project – Implementation Week 1
- Week 17: Spring Final Project – Implementation Week 2
- Week 18: Spring Final Project – Implementation Week 3

Grading Breakdown

Below is a breakdown of the assignments and quizzes that make up your final grade. The minimum grade required to successfully pass the program is a C or 70%.

Note: Coding Assignments and Final Projects together make up 75% of the grade of this course.

Category	% Of Total Grade
OpenClass	10%
Coding Assignments	25%
Research	5%
Career Services	5%
Unit Final Projects	50%
Other	5%

OpenClass

OpenClass is an external tool, through which questions are provided to allow a student to gain mastery in a topic relevant to the curriculum taught in a particular week.

OpenClass is an essential part of the learning process and comprises 10% of your overall course grade. These assignments are completed and graded in one of two ways: (1) When a student reaches 100% mastery by correctly completing a subset of the questions. Or (2) When a student has completed all the questions in a particular OpenClass Assignment. These assignments are graded on completion, and 100% will be awarded when one of the two above criteria is met, whether mastery is achieved by the OpenClass standards.

These assignments afford students hands on experience with the subject matter and help students develop the skills necessary to become proficient developers.

OpenClass Mastery Assignments account for 10% of your total course grade.

Coding Assignments

The mid-course weekly Coding Assignments are a vital component of the program and are worth an accumulative 25% of your overall grade. These assignments afford students hands on experience with the subject matter and help students develop the skills necessary to become proficient developers. There are 11 Coding Assignments that are included in this section, and they are as follows:

- Java in Weeks 3, 4, & 5
- MySQL in Weeks 7, 8, 9, 10, & 12
- Spring Boot in Weeks 13, 14, & 15

Mid-Course Coding Assignments account for 25% of your total course grade.

Research

Research Assignments are essay-style questions that requires the student to research the topics presented in the lesson and find resources to deepen their understanding of said topics. The technology industry is based on constantly searching for information; these assignments are developed to help students acquire the skills necessary to be successful as a developer in this aspect.

Research Assignments account for 5% of your total course grade.

Quizzes

All quizzes in this course are designed to demonstrate mastery of the topics covered. All are open book, internet, and all other resources except other students. Questions on any quizzes are to be answered solely by the student. While the quiz is open book, plagiarism is not acceptable. If a student finds an answer to a question, they must express the answer in their own words or code. Do not copy and paste.

Quizzes, Class Attendance & LinkedIn Posts together account for 5% of your total course grade.

Unit Final Projects

The Unit Final Project Section of the course contains three projects, as follow:

Java Final Project Week 6:	12.5%
MySQL Final Project Week 11:	12.5%
Spring Boot Final Project Week 18:	25.0%

These three Final Projects together account for 50% of your total course grade.

Java Final Project Week 6

The goal of this Java Final Project is to use all the programming concepts and constructs that have been taught so far in Java and create an automated version of the classic card game WAR.

Preview:

This final Java project is an automated version of the classic card game WAR.

- As a part of this assignment, you will also be asked to consider:
 - Creating classes such as Card, Deck & Player
 - Keeping in mind what fields and methods each class might have.
- The completed project will do the following:
 - Deal 26 Cards to 2 Players from a Deck
 - Iterate through the turns where each Player plays a Card
 - Award a point to the Player with the higher Card
 - Ties result in zero points for both Players
 - After all cards have been played, display the game score, and declare the winner.

This project comprises 12.5% of your total course grade based on

[Unit Final Projects Rubric](#) (see below)

MySQL Final Project Week 11

MySQL Final Project is to use all the programming concepts and constructs that have been taught so far and create a full CRUD project. This project will follow the curriculum presented and must be a fully working version of the Weeks 7-11 Coding Assignments, written in Java, and using JDBC.

CRUD stands for Create, Read, Update, Delete, and this project will be able to do all these operations on a MySQL database, through a menu-drive application.

This project comprises 12.5% of your total course grade based on

[Unit Final Projects Rubric](#). (See below)

[Spring Boot Final Project Week 18](#)

Though all three Unit Final Projects are designed to demonstrate mastery of the learned materials, and the ability to apply the knowledge and skills learned throughout the program; the Spring Boot Final Project is the culminating activity of the program.

This Unit Final Project spans the final few weeks of the bootcamp, including 1 week for design and approval, and three full weeks for implementation. The Project will implement a RESTful Web API with full CRUD (Create, Read, Update and Delete) operations on a MySQL database.

The Spring Boot Final Project accounts for 25% of your final course grade.

Spring Boot Final Project Preview:

- You will implement a RESTful Web API with Spring Framework, with data stored and updated in a MySQL database.
- You will have 1-2 weeks for design and will begin work as soon as your Spring Project Proposal is approved.
- You will have three full weeks to implement this project.
- A Final Project GitHub Repository is required, with all the Spring Final Project code, including all Java, SQL and ERD files, and any documentation that relates to the project.
- You will be requested to do a Video Submission of this project: a 5-minute video presentation which shows all the required functionality of the Final Project and includes verbal explanation of all functionalities.
- This project may be an individual project, or a group project based on your instructor's approval

1-person Project:

- Database design which contains at least 3 entities and 3 tables.
- Contains all CRUD operations (Create, Read, Update & Delete).
- Each entity should have CRUD operations with one entity having all 4 CRUD operations.
- Database & Project contain at least 1 one-to-many relationship.
- Database & Project contains at least 1 many-to-many relationship with one or more CRUD on this relationship.

Group Project (max 3 people):

- Database should have at least two tables per group member + one.
- Contains 2 entities per person, plus 1 entity done together to solidify the structure expected for the project.
- Each member of the group is required to code their entire entity, including entity, controller, service, & DAO.
- Each member of the group is required have CRUD operations on both of their entities, and implement all 4 CRUD operations (Create, Read, Update, & Delete) on one of their 2 entities.
- Database & Project contain at least 1 one-to-many relationship.
- Database & Project contains at least 1 many-to-many relationship with one or more CRUD operations on this relationship.

NOTE: In a Group Project, it is required to document which team member designs & implements which entities, and each will submit a video.

This project comprises 25% of the course total grade based on the [Unit Final Projects Rubric](#). (See below)

Unit Final Projects Rubric:

This applies to the Java Week 6 Final Project, the MySQL Week 11 Final Project, and the Spring Boot Week 18 Final Project.

Completion: The purpose of this section is to ensure that the project is implemented completely and includes all requirements of the Coding Assignment. The addition of **comments in the code** highlights the coder's understanding of the functionality in the code. If the code is not fully functional, **please add comments to outline what has been attempted.**

GitHub: The purpose of this section is to establish a presence on GitHub. Not only does this allow graders to run and verify the project, it provides a platform for potential employers to review. **Please include all code (e.g., Java and/or SQL), any ERD files, and all Coding Assignment documents.**

Errors: The purpose of this section is to evaluate how well this project runs. If there are any errors (compilation or runtime), it is helpful to document what has been attempted to solve the issues. **Please add comments to the code and the Coding Assignment document to explain.**

Video Explanation: The purpose of this section is to demonstrate that the project runs and to demonstrate understanding of the project by verbal description. **Please create a video showcasing this project.** One easy way to do this is to start a Zoom session, share the screen and record a demonstration of the project running, and a verbal explanation of the required functionality.

Additional Resources

In addition to the Learning Management System (LMS), Slack channels, and Class Zoom session (90 minutes once per week), each Promineo Tech student has several additional resources available to them.

- **Mentor Sessions:** During their bootcamp in Weeks 1 to 18, a Promineo Tech student can reserve a one-on-one session with a Back End Mentor. Each student is allowed one 30-minute session during each week of their course.
- **Office Hours:** Any time during or after their Back End Coding Bootcamp, Promineo Tech students can attend Office Hours.
 - Each week, we host several Back End Office Hours to focus on the topics covered in the Back End Coding Bootcamp.
 - Office Hours to focus on Career Services are also available.

Late Policy

All Late Assignments result in a 10% deduction of points. **Note:** A student must receive a 70% or better to pass the program and to request a certification of completion.