WESTCLIFF UNIVERSITY | College of Technology & Engineering

PRG 401 Syllabus

Course Description	
COURSE NUMBER and NAME	PRG 401 JAVA
UNITS	3
LENGTH OF CLASS	8 Weeks
COURSE DESCRIPTION	In this course, students learn about Java and how it is used in problem solving and programming. Students are introduced to object-oriented programming and important concepts such as design, testing and debugging, programming style, interfaces inheritance, and excepting clean code.
REQUIRED TEXT	W3Schools: https://www.w3schools.com/java/java_intro.asp
INSTRUCTIONAL METHOD	Online / On-Campus

Summary of Graded Work and Assessments

Graded work and assessments offer students the opportunity to show the degree of mastery for each CLO. The following table shows how assessments and CLOs align (link).

Assignments	Totals	Weight	CLOs
Engagement and Professionalism (Rubric) Including the Live Class Activities	160	16%	1, 2, 3, 4
Week 1 Assignment	100	10%	1
Week 2 Assignment	100	10%	
Week 3 Assignment	100	10%	1
Week 4 Assignment	100	10%	1
Week 5 Assignment	100	10%	2, 3
Week 6 Assignment	100	10%	3
Week 7 Assignment	100	10%	3
Week 8 Final Assessment	140	14%	1, 2, 3, 4
Total Points/Percentage	**1000 Points**	**100%**	

Course Policies

For Westcliff's course policies, please see the Course Policies document.

Discussion Requirements

For all discussions, the primary response is due by Wednesday at 11:59 p.m. Pacific Time. The primary response must be at least 200 words in length and fully address the topic, demonstrating critical thinking and understanding. Each student must then also post a minimum of two responses to other students in the discussion by Saturday night at 11:59 p.m. Pacific Time. Each peer response must be at least 50 words in length and substantively engage with the other student's original post, continuing the discussion in a professional manner. If at any time information or material is brought in from an outside source or website, it must be properly cited following APA 7th edition guidelines, and a full reference must be provided.

Assignment Requirements

Each assignment deliverable is specifically defined in the assignment instructions, such as page length, citations and references, audio or video, presentations, tables, etc. For all written assignments, the required page length does not include the cover or references pages. Refer to the specific requirements as stated in each assignment, and reach out to your instructor for additional information as needed. All graded submissions are due by Sunday at 11:59 p.m. Pacific Time.

All written work must adhere to APA 7th edition academic formatting requirements including core components such as the cover page, page numbers, headings, citations, 1" margins, paragraph indentations, left alignment, double spacing throughout, and the final references using hanging indents.

Participation Requirements

Students are required to attend each live class session either in person or virtually as stipulated in the course policies. Participation in the live class session is determined by actively engaging, answering or asking questions, providing comments, interacting in group activities, etc., as required by the instructor. Students who are unable to attend the live in-class or virtual sessions must follow the Virtual Class Session (VCS) submission requirements as stated in the Course Policies document.

Writing Center

The Westcliff University Writing Center is dedicated to providing quality support to students and faculty. From assignment review, to in-class workshops, to dissertation support, to publication help, the Writing Center is committed to empowering individuals to use the written language to articulate and disseminate knowledge.

Course Learning Outcomes (CLOs)

Learning outcomes are statements that describe significant and essential scholarship that students have achieved and can reliably demonstrate at the end of the course. Learning outcomes identify what the learner will know and be able to do by the end of a course – the essential and enduring knowledge, abilities (skills), and attitudes (values, dispositions) that constitute the integrated learning needed for successful completion of this course. The learning outcomes for this course summarize what students can expect to learn, and how this course is tied directly to the educational outcomes of the degree.

Course Learning Outcomes (CLOs)	**PLOs**
1. Demonstrate foundational Java Programming skills and understanding including syntax, methods, classes, and file handling.	1, 2, 3
2. Write code using Java Object-Oriented methodologies.	2, 3
3. Demonstrate Java programming skills in design, debugging, programming style, interfaces, inheritance, and exception handling.	1, 2, 3
4. Demonstrate best practices in using code management tools, documenting code, and testing code to ensure functionality.	1, 2, 3, 4

Detailed Course Outline

The following outline provides important assignment details for this course, unit by unit. Students are responsible for all of the assignments given. Please refer to the Detailed Description of Each Grading Criteria in the syllabus for specific information about each assignment.

Week 1

Assignments to complete this week:

- Reading:
  - W3Schools: Home
  - W3Schools: Intro
  - W3Schools: Get Started
  - W3Schools: Syntax
  - W3Schools: Output
  - W3Schools: Comments
  - W3Schools: Variables
  - W3Schools: Data Types
  - W3Schools: Type Casting
  - Video: Explore basic syntax
  - Video: Java File Input/Output
  - Video: Comments in Jav
  - Video: Java Variables
  - Video: Primitive Data Types
  - Video: Type Casting

Week 1 Live Class Activity

Check if Java is installed on each student's computer.
If it is not installed, download and install from HERE.
Follow the installation instructions in the Java Getting Started section of the course reading.
Continue through the remaining instructions until each student completes the 'Hello World' activity.

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 1 Assignment (Rubric)

Complete all exercises in Syntax, Variables, and Data Types. After completing each exercise, take a screenshot of the completion window and paste it into a Word document. Submit screenshots of every completed exercise in the single document.

Week 2

Assignments to complete this week:

- Reading:
  - W3Schools: Operators
  - W3Schools: Strings
  - W3Schools: Math
  - W3Schools: Booleans
  - W3Schools: If…Else
  - Video: Numeric Expressions and Operators
  - Video: String Class
  - Video: Math Class
  - Video: Boolean
  - Video: If, Else

Week 2 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 2 Assignment (Rubric)

Complete all exercises in Operators, Strings, Math, Boolean, and If…Else. After completing each exercise, take a screenshot of the completion window and past in a Word document. Submit screenshots of every completed exercise in the single document.

Week 3

Assignments to complete this week:

- Reading:
  - W3Schools: Switch
  - W3Schools: While Loop
  - W3Schools: For Loop
  - W3Schools: Breahools:k/Continue
  - W3Sc Arrays
  - Video: Switch Case
  - Video: While Loop
  - Video: For Loop
  - Video: Break and Continue
  - Video: Arrays

Week 3 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 3 Assignment (Rubric)

Complete all exercises in Switch, Loops, and Arrays. After completing each exercise, take a screenshot of the completion window and past in a Word document. Submit screenshots of every completed exercise in the single document.

Week 4

Assignments to complete this week:

- Reading:
  - W3Schools: Methods
  - W3Schools: Method Parameters
  - W3Schools: Method Overloading
  - W3s: Scope
  - W3Schools: RSchoolecursion
  - Video: Methods
  - Video: Method Parameters
  - Video: Method Overloading and Optional Parameters
  - Video: Variable Scope
  - Video: Recursion

Week 4 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 4 Assignment (Rubric)

Complete all exercises in Methods. After completing each exercise, take a screenshot of the completion window and past in a Word document. Submit screenshots of every completed exercise in the single document.

In addition, select 2 of the topics for this week and write your own basic code examples demonstrating their use. Submit your code as a text file together with screenshots showing functionality.

Week 5

Assignments to complete this week:

- Reading:
  - W3Schools: OOP
  - W3Schools: Classes/Objects
  - W3Schools: Class Methods
  - W3Schools: Constructors
  - W3Schools: Modifiers
  - W3Schools: Encapsulation
  - Video: Object-Oriented Programming
  - Video: Classes and Objects
  - Video: Creating Basic Classes, Methods, and Properties
  - Video: Constructors
  - Video: Access Modifiers
  - Video: Encapsulation

Week 5 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 5 Assignment (Rubric)

Select 3 of the topics for this week and write your own basic code examples demonstrating their use. Submit your code as a text file together with screenshots showing functionality.

Week 6

Assignments to complete this week:

- Reading:
  - W3Schools: Packages / API
  - W3Schools: Inheritance
  - W3Schools: Polymorphism
  - W3Schools: Inner Classes
  - W3Schools: Abstraction
  - W3Schools: Interface
  - W3Schools: Enums
  - W3Schools: User Input
  - W3Schools: Date
  - Video: Packages and API
  - Video: Inheritance
  - Video: Polymorphism
  - Video: Inner Class
  - Video: Abstract Classes and Methods
  - Video: Interface
  - Video: Enums
  - Video: User Input
  - Video: Date and Calendar

Week 6 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 6 Assignment (Rubric)

Complete the Java Classes Object exercise. After completing each exercise, take a screenshot of /the completion window and paste in a Word document. Submit screenshots of every completed exercise in the single document.

In addition, select 2 of the topics for this week and write your own basic code examples demonstrating their use. Submit your code as a text file together with screenshots showing functionality.

Week 7

Assignments to complete this week:

- Reading:
  - W3Schools: ArrayList
  - W3Schools: LinkedList
  - W3Schools: HashMap
  - W3Schools: HashSet
  - W3Schools: Iterator
  - W3Schools: Wrapper Classes
  - W3Schools: Exceptions
  - W3Schools: RegEx
  - W3Schools: Threads
  - W3Schools: Lambda
  - Video: ArrayList
  - Video: LinkedList
  - Video: HashMap
  - Video: HashSet
  - Video: Iterators
  - Video: Wrapper Classes
  - Video: Exceptions
  - Video: RegEx
  - Video: Threads
  - Video: Lambda Expressions

Week 7 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 7 Assignment (Rubric)

Complete the Java Exceptions exercise. After completing each exercise, take a screenshot of the completion window and past in a Word document. Submit screenshots of every completed exercise in the single document.

In addition, select 2 of the topics for this week and write your own basic code examples demonstrating their use. Submit your code as a text file together with screenshots showing functionality.

Week 8

Assignments to complete this week:

- Reading:

In addition, complete the Java Quiz in W3ScW3Schools: Files

  - W3Schools: Create/Write Files
  - W3Schools: Read Files
  - W3Schools: Delete Files
  - Video: File Input/Output
  - Video: File Writer
  - Video: Read Text File Easily
  - Video: Delete Files

Week 8 Live Class Activity

Following the instructor lecture and demonstration using the W3Schools system, break into small groups depending on class size and begin working through the initial Java programming instructions from this week's readings. Explore the videos as needed. The instructor will go between group rooms to answer any questions and provide direction.

Week 8 Final Assessment (Rubric)

Select 3 Java programming concepts covered during this course which are different from the ones you completed during the weekly assignments, and write your own basic code examples demonstrating their use. Submit your code as a text file together with screenshots showing functionality.

Go to W3Schools and obtain your Completion Certificate.