

# 2010/2011 Java Programming II

PTP306 - 18 weeks

## DoDEA Course Description and Competencies

### About the Program

Java Programming II prepares students for careers in the IT industry. The course sequence focuses on advanced duties and tasks performed by professionals in computer programming as well as pre-employment and employment skills.

**Major Concepts/Content:** Programming in Java II is a one-semester course that continues to teach students Java programming concepts using a structured approach. Students will develop Java applications and applets. Problem solving and program documentation will be emphasized. **Major Instructional Activities:** Students will analyze a problem, design a solution, write the program needed to solve the problem, test the program and make the necessary corrections in the program. Activities will include hands-on programming, group and individual assignments and special projects. Students may demonstrate the ability to communicate with instructor and peers via communications software. Students will use electronic learning services to access additional resources.

**Major Evaluative Techniques:** Assessment will be accomplished by the successful completion of assignments. Assignments will be evaluated for structure, the correct use of programming statements, documentation, conciseness, and appropriateness of the solution to the problem. Success may be demonstrated by written tests, oral tests, class work, projects, or other means deemed appropriate by the instructor.

**Essential Software:** The focus of this course will be the use of JAVA Development Kit, Java SE and Net Beans to produce a variety of interactive programs.

The table below is a competency list for the Java Programming II course. The competencies are considered essential and are required of all students.

PTP306 18 weeks	JAVA Programming II TASKS/COMPETENCIES
<b>Implementing DoDEA's CTE Course Requirements</b>	
• 001	Demonstrate DoDEA's Workplace Readiness Skills in course activities.
• 002	Identify issues related to this field of study that affect the environment and impact local and global communities.
• 003	Identify Internet safety issues and procedures for complying with acceptable use standards.
<b>Mastering Object-Oriented Programming</b>	
• 004	Program using object-oriented programming and related concepts (e.g., encapsulation, abstraction, inheritance, and polymorphism).
• 005	Utilize methods to create objects.
<b>Mastering Programming Procedures</b>	
• 006	Code, compile, debug, execute and document a program.
• 007	Maintain a program using SDLC.
<b>Mastering Programming Fundamentals</b>	
• 008	Declare and utilize arrays.

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• 009	Create a program that can retrieve and save data.
• 010	Create a program that uses exception-handling procedures.
<b>Developing Interactive Multimedia Applications</b>	
• 011	Explain the impact of intellectual property law for programs.
• 012	Identify the target market for an interactive program.
• 013	Create a design document for an interactive program.
• 014	Code a program from a design document.
• 015	Create a GUI-based interactive program.
• 016	Deliver an oral presentation explaining an interactive program.
<b>Developing Employability Skills</b>	
• 017	Research continuing education pathways and careers in the information technology industry.
• 018	Describe the process and requirements for obtaining industry certifications related to the JAVA course.
• 019	Create or update a portfolio containing representative samples of student work (e.g., program design, source code, technical documentation, and output).
• 020	Publish interactive programming samples on a webpage.