OUTCOMES BASED LEARNING MATRIX

Course: CTIM157 Introduction to Java (3 credits/60 hours)
Department: Computer Technology and Information Management

Description: Java is a platform-independent object-oriented programming language used to create stand-alone applications and applets for the World Wide Web. This course gives the student a basic understanding of the Java language and its role in the object-oriented world. The student creates simple applications and applets. Two lecture hours and two laboratory hours per week.

Co/Prerequisites: CTIM 281 Introduction to Software Design & Development or departmental approval.

While completing the table below, remember that the individual outcomes you list in the first column should answer this question: **What must the learner know and be able to do at the end of the course?** Items in the third column should answer the question: **How do we know?** The second column is where teachers can be most creative; it's for pedagogy. Each rectangle in column one should contain just one outcome; the corresponding rectangles in columns two and three, however, may contain more than one item. Using the code at the end of the matrix, indicate the core competencies being strengthened by the outcomes activities and the assessment tools.

*COURSE OUTCOMES	OUTCOMES ACTIVITIES	ASSESSMENT TOOLS
At the end of this course students will be able to create simple applications to include:		
1. Explore the Java programming language	1. Explore Basic Computer Architecture (CCT, OC, QL, IL, WC, IG) 2. Explore Basic Internet Architecture (CCT, OC, QL, IL, WC, IG) 3. Design Java Programs (CCT, OC, QL, IL, WC, IG) 4. Compile Java Programs (CCT, OC, QL, IL, WC, IG) 5. Run Java Programs (CCT, OC, QL, IL, WC, IG)	1. Quizzes, tests, projects, class participation, homework assignments (CCT, OC, QL, IL, WC, IG).

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2. Work with Primitive Types, Strings and Interactive Input/Output	6. Use/Manipulate Primitive Types and Expressions (CCT, OC, QL, IL, WC, IG) 7. Use the String Class (CCT, OC, QL, IL, WC, IG) 8. Facilitate Keyboard and Screen Input/Output (CCT, OC, QL, IL, WC, IG) 9. Create Documentation and Explore Style (CCT, OC, QL, IL, WC, IG)	Referenced above.
3. Manipulate the Flow of Control	10. Create/Use Branching Statements (CCT, OC, QL, IL, WC, IG) 11. Create/Use Loop Statements (CCT, OC, QL, IL, WC, IG) 12. Create/Use Booleans (CCT, OC, QL, IL, WC, IG)	Referenced above.
4. Design/Create/Use Classes and Methods	13. Design/Create/Use Classes and Methods (CCT, OC, QL, IL, WC, IG) 14. Facilitate Information Hiding and Encapsulation (CCT, OC, QL, IL, WC, IG) 15. Manipulate Objects and Reference (CCT, OC, QL, IL, WC, IG)	Referenced above.
5. Manipulate Classes and Methods	16. Program with Methods (CCT, OC, QL, IL, WC, IG) 17. Use Static Methods and Static Variables (CCT, OC, QL, IL, WC, IG) 18. Overload Methods (CCT, OC, QL, IL, WC, IG) 19. Create/Use Constructors (CCT, OC, QL, IL, WC, IG)	Referenced above.

	20. Create/Use Packages (CCT, OC, QL, IL, WC, IG)	
6. Create/Use Arrays	21. Explore Array Structure (CCT, OC, QL, IL, WC, IG) 22. Create/Use Arrays in Classes and Methods (CCT, OC, QL, IL, WC, IG) 23. Initialize Arrays (CCT, OC, QL, IL, WC, IG) 24. Search Arrays (CCT, OC, QL, IL, WC, IG) 25. Sort Arrays (CCT, OC, QL, IL, WC, IG) 26. Create/Use Multidimensional Arrays (CCT, OC, QL, IL, WC, IG)	Referenced above.
7. Program with Inheritance	27. Explore Inheritance (CCT, OC, QL, IL, WC, IG) 28. Program with Inheritance (CCT, OC, QL, IL, WC, IG) 29. Explore Dynamic Binding and Polymorphism (CCT, OC, QL, IL, WC, IG)	Referenced above.
To strengthen Core Competencies** in order to increase success in this and other courses and in the workplace.	Referenced above.	Referenced above.

*Try to express an outcome as an infinitive phrase that concludes this sentence: **At the end of the course, the students should be able to . . ..** Finding the line between too general and too specific can be difficult. In an English Composition course, for instance, it is probably too general to say, "The student should be able to write effective essays." It is probably too specific to say, "The student should be able to write an introductory paragraph of at least 50 words, containing an attention-getting device, an announcement of the narrowed topic, and an explicit thesis sentence." Just right might read, "The student will write introductions that gather attention and focus the essay."

**Indicate the Core Competencies that apply to the outcomes activities and assessment tools: critical and creative thinking (CCT); oral communications (OC); quantitative literacy (QL); information literacy (IL); written communication (WC); civic engagement (CE); integrative learning (IG); global learning (GL).