**CS 17.11 Course Outline as of Spring 2010**

# CATALOG INFORMATION

Dept and Nbr: CS 17.11 Title: JAVA PROGRAMMING
Full Title: Java Programming
Last Reviewed: 1/24/2022

| Units | | Course Hours per Week | | Nbr of Weeks | Course Hours Total | |
|---|---|---|---|---|---|---|
| Maximum | 3.00 | Lecture Scheduled | 3.00 | 17.5 | Lecture Scheduled | 52.50 |
| Minimum | 3.00 | Lab Scheduled | 0 | 4 | Lab Scheduled | 0 |
| | | Contact DHR | 0 | | Contact DHR | 0 |
| | | Contact Total | 3.00 | | Contact Total | 52.50 |
| | | Non-contact DHR | 0 | | Non-contact DHR | 0 |

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

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|---|---|
| Title 5 Category: | AA Degree Applicable |
| Grading: | Grade Only |
| Repeatability: | 00 - Two Repeats if Grade was D, F, NC, or NP |
| Also Listed As: | |
| Formerly: | CIS 17 |

**Catalog Description:**
Intended for students with previous programming experience. Topics include: Object-oriented programming principles, Java language constructs, the JDK (Java Developer's Kit), class libraries, multi-threading, networking, GUI (Graphical User Interface) development, applets and applications.

**Prerequisites/Corequisites:**
Course Completion of CS 10

**Recommended Preparation:**
Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:**

**Schedule of Classes Information:**
Description: Intended for students with previous programming experience. Topics include Object-oriented programming principles, Java language constructs, the JDK (Java Developer's Kit), class libraries, multi- threading, networking, GUI (Graphical User Interface) development, applets and applications. (Grade Only)
Prerequisites/Corequisites: Course Completion of CS 10

Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit: CSU;UC.
Repeatability: Two Repeats if Grade was D, F, NC, or NP

## ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

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|---|---|---|---|
| **AS Degree:** | **Area** | Effective: | Inactive: |
| **CSU GE:** | **Transfer Area** | Effective: | Inactive: |
| **IGETC:** | **Transfer Area** | Effective: | Inactive: |

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|---|---|---|---|---|
| **CSU Transfer:** | Transferable | Effective: | Summer 1996 | Inactive: |
| **UC Transfer:** | Transferable | Effective: | Spring 2000 | Inactive: |

**CID:**

**Certificate/Major Applicable:**
Certificate Applicable Course

## COURSE CONTENT

**Outcomes and Objectives:**
Students will:
1. Evaluate the rationale of the Java language.
2. Contrast Java and C++.
3. Design programs using object-oriented methods.
4. Create software using an integrated development environment.
5. Integrate the Java class libraries with the construction of new classes.
6. Test the efficiencies of multithreaded applications.
7. Construct graphical user interfaces.
8. Compare local I/O (Input/Output) facilities with networking in Java.
9. Evaluate, compare and contrast four design patterns.

**Topics and Scope:**

1. Object-oriented programming principles
   A. Encapsulation
   B. Inheritance
   C. Polymorphism
2. Comparison with C/C++
   A. Global variables
   B. Pointers
   C. Memory allocation
   D. Header files
   E. Preprocessor
3. Java language constructs
   A. Types
   B. Operators
   C. Flow control

D. Classes
E. Packages and interfaces
4. JDK class libraries
A. .lang
B. .io
C. .util
D. .net
E. .awt
F. .applet
5. Threads and synchronization
A. Thread priorities
B. Synchronization
C. Messaging
6. Networking
A. Sockets for clients
B. Sockets for servers
C. URL (Uniform Resource Locator) connections
7. GUI development
A. Components
B. Layout manager
C. Menu container
8. Applets
A. HTML (Hypertext markup language) interface
B. Parameters
C. Initialization
D. Graphics
9. Applications
A. Parameters
B. Initialization
C. I/O

**Assignment:**

1. Reading, approximately 30 pages per week.
2. Write a minimum of 4 programs using the Java programming language.
3. Test and debug programs.
4. Write program documentation.
5. Take objective examinations including a final exam.

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

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| Written program documentation. | Writing<br>10 - 20% |

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

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| Writing, testing and debugging programs using the Java programming language | Problem solving<br>20 - 60% |

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

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| None | Skill Demonstrations<br>0 - 0% |

**Exams:** All forms of formal testing, other than skill performance exams.

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| Multiple choice, true/false, matching items, completion, programming exercises | Exams<br>20 - 60% |

**Other:** Includes any assessment tools that do not logically fit into the above categories.

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|---|---|
| None | Other Category<br>0 - 0% |

**Representative Textbooks and Materials:**
Head First Java (2nd edition) Sierra and Bates, O'Reilly:  2007
Thinking in Java (4th edition) Eckel, Prentice Hall: 2006