

CISC 1115 Course Syllabus and Homework Assignments
Text: Starting Out With Java From Control Structures through Data Structures, 4th ed.
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Topic 1: First Java Program

- computer concepts (hardware, software, programs) (pp. 1-6)
- sample Java programs
- the Java programming language (pp. 6-21)
- structure of a simple Java program (pp. 27-32)
- the declaration statement (pp. 39)
- the assignment statement (pp. 39)
- primitive data types (pp. 44-54)
- the println() and print() methods (pp. 33-41)
- arithmetic operators (arithmetic expressions) (pp. 54-57)
- relational operators (boolean expressions) (pp. 113-114)
- A complete Java program
- iterative operations
- for loops (for statements) (pp. 207-216)
- increments and decrements (pp. 189-193)

[HW1: Topic 1 Program: Print 1 to 100](#)

Topic 2: Evaluating an Expression

- real numbers (pp. 47-49)
- data types float and double (pp. 47-49)
- writing complex arithmetic expressions
- arithmetic operator precedence and associativity (pp. 57-59)
- if statement (pp. 111-121)
- printing real numbers (pp. 164-178)
- creating a readable table (pp. 164-178)
- formatted output (precision, width, justification, tabs) (pp. 164-178)
- escape sequences (pp. 36-38)
- combined assignment operators (pp. 63-64)
- operator precedence (arithmentic, relational, assignment) (pp. 144)
- mixed mode arithmetic (pp. 65-68)
- Math class methods (pp. 62-63)
- data type char (pp. 50-52)
- the String class (pp. 70-75)
- program debugging
- files (pp. 230-237)
- output files using PrintWriter (or PrintStream) objects (pp. 230-237)

[HW2: Topic 2 Programming Assignment: Formula](#)

Topic 3: Reading a Set of Data

- while loop (while statement) (pp. 193-203)
- using a sentinel (pp. 216-221)
- interactive data entry (pp.. 84-98)
- the Scanner class (Scanner class methods) (pp. 84-91)
- dialog boxes (pp. 92-98)
- methods for converting strings to numbers (pp. 95-98)
- String.format() method (pp.175-177)
- if-else statement (pp.121-123)
- the conditional operator (pp.152-154)
- input files (pp. 237-248)

[HW3: Topic 3 Program: Exam Statistics](#)

Topic 4: Summation, Constants, Nested Loops		
- summation loop	(pp. 216-220)	
- declaring a loop index	(pp. 211-212)	
- named constants	(pp. 69-70)	
- user controlled for loop	(pp. 212-213)	
- nested for loops	(pp. 221-229)	
Topic 5; Methods (Member Functions)		(pp. 269-306)
- value-return methods		
- local variables		
- void methods		
- parameterless methods		
- pass by value		
- pass by reference of non-primitive objects		
- file i/o within a method		
- data type boolean		(pp.50)

[HW5: Topic 5 Program: Bowling Scores](#)

Examination #1 [exam1 outline](#)

Topic 6: Control Structures		
- detecting the end of a data set (user response methods)	(pp. 204-206)	
- do-while loops	(pp. 204-206)	
- logical operators	(pp. 137-145)	
- nested if statements	(pp. 124-137)	
- switch statement	(pp. 154-164)	
- continue and break statements	(pp. 229)	
- precedence of operators	(pp. 143-144)	
- complex Boolean expressions	(pp. 137-144)	
- generating random numbers using class Random	(pp. 249-255)	

[HW6: Topic 6 Program: Calculator](#)

Topic 7: Arrays		
- one-dimensional arrays	(pp. 403-422)	
- passing arrays to methods	(pp. 422-426)	
- array algorithms and operations	(pp. 426-439)	
- returning arrays from methods	(pp. 439-441)	
- detecting the end of a file	(pp. 241-244)	
- two-dimensional arrays	(pp. 450-461)	
- arrays with three or more dimensions	(pp. 462)	

[HW7.1: Topic 7 Program: Bank Accounts](#)

[HW7.2: Topic 7 Program: Count Zeros](#)

Topic 8: The String Class		
- String class objects and methods	(pp. 70-75)	
- comparing String objects	(pp. 145-151)	
- additional String methods	(pp. 566-579)	
- the String indexOf() method		
- the StringBuilder Class	(pp. 579-589)	
- StringBuilder methods		
- the Scanner nextLine() method	(pp. 86)	
- reading lines from a file using the nextLine() method	(pp. 238-241)	
- String arrays	(pp. 441-444)	
- tokenizing Strings (using method split())	(pp. 589-593)	
- character testing and conversion (Character Class)	(pp. 558-565)	

[HW8: Topic 8 Program: Word Count](#)

Lecture Notes: Number Systems

(lecture notes)

Examination #2 [exam2 outline](#)

Topic 9: Sorting and Searching

- selection sort (pp. 463-466)
- bubble sort (lecture notes)
- linear search (pp. 447-449)
- binary search (pp. 466-468)

[HW9: Topic 9 Program: Donations](#)

Topic 10: A First look at Classes

- objects and classes (pp. 317-324)
- writing a simple class (pp. 324-341)
- instance fields and methods (pp. 341-345)
- passing objects as arguments (pp. 358-360)
- StringTokenizer class (pp. 589-593)
- converting Strings to numbers (pp. 95-98)

Final Examination

[Sample Final Exam: Fall 2017](#)

[Sample Final Exam: Fall 2018](#)

[Sample Final Exam: Fall 2020](#)