Kishwaukee College Syllabus
CIS 160 - 3001
Java Programming I
3 Credit Hours, Fall 2017

Course Description

This is the first course in the Java language sequence. It emphasizes a disciplined approach to problem solving and algorithm development. Input and output will be done using the command line, a graphical user interface, and files. Topics include selection, repetition, methods, arrays, text manipulation, data abstraction, and object oriented programming. Program design, style, documentation, and testing will be practiced. Three hours lecture/discussion a week.**IAI: CS 911**
Prerequisite: MAT 086

Meeting Time and Place

Lecture/Lab:	A-1374	
Time:	12:30 P.M. - 1:45 P.M.	Tuesday, Thursday
Dates:	8/22/17 - 12/15/17	
Withdrawal date:	11/27/17	
Labor Day:	9/4/17	School closed
Fall break:	10/13/17	School closed
Thanksgiving:	11/22/17 5PM - 11/25/17	School closed
Midterm exam:	10/12/17	during class
Final exam:	12/12/17	Noon - 1:50 P.M.

Instructor Information

Instructor:	David G. Klick
Office:	A-1342
Email:	dklick@kish.edu
Phone:	815/825-9337
Website:	kermit.kish.edu/~dklick/
Backup website:	klickfamily.com/david/school/
Desire2Learn:	https://kish.desire2learn.com/
Dept. Secretary:	815/825-9303 (Shelley Lawson)
Office hours:	M 10:00 A.M. - 11:00 A.M., 1:45 P.M. - 2:30 P.M.
	T 1:45 P.M. - 2:30 P.M., 5:15 P.M. - 6:00 P.M.
	W 10:00 A.M. - 11:00 A.M., 1:45 P.M. - 2:30 P.M.
	R 1:45 P.M. - 2:45 P.M.
	other times by appointment

Expected Learner Outcomes

Upon completion of this course, the student will be able to:
1. create, compile, and run Java programs
2. compare and contrast basic data types
3. declare and use variables
4. get input using a CLI and a GUI
5. display output using a CLI and a GUI
6. process numeric data using arithmetic operators
7. create and use methods and parameters, including passing by reference and passing by value
8. explain variable scope and lifetime
9. use selection to implement algorithms
10. use repetition to implement algorithms
11. use files for input and output
12. format output

13. create and use arrays
14. sort an array
15. create and use classes and objects, including inheritance and instance variables
16. create and use constructors, overloaded methods, and overridden methods
17. catch exceptions and use assertions
18. write programs that follow standard style conventions
19. test and debug programs

Required Text and Materials

1. Eck, David J. Introduction to Programming Using Java. Copyright 2016. This book is available online for free at math.hws.edu/javanotes.
2. Downey, Allen. Think Java (version 6). Copyright 2016. This book is available online for free at greenteapress.com/wp/think-java/.
3. A standard modern Java compiler. The standard Java compiler is available online for free at www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html
4. Oracle's Java 8 documentation: https://docs.oracle.com/javase/8/docs/api/index.html
5. Internet access

Breakdown of Course Requirements

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10 programming projects @ 40 points each    400 points
1 midterm exam @ 100 points                 100 points
1 final exam @ 100 points                    100 points
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Total                                        600 points
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Final Grade Determination

A = 90 - 100%	540 points or more
B = 80 - 89.9%	480 - 539 points
C = 70 - 79.9%	420 - 479 points
D = 60 - 69.9%	360 - 419 points
F = below 60%	less than 360 points

Grade reports will not be mailed out. Please check KishSOS, My Student Info, under Academic Profile, Grades, for grade reports.

Course Procedures

1. Students are expected to attend class sessions on time and prepared (Note: CIS 123 class sessions are optional attendance). Students should bring whatever they need to take notes to every class.
2. Food and beverages are not permitted in the classrooms or labs. See a more detailed policy at http://kermit.kish.edu/~dklick/foodDrinkPolicy.html
3. Cellphones, music players, etc. must be turned off in class.
4. Students are expected to spend **time outside of class** completing assignments.
5. A familiarity with computers and the Windows operating system is expected.
6. Depending on the assignment, both digital and hardcopy versions of assignments may be required for submission. The procedure for submitting digital copies of assignments will be explained in class. Make sure you always keep a copy of all of your assignments. The instructor is NOT responsible for network failures, server failures, or student mistakes.
7. The instructor answers many questions via email. Due to the high volume of requests, submissions, and questions received via email, the instructor must prioritize responses. Most questions will be answered (or at least acknowledged) within 48 hours. If you do not get a response when you expect one, please keep in mind that your email may have failed to reach the instructor, or may have automatically been rejected by an email client or server. Please try to contact the instructor again and possibly use the phone or an in-person visit if email is failing.

Make-up Policy

1. Assignments are to be turned in on time. Assignments which are not turned in on time will not be accepted unless individual arrangements are made **in advance** with the instructor. In unusual cases where late assignments are accepted, the cost of being late is ten percent of the total possible points for every portion of a day late, up to a maximum of three days late. For example, an assignment received twenty-five hours past its due date will lose twenty percent of its total possible point value (because it is two days late). Assignments which are received more than three days (seventy-two hours) late will not be accepted and are not worth any points. Exceptions may be made to this rule if the student contacts the instructor before the due date and makes special arrangements **in advance** with the instructor. All late acceptance decisions of this nature are left solely to the discretion of the instructor. This rule does not apply once answers to an assignment have been distributed or posted. Assignments submitted after answers have been released are worth zero points even if the answers are posted one minute past the due date.
2. Answers to assignments may be posted online, handed out in class, or sent via email by the instructor. Once an answer to an assignment has been released, no further submissions for the assignment will be allowed. This rule supersedes all other rules about when late assignments may be accepted. In general, the instructor will try to wait at least forty-eight hours before posting or distributing solutions, but there is no guarantee, so get your assignments in on time.
3. Tests are to be taken at the day and time scheduled. Failure to take a test at the scheduled time may result in a grade of 0 for that test. In the case of an excusable absence or a genuine emergency, the instructor must be contacted as soon as possible, preferably before the scheduled test, to reschedule the makeup of that test in the Learning Skills Center on the day the student returns to campus.

Attendance Policy

Class attendance is strongly encouraged. You are responsible for whatever was covered in class, whether you are there or not. If you must miss a class, it is your responsibility to contact the instructor and make arrangements for notes, handouts, or announcements that were missed. Although attendance is not counted toward the final grade, there may be coursework which is done during class time which may count toward the final grade and may not be able to be taken outside of class time.

Kishwaukee College Policies and Resources

It is the responsibility of the student to be aware of Kishwaukee College Policies & Resources found on this link: kish.edu/kcsyllabuspolicies

Tentative Weekly Schedule

Please note that this schedule and the topics covered are likely to change. Changes will be announced in class. If you are not able to attend class, it is your responsibility to find out what was covered. A more detailed schedule is provided on the course website. Assignment descriptions and due dates will also be posted on the course web site.

Week	Date	Topics	Readings
1	8/22, 8/24	Overview of course and introduction to programming • syllabus • basic programming concepts • getting Java installed • entering, compiling, and running a Java program	Eck Chap. 1 Downey Chap. 1
2	8/29, 8/31	Variables, expressions, and assignment statements • comments • program style conventions • primitive data types in Java • converting between primitive data types • the String class • parsing a String as a number • declaring and initializing variables • literals • constants	Eck Chap. 2 Downey Chaps. 2, 3, 9

		• arithmetic operators and precedence • the concatenation operator • simple CLI input and output	
3	9/5, 9/7	Selection • **Note: School closed for Labor Day on Monday, 9/4/17** • logical operators • comparing Strings • if statement • if/else statement • nested if/else statements • variable scope • conditional operator (if time permits) • switch statement • formatting output	Eck Chaps. 3.1, 3.5, 3.6 Downey Chaps. 5.1 - 5.5, 9
4	9/12, 9/14	Repetition • increment and decrement operators • while loop • do/while loop • for loop • variable scope (revisited) • loop counters • sentinel values • accumulators • nested loops • break and continue (if time permits) • generating random numbers • text file input and output	Eck Chaps. 3.1, 3.3, 3.4 Downey Chap. 7
5	9/19, 9/21	Methods • syntax of a method • passing arguments to a method • returning a value from a method • passing by reference (objects) vs. passing by value • variable scope and lifetime • designing solutions using methods	Eck Chap. 4 Downey Chaps. 4, 6
6	9/26, 9/28	Arrays • array declaration • array initialization • accessing and modifying elements of an array • arrays of objects • passing an array to a method • common array algorithms (minimum, maximum, sum, fill, display) • linear search • binary search	Eck Chaps. 3.8, 7 Downey Chap. 8
7	10/3, 10/5	Arrays (continued) and introduction to objects • sorting an array • classes and objects • instance and static variables • creating (instantiating) an object of a class • constructors • packages and import statements	Eck Chaps. 7.4, 5.1, 5.2 Downey Chap. 11

8	10/10, 10/12	Object-oriented programming and midterm exam • instance and static variables • constructors • inheritance and composition • passing objects to/from methods • access modifiers (public, private, protected, default) • **Midterm exam 10/12/17**	Eck Chap. 5 Downey Chap. 11
9	10/17, 10/19	Designing objects • inheritance and composition • passing objects to/from methods • access modifiers (public, private, protected, default) • create and use overloaded methods • create and use overridden methods	Eck Chap. 5 Downey Chap. 11
10	10/24, 10/26	Designing objects (continued) • inheritance chains • the Object class • the "this" reference variable • superclass references and calls • access modifiers revisited (public, private, protected, default) • abstract methods and classes • interfaces • polymorphism • create and use overloaded methods revisited • create and use overridden methods revisited	Eck Chap. 5 Downey Chap. 11
11	10/31, 11/2	Text processing, error handling • the StringBuilder class • tokenizing a String • parsing Strings (revisited) • exception handling with try and catch • throwing an exception • assertions	Eck Chap. 3.7 Online notes
12	11/7, 11/9	Creating a GUI • the components of a GUI (containers, components, layout managers, listeners) • AWT and Swing • the event dispatch thread • create a container (JFrame, JPanel) • set a layout manager • create components (JLabel, JButton, JTextField) • add components and containers to containers • set JFrame settings • create a simple non-functional GUI	Eck Chap. 6
13	11/14, 11/16	Creating a GUI continued • create additional components (JComboBox, JRadioButton, JCheckBox) • create and use a ButtonGroup • create and use listeners • get input from a GUI component • display information on a (JLabel) GUI component • create a simple functional GUI	Eck Chap. 6
14	11/21, 11/23	Applets • discuss differences between applications and applets	Online notes

		• create a working applet • **Thanksgiving - school closed 11/22 5 P.M. - 11/25**	
15	11/28, 11/30	Recursion • solving problems using recursion • examples of recursive methods	Eck Chap. 9.1 Downey Chap. 6.7
16	12/5, 12/7	Review or additional topics	
17	12/12	**Final exam: Noon - 1:50 P.M., Rm. A-1374**, Comprehensive	

Addendum

Suggested assignment topics:
1. input, calculations, output
2. input, calculations, selection, formatted output
3. repetition
4. methods
5. array processing
6. array processing, methods, sort implementation
7. creating and using objects
8. text file processing, selection, repetition, exception handling
9. non-functional GUI, OOP concepts
10. functional GUI, selection, OOP concepts