ICS 111 - Introduction to Computer Science

Welcome to Introduction to Computer Science. This course is designed to provide an introduction to programming techniques. By the end of the course, you should be able to:

- Use the java programming language to build object-oriented programs and applications.
- Identify the problem to be solved and determine what input, output, and data structures are needed to solve it.
- Understand what objects are and use them to create efficient programs.
- Retrieve data from the keyboard and output it to the screen.

Instructor Information

David Maxson
David.Maxson@hawaii.edu
Office hours: Online

Student Learning Outcomes

The Student Learning Outcomes for this course are:

- Understand the relationships between computer systems, applications, programming, and programming languages.
- Design, code, compile, run, and debug computer programs using an object-oriented programming language.
- Demonstrate an understanding of primitive data types, expressions, strings, and arrays.
- Understand and use the core concepts of an object-oriented programming language (classes, objects, methods with parameters, abstract classes, interfaces, inheritance, and polymorphism).
- Understand and use basic computer language concepts such as program flow, conditionals, and loops.

Class times and location

This is an online class. All lessons and interactions will be through Laulima.

Lessons will be assigned by week. The week begins at one minute past midnight on Mondays and ends at midnight on Sundays. All projects and quizzes will be due by the end of the week in which they are assigned unless otherwise noted.
Grading
Your final grade will be determined using a series of quizzes and projects:

1. There will be 6 quizzes worth a total of 130 points.
2. There will be 13 programming assignments worth a total of 470 points. Each project will have a rubric associated with it. Make sure you check the rubric before turning in your assignment.
3. There will be a total of 600 possible points.

Your letter grade is based upon the number of points you earn:

- A - 540 - 600 points.
- B - 480 - 539 points.
- C - 420 - 479 points.
- D - 360 - 419 points.
- F - 0 - 359 points.

Quizzes must be taken during the week they are assigned. Projects can be turned in up to one week late, but you will lose 10% of the assigned points for the projects if it is late. If you cannot complete the quiz or project due to an emergency make sure you inform the instructor prior to the due date.

Resources
Your textbook for this class is Imagine! Java: Programming Concepts in Context by Frank M. Carrano. Readings and most projects will be assigned from the textbook.

We will use Laulima for submitting and returning all assignments as well as for taking quizzes. All grades will be posted in Laulima and you will be able to track your progress by utilizing the grade book. In addition, there will be discussion boards where you may post questions and answers to everyone in the class. Use the private message tool in Laulima to contact the instructor.

We will be using Java to develop our programs. If you are a Mac user you already have the Java JDK (Java Development Kit) installed. For other platforms go to the Java Download Page (http://java.sun.com/javase/downloads/index.jsp) to download the latest SE JDK. It is vital that you install it correctly, including setting the correct path environments.

I will be using the free JGrasp IDE (Integrated Development Environment) for all demonstrations. JGrasp can be downloaded at http://www.jgrasp.org/.

Other Resources

- Tutoring may be available from the TRIO office in Na’auao 146 on the WCC campus.
- The Library has computers configured with all of the software needed for this class.
Statements and Policies

Disabilities Accommodation Statement

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached by phone at 235-7448, by email at lemke@hawaii.edu, or by stopping by her office in Hale ʻAkoakoa 213 for more information.

Academic Dishonesty - Cheating and Plagiarism

You are responsible for the content and integrity of all work you submit. The guiding principle of academic integrity will be that all files, work, examinations, reports, and projects that you submit are your own work. See page 16 of the Windward Community College catalog for further clarification.

You will be guilty of cheating if you:

• Represent the work of others as your own (plagiarism).
• Use or obtain unauthorized assistance in any academic work.
• Give unauthorized assistance to other students.
• Modify, without instructor approval, an examination, paper, record, or report for the purpose of obtaining additional credit.
• Misrepresent the content of submitted work.

A Final Thought

All programming languages use the same basic concepts. By learning the concepts and writing your initial program in pseudocode, you should be able to use any programming language to code your software. It is vital that you understand these concepts. You will use them throughout your studies in Computer Science and as a programmer or Software Engineer afterward. The best way to learn them is to use them. There are many exercises in the book that are not assigned as projects. If you need practice, consider doing more of the programming exercises. Good luck!
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lesson</th>
<th>Reading</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 23</td>
<td>Introduction to ICS 111</td>
<td>Sect 1.1 - 1.17</td>
<td>Quiz 1 - 15 points</td>
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<td>Introduction to Java</td>
<td>Sect 2.1 - 2.9</td>
<td>Assign. 1 - 10 points</td>
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<td>2</td>
<td>Aug 30</td>
<td>Data Types, Screen Output, Keyboard Input</td>
<td>Sect 2.10 - 2.31</td>
<td>Quiz 2 - 15 points</td>
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<td>Assign. 2 - 30 points</td>
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<td>3</td>
<td>Sep 7</td>
<td>Arithmetic Expressions</td>
<td>Sect 3.1 - 3.16</td>
<td>Quiz 3 - 10 points</td>
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<td>Java Mathematical Methods</td>
<td>Sect 3.17 - 3.22</td>
<td>Assign. 3 - 30 points</td>
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<tr>
<td>4</td>
<td>Sep 13</td>
<td>Java Classes and Objects</td>
<td>Sect 4.1 - 4.59</td>
<td>Assign. 4 - 40 points</td>
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<td>5</td>
<td>Sep 20</td>
<td>Defining Classes and Methods I</td>
<td>Sect 6.1 - 6.13</td>
<td>Quiz 5 - 25 points</td>
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<td>6</td>
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<td>Defining Classes and Methods II</td>
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<td>Assign. 6 - 40 points</td>
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<td>Comparison Operators</td>
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<td>8</td>
<td>Oct 11</td>
<td>Static, Final, and Constructor methods</td>
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<td>Oct 18</td>
<td>if Statement</td>
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<td>10</td>
<td>Oct 25</td>
<td>switch Statement</td>
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<td>11</td>
<td>Nov 1</td>
<td>The while loop</td>
<td>Sect 12.1 - 12.29</td>
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<td>12</td>
<td>Nov 8</td>
<td>The for and do-while loops</td>
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<td>13</td>
<td>Nov 15</td>
<td>Designing Classes</td>
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<td>Object Oriented Programming</td>
<td>Sect 16.1 - 16.31</td>
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<td>14</td>
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<td>Arrays I</td>
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<td>Dec 13</td>
<td>Finals Week</td>
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Holidays:

- Sep 6  Labor Day
- Nov 2  Election Day
- Nov 11 Veterans Day
- Nov 25 Thanksgiving