

## **Syllabus**

**Course Number: CS 210**

**Course Title: Introduction to Programming**

### **Course Description:**

CS 210. INTRODUCTION TO PROGRAMMING (3). An entry-level course in which students practice software development using elementary selection, looping, method, string, list, array, and object constructs implemented in a modern programming language.

### **Prerequisite Courses**

**None**

### **Course Overview**

CS210 is an introductory computer-programming course, which will cover object-oriented programming concepts. The control structures covered in this course form the basis of virtually all structured and object-oriented programming languages.

In this course, the student is introduced to programs that use constant and variables of primitive data types, as well as objects, input/output processing, sequential, selection, and iterative control structures, and classes and methods for modular programming. The student is also introduced to the fundamentals of software engineering methodology.

**WARNING:** Ultimately, programming is a skill that requires the ability to translate designs that solve real world problems into programs. The only way to succeed is to practice this skill. Students may require a *significant* amount of time each week to complete the programming assignments.

If you are not willing or able to spend the necessary time, please reconsider whether this is the correct time to attend this class.

### **Course Outcomes**

Upon completion of this course, students should be able to:

1. Explain the importance of algorithms in the problem-solving process and create algorithms to solve simple problems using pseudo-code and flowcharting.
2. Compare and contrast the representation and storage of primitive type variables and objects. Determine the scope of a variable within a program.
3. Design, implement, test, and debug programs that use each of the following fundamental programming constructs: basic computation; simple input/output; sequential, conditional,

and iterative control structures; and classes and methods. Choose appropriate constructs for each programming task.

4. Correctly reason about the control flow in a program.
5. Apply the techniques of decomposition to break a program into smaller pieces.
6. Design and implement simple Classes containing data and method members. Use them to instantiate Objects within OOP language programs.
7. Use arrays within programs.
8. Compare and contrast the passing of parameters that are primitive types vs. parameters that are reference types.
9. Describe strategies that are useful in debugging. Use the scientific method and other strategies to identify program deficiencies.
10. Analyze and explain the behavior of programs that use the fundamental programming constructs introduced in this course.

## Course Materials

### *Required eText*

zyBooks: CS210 Introduction to Programming

Instructions for purchasing the book will be given by the faculty teaching the course.

### *Optional Text*

All the information you need to complete the course is contained in the required text and WorldClass online Content. However, the following additional text is also provided, in case you would like to do further reading on any of the topics covered:

Downey, A. B., & Mayfield, C. (2016) *Think Java: How to think like a computer scientist*, v6.1.3. Needham, MA: Green Tea Press. Free download available at: <http://greenteapress.com/thinkjava6/thinkjava.pdf>

### *Technology Tools*

1. A PC-compatible computer system running a version of the Windows operating system, and administrator rights to install new software.
2. The Java programming environment: Java Development Kit (JDK) with NetBeans  
Instructions for downloading the JDK are included in the WorldClass online course Content.

As with most of Regis learning activities, using various software applications to accomplish assignments requires students to exercise a great deal of responsibility for learning how to successfully operate the software applications.

## Course Policies about repeating the course or adding the course late

### *Repeating the course*

If you are repeating this course (due to a previous withdraw or low grade), you are responsible for **immediately** notifying the instructor. Course assignments/exams that you submitted when you last took the course cannot be repeated -- you will be required to complete alternate assignments and/or exams.

### *Adding this course during the Drop/Add Period*

If you added this course during the drop/add period, after class began on Monday, you are responsible for **immediately** notifying the instructor by email that you joined the course late. Be aware that none of the course due dates will be extended for you. Even if a due date already passed when you added the course, late points will still be deducted.

## Course Policies and Procedures on Academic Integrity

### *Collaboration/Collusion*

Working together on CS210 assignments is NOT permitted.

**All assignments submitted in CS210 must be completed on your own.**

You can **discuss** the assignments with others, but you are not allowed to **show** another student any of your code.

Additionally, all CS210 programming assignment requirements are copyrighted. It is therefore illegal to upload or post any of the assignment requirements to any non-Regis website.

Therefore, it is also violation of the Regis Academic Integrity Policy to do either of the following, either during the time you are taking the course or after course completion.

- Provide another student access to any of your completed programming assignments
- Upload or post any completed programming assignments to any website other than zyBooks or WorldClass

### *Plagiarism*

Plagiarism is submitting someone's ideas as your own. Plagiarism includes submitting code or other work that was obtained from another person, a publication, or an internet web source.

In cases of suspected collusion, plagiarism, or any other form of cheating in CS210, the faculty member will discuss the matter with the student(s) involved. The faculty member reserves the right to question any student orally or in writing about any assignment, and to use the evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating.

All cheating incidents will be reported to the Computer Science department and the Academic Integrity Board for possible further action.

## Pre-Assignment

Complete the following tasks:

Students will read the first week's assigned reading in the textbook (listed in the Course Assignments grid on the next page) and complete the participation activities before the day of class. Be prepared to ask questions on unclear areas and to respond to questions about information in the assigned reading.

**Online Format:** Sign on to WorldClass and become familiar with the course navigation of the Web Curriculum.

## Course Assignments and Activities\*

Week	WorldClass Online Course Content Topics	Textbook Readings	Activities and Assignments (see next chart for Associated Points)
1	<p><b>1:</b> Computing, Programming, and Hardware/Software</p> <p><b>2:</b> Introduction to Java</p>	<p><b>Required Reading in zyBook:</b></p> <p><b>Chap 1,</b> Programming, Problem Solving, and Troubleshooting</p> <p><b>Chap 2,</b> Introduction to Java</p> <p><i>Optional in Think Java</i> Chap 1, sec 1.1 – 1.5</p>	<p>Pre-Course Survey</p> <p>Academic Integrity Training</p> <p>Text Ch 1 &amp; 2 Participation &amp; Challenge Activities</p> <p>Reflection Discussion &amp; Weekly Feedback</p> <p>Ch 2 zyLabs</p>
2	<p><b>3:</b> Java Expressions</p> <p><b>4:</b> Strings, chars, Output Formatting, and Debugging</p>	<p><b>Required Reading in zyBook:</b></p> <p><b>Chap 3,</b> Variables/Assignments</p> <p><b>Chap 4,</b> Strings, Output Formatting, and Debugging</p> <p><i>Optional in Think Java</i> Test of Chap 1, Appendix C, all of Chapters 2 &amp; 3, and Chap 4, 4.1 – 4.2</p>	<p>Text Ch 3 &amp; 4 Participation and Challenge Activities</p> <p>Arithmetic Expression Discussion &amp; Weekly Feedback</p> <p>Ch 3 &amp; 4 zyLabs</p>
3	<p><b>5:</b> Decision Flow Control – if statements</p> <p><b>6:</b> Decision Flow Control – conditional/switch</p>	<p><b>Required Reading in zyBook:</b></p> <p><b>Chap 5,</b> Branches, part 1</p> <p><b>Chap 6,</b> Branches, part 2</p> <p><i>Optional in Think Java</i> Chap 5, 5.1 – 5.7</p>	<p>Text Ch 5 &amp; 6 Participation and Challenge Activities</p> <p>Ch 5 &amp; 6 zyLabs</p> <p>Weekly Feedback</p>

4	<b>7:</b> String and Character methods <b>8:</b> Java User-defined Methods	<b>Required Reading in zyBook:</b> <b>Chap 7,</b> Operations on Strings and Characters <b>Chap 8,</b> User-Defined Methods  <i>Optional in Think Java</i> <i>Chap 9, 9.1 – 9.7, Chap 4, 4.3 – end, Chap 6, 6.1 – 6.3, and 6.5</i>	Text Ch 7 & 8 Participation and Challenge Activities Ch 7 & 8 zyLabs Midterm Exam – 21% Weekly Feedback
5	<b>9:</b> Loop Flow Control (while, for, do-while) <b>10:</b> Nested Loops	<b>Required Reading in zyBook:</b> <b>Chap 9,</b> Loops <b>Chap 10:</b> Nested Loops  <i>Optional in Think Java</i> <i>Chap 7, 7.1 – 7.6</i>	Text Ch 9 & 10 Participation and Challenge Activities Ch 9 & 10 zyLabs Weekly Feedback
6	<b>11:</b> Classes and Objects <b>12:</b> Exceptions  Last week to withdraw	<b>Required Reading in zyBook:</b> <b>Chap 11,</b> Objects and Classes <b>Chap 12,</b> Exceptions  <i>Optional in Think Java</i> <i>Chap 10, all and Chap 11, 11.1 – 11.4</i>	Text Ch 11 & 12 Participation and Challenge Activities Ch 11 & 12 zyLabs Weekly Feedback
7	<b>13:</b> Arrays in Java <b>14:</b> Text Files and File Input/Output	<b>Required Reading in zyBook:</b> <b>Chap 13,</b> Simple Arrays <b>Chap 14,</b> File I/O  <i>Optional in Think Java:</i> <i>Chap 8, 8.1 - 8.8</i>	Text Ch 13 & 14 Participation and Challenge Activities Ch 13 & 14 zyLabs Weekly Feedback
8	<b>15:</b> Arrays of Objects	<b>Required Reading in zyBook:</b> <b>Chap 15,</b> Arrays & Classes  <i>Optional in Think Java:</i> <i>Chap 12, 12.1 – 12.6</i>	Text Ch 15 Participation Activities Ch 15 zyLab Final Exam Course Feedback
<b>Total</b>			<b>100%</b>

*\*Note to Classroom sections only:* Exact dates for reading assignments and programming assignments may differ slightly from the above grid. Your instructor's syllabus, handed out the first night of class, will indicate any changes.

### Summary of Assignments and Percentage Weight towards course grade

Assignment	Value (% of overall course grade)
Course Activities <ul style="list-style-type: none"> <li>• All zyBooks Participation Activities</li> <li>• All zyBooks Challenge Activities</li> <li>• Survey and all forum Discussions</li> </ul> Total for Course Activities	7 % 4 % <u>2 %</u> 13 %
zyLab Programming Assignments <ul style="list-style-type: none"> <li>• 14 assns of various weights</li> </ul>	45 %
Midterm Exam	21 %
Final Exam	<u>21 %</u>
<b>Course Total</b>	100 %

#### **zyBooks Participation Activities**

The zyBooks textbook Participation Activities (PAs) are animations or learning questions you will complete while reading the textbook material. You can earn 100% of the points just by participating *by the due date*.

#### **zyBooks Challenge Activities**

The zyBook textbook Challenge Activities (CAs) requires you to answer questions *correctly* to earn your points *by the due date*.

#### **zyLab Programming Assignments**

zyLab programming assignments will involve writing programs that implement the concepts discussed in the textbook and WorldClass Content.

#### **Discussion Participation**

Class participation/effort is important because we can all learn from each other. Your participation points can make a difference in the final grade. Participation means:

1. a. Present in class every session (classroom)  
b. Present in the forum every week (online)
2. a. Effectively responds to questions from the facilitator (classroom)  
b. Regularly checks forum and submits all required items by the deadlines (online)
3. Interacts/replies to other students in classroom/forum discussions

#### **Exams**

There will be a midterm exam and a final exam. Exam questions will be cumulative, taken from reading assignments and course content.

[See your instructor's syllabus in WorldClass for more on points distribution.](#)

## CC&IS Grading Scale

Letter Grade	Percentage	Grade Point
A	93 to 100	4.00
A–	90 to less than 93	3.67
B+	87 to less than 90	3.33
B	83 to less than 87	3.00
B–	80 to less than 83	2.67
C+	77 to less than 80	2.33
C	73 to less than 77	2.00
C–	70 to less than 73	1.67
D+	67 to less than 70	1.33
D	63 to less than 67	1.00
D-	60 to less than 63	.67
F	Less than 60	0

*Additional information about grading can be found in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx>.*

## CC&IS Policies and Procedures

Each of the following CC&IS Policies & Procedures is incorporated here by reference. Students are expected to review this information each term, and agree to the policies and procedures as identified here and specified in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx> or at the link provided.

- The CC&IS Academic Integrity Policy.
- The Student Honor Code and Student Standards of Conduct.
- Incomplete Grade Policy, Pass / No Pass Grades, Grade Reports.
- The Information Privacy policy and FERPA. For more information regarding FERPA, visit the [U.S. Department of Education](http://www.ed.gov).
- The HIPAA policies for protected health information. The complete Regis University HIPAA Privacy & Security policy can be found here: <http://www.regis.edu/About-Regis-University/University-Offices-and-Services/Auxiliary-Business/HIPAA.aspx>.
- The Human Subjects Institutional Review Board (IRB) procedures. More information about the IRB and its processes can be found here: <http://regis.edu/Academics/Academic-Grants/Proposals/Regis-Information/IRB.aspx>.

The CC&IS Policies & Procedures Syllabus Addendum summarizes additional important policies including, Diversity, Equal Access, Disability Services, and Attendance & Participation that apply to every course offered by the College of Computer & Information Sciences at Regis University.

A copy of the CC&IS Policies & Procedures Syllabus Addendum can be found here: <https://in2.regis.edu/sites/ccis/policies/Repository/CCIS%20Syllabus%20Addendum.docx>.