

# University of Guam

## Computer Science Department

### CS201 – Programming I

Credits: 4

Prerequisites: CS200 or equivalent, and MA110 or MA151a or equivalent

Section 1: Monday and Wednesday 9:00am to 10:50am Initially CS Lab HS 243

Section 2: Monday and Wednesday 12:00pm to 1:50pm Initially CS Lab HS 243

**Instructor: Robert Laurie**

Office: HS248

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Web Site: <http://www.islandman.org>

Office Hours:

Monday and Wednesday 2:00pm to 3:30pm

Tuesday 12:00pm to 3:00pm

**Textbook:**

Internet & World Wide Web: How to Program, 3<sup>rd</sup> Edition

Authors: Harvey Deitel, Paul Deitel, and Andrew Goldberg, 2004, ISBN: 0-13-145091-3

### Course Summary

The focus of CS201 is an introduction to computer coding and programming. This course utilizes an incremental approach to teach various coding and programming methodologies that are utilized on the Internet.

The course will begin with format description codes XHTML and CSS. These topics will serve as an introduction to the coding process and web page creation. They will also provide formatted output capabilities for programming assignments later in the course.

The course will progress to using JavaScript as the high-level programming language with emphasis on program design, coding, debugging, testing, and proper documentation. The fundamental concepts of programming languages will be taught including variables, program control structures, functions, arrays, and objects.

### Learning Objectives

By the end of the course the learner will be able to:

1. Covert numbers between the following number bases to demonstrate understanding of numerical data: binary (base 2), decimal (base 10), and hexadecimal (base 16),
2. Covert character strings to binary and hexadecimal representations and back to character strings to demonstrate understanding of ASCII characters given the conversion table.
3. Describe the following Internet terminology: TCP/IP, HTTP, IP Address, URL, and DNS.
4. Create html documents that utilize valid XHTML strict code and apply this knowledge in the development of a personal website to include home, resume, and topic pages.
5. Identify the features and differences between various computer image formats and utilize appropriate image file formats on their personal website.
6. Create CSS document presentation rules and apply this knowledge in the development of a personal website. This includes application of both element redefinition and classes to inline styles, embedded CSS, and external CSS.

7. Identify the phases of the program development life cycle that includes problem solving, implementation, and use phases.
8. Analyze problem descriptions and apply problem-solving techniques to create a solutions that include both mathematical algorithms (equations) and program algorithms (flowcharts and pseudo code).
9. Declare and initialize program variables utilizing the JavaScript programming language syntax.
10. Identify and apply JavaScript programming language syntax operators in programs.
11. Create procedural style programs that utilize input and output using JavaScript.
12. Analyze problems that require decisions, create selection control structure algorithms, and implement using JavaScript if, else if, and else syntax.
13. Analyze problems that require repeated operations, create repetition control structure algorithms, and implement using JavaScript while, do-while, and for syntax.
14. Create user-defined functions that modularize a program utilizing arguments and parameters to pass-by-value inputs and return one output value.
15. Declare array objects and access array elements in a repetition control structure.
16. Create objects of various object-types and access their properties and methods using JavaScript.
17. Create valid XHTML forms and access form elements using the Document Object Model.
18. Generate form element events to call JavaScript functions to create Event Driven Programs.
19. Create appropriate Graphical User Interfaces that will solve problems.
20. Apply Dynamic HTML principles to create an interactive personal web site.

### Grades:

The grade in the course will be based on scores from four 50-point exams and several projects. The point distribution is shown below with a maximum of 400 points.

Items	Scores	Percent
4 x 50 pt. Exams	200	50%
Projects	200	50%
Total	400	100%

Grade	Score	Percent
A	400 to 360	100.0 to 90.0%
B	359 to 320	89.9 to 80.0%
C	319 to 280	79.9 to 70.0%
D	279 to 240	69.9 to 60.0%
F	< 240	Less then 60%

### Exams:

Four 50-point exams will be given the weeks 5, 8, 12, and 15. I encourage students to study together and will not curve scores.

### Projects:

Several projects will be assigned. Completed project reports must be submitted on the due dates at the beginning of class. Please submit what you have for partial credit on the due date. Grading will be 80% objective (results, explanations, conclusions) and 20% subjective (neatness, clarity, conciseness, extra work). A project report that minimally meets all project specifications will receive a score of 80% of the total points.

If any portion of a project is *Plagiarized* (Using someone's code and saying it is your own), the entire project will receive a score of zero.

### Attendance:

Class attendance is mandatory. If you miss a class or are late for class, it remains your responsibility to obtain information concerning the material covered and upcoming assignments.

Only students with officially excused absences will be able to make up the exams, others will receive a grade of zero. You must contact me via email, to authorize a makeup exam time prior to the scheduled

exam time. You need to provide documentation verifying the excused absence. Failure to comply with these requirements will result in a score of zero for the exam.

If a student misses three classes their final grade will be reduced one letter grade and if they miss six classes they will fail the course.

### CS201 Course Schedule (Tentative)

<b>Date:</b>	<b>Topics:</b>	<b>Read Before Class:</b>
Week 1	Introduction	Syllabus
Week 2	Data: Information coding and number systems	Numbers systems handout Appendix E and D
Week 3	Introduction to computer programming and coding Web browser function and XHTML Structure, Text Markup	Chapter 1 Chapters 2, 4.1 through 4.5
Week 4	<i>XHTML</i> : Hyperlinks, Lists, Images	Chapter 4.6 through 4.11
Week 5	Web Image file types Exam 1: Second class (February 16 <sup>th</sup> )	Chapters 3.7, 5.6, and 5.8
Week 6	<i>XHTML</i> : Tables <i>CSS</i> : Cascaded Style Sheets	Chapter 5.1 through 5.3 Chapter 6
Week 7	<i>CSS</i> : Cascaded Style Sheets	Chapter 6
Week 8	Exam 2: First class (March 7 <sup>th</sup> ) <i>JavaScript</i> : Intro, Variables and Arithmetic Operators Sequential control structures	Chapter 7
Week 9	<i>JavaScript</i> : Selection control structures (if/else) <i>JavaScript</i> : Repetition control structures (while)	Chapter 8
Week 10	--- Spring Break ---	Chapter 9
Week 11	<i>JavaScript</i> : Advanced control structures and operators	
Week 12	<i>JavaScript</i> : Functions Exam 3: Second class (April 6 <sup>th</sup> )	Chapter 10
Week 13	<i>JavaScript</i> : Arrays	Chapter 11
Week 14	<i>JavaScript</i> : Objects	Chapter 12
Week 15	Exam 4: First Class (May 2nd) <i>XHTML</i> : Forms	Chapter 5.4 and 5.5
Week 16	Document Object Model Event Model	Chapter 13 Chapter 14
Week 17	Final Project Presentations	

If you have a disability for which you are or may be requesting an accommodation, you must contact both your instructor and the office of the ADA Services Coordinator in the Student Center (735-2244/2971, TTY 735-2242) as early as possible in the term.