



<b>Course Code</b> MULT-164	<b>Course Title</b> Programming Principles	<b>ECTS Credits</b> 6
<b>Department</b> Design & Multimedia	<b>Semester</b> Fall, Spring	<b>Prerequisites</b> MULT 160
<b>Type of Course</b> Major	<b>Field</b> Applied Multimedia	<b>Language of Instruction</b> English/ Greek
<b>Level of Course</b> 1 <sup>st</sup> Cycle	<b>Year of Study</b> 1 <sup>st</sup>	<b>Lecturer</b> Dr Aimilia Tzanavari
<b>Mode of Delivery</b> Face-to-face	<b>Work Placement</b> N/A	<b>Co-requisites</b> None

## Objectives of the Course:

This course provides students with an introduction to the fundamental concepts of good program design; no prior programming experience is required. The course will introduce basic programming terminology, concepts, and best practices. Students will learn to write programs in JavaScript using such constructs as loops, statements, variables, and functions.

The class examples and assignments will use JavaScript, as it requires nothing more than a text editor and browser to execute; however, the focus of the class will be on learning the syntax and logic of programming, and **not** on writing browser-centric JavaScript. Students are therefore encouraged to think in terms of the logical steps needed to solve a problem, which will build skills that can be taken to any programming language in the future.

## Learning Outcomes:

Upon completion of the course, the student will be able to do the following:

- Solve problems in logical steps
- Describe the basics of program design using JavaScript.
- List the data types and variable types that JavaScript supports.
- Describe the detailed rules governing the creation, use, and manipulation of data.
- Use operators in the control statements to manipulate data.
- Create and use functions.
- Describe object characteristics, use objects, instantiate objects, and create custom objects.
- Use the Math, Number and Date objects.
- Create and use Arrays and strings.

- Validate user input into web forms.
- Work with Images and Audio on the Web

**Course Contents:**

1. Problem solving
2. Good program design
3. JavaScript as a web programming language
4. Basic JavaScript: values, variables, and control flow
5. Functions
6. Data structures: Objects and Arrays
7. Math, Number and Date objects
8. Handling Strings
9. Error Handling

**Teaching Methods:**

Lectures, Practical Exercises and Assignments. Blended Learning.

**Assessment Methods:**

Final Exam, Mid-Term Exam, Assignments/Homework, In-Class Participation.

**Required Textbooks:**

Authors	Title	Publisher	Year	ISBN
Paul Addison	Principles of Program Design: Problem Solving with JavaScript, 1st Edition.	Course Technology, Cengage Learning,	2012	13 978-1-111-52650-4
Marijn Haverbeke	Eloquent JavaScript: A Modern Introduction to Programming	No Starch Press	2011	1593272820

**Recommended Textbooks/Reading:**

Authors	Title	Publisher	Year	ISBN
John Pollock	JavaScript, A Beginner's Guide	McGraw-Hill Osborne Media; 3 <sup>rd</sup> edition	2009	0071632956
Paul Wilton & Jeremy McPeak	Beginning JavaScript	Wrox; 4 <sup>th</sup> Edition	2009	0470525932