Course guide
205215 - CPP - Creative Programming with Processing

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications.

Degree:
BACHELOR’S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN TEXTILE TECHNOLOGY AND DESIGN ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR’S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR’S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR’S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2023  ECTS Credits: 3.0  Languages: English

LECTURER
Coordinating lecturer: IGNASI ESQUERRA LLUCIÀ

Others:

TEACHING METHODOLOGY
This is a full practical course taught in a computer laboratory. Each lecture consists in an introduction to new concepts, followed by students' work on programming exercises.

LEARNING OBJECTIVES OF THE SUBJECT
Processing is a programming language that was developed for easy use in creating art performances with real-time audiovisual interaction. This course goal is to introduce and learn to program interactive applications using Processing, from the very basics to more advanced topics.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>45,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>40.00</td>
</tr>
</tbody>
</table>

Total learning time: 75 h
## CONTENTS

### Module 1: BASIC COMMANDS

**Description:**
Introduction to Processing. Basics commands.

**Related activities:**
Project I

**Full-or-part-time:** 12h 30m
- Theory classes: 5h
- Self study: 7h 30m

### Module 2: INTERACTION

**Description:**
Mouse and keyboard interaction.

**Related activities:**
Project II

**Full-or-part-time:** 12h 30m
- Theory classes: 5h
- Self study: 7h 30m

### Module 3: IMAGE AND SOUND

**Description:**
Image, sound and video processing.

**Related activities:**
Project III

**Full-or-part-time:** 12h 30m
- Theory classes: 5h
- Self study: 7h 30m

### Module 4: DATA VISUALIZATION

**Description:**
Data visualization.

**Related activities:**
Project IV

**Full-or-part-time:** 12h 30m
- Theory classes: 5h
- Self study: 7h 30m
Module 5: COMPUTER VISION

Description:
Processing of webcam images

Related activities:
Project V

Full-or-part-time: 12h 30m
Theory classes: 5h
Self study: 7h 30m

Module 6: ADVANCED TOPICS

Description:
Exporting images, videos and applications.

Related activities:
Project VI

Full-or-part-time: 12h 30m
Theory classes: 5h
Self study: 7h 30m

GRADING SYSTEM

Each module is evaluated with programming exercises. The final grade is the average of tasks. All works must be done individually.

BIBLIOGRAPHY

Complementary: