TEACHING GUIDE

Applied Multimedia Design and Development

Transversal Subject

Alcalá University

Academic year 2021/2022

1º semester

LEARNING GUIDE

Subject name:	Applied Multimedia Design and Development
Code:	100041
Degree:	Cross curricular work in all UAH degrees
Department and Area:	Department of Automática. Computers Architecture and Technology Area
Type:	Cross curricular work (transversal)
ECTS credits:	6 Credits
Year and semester:	1º semester.
Teacher:	Juana María López Fernández Rosa Estriégana Valdehita
Tutoring Schedule:	
Languages:	English friendly / Spanish

1. PRESENTATION

The subject of "Applied multimedia design and development" is relatively new and wide. This subject was included in the old plan of the studies of telecommunication engineering in Universidad de Alcalá de Henares as an elective and now is seen as a cross curricular work of the third year. It covers many aspects and since we need to keep a six-month period, there has been chosen the aspects for students that may be more useful as well as attractive. It emphasizes teamwork and the multidisciplinary character, so they can participate in the subject people from very different degrees.

Multimedia is the integration in a computer of several files like text, graphics, films, animations... These basics are being studied in other subjects so in this we will focus in how to transform them into a digital format and integrate them into a computer. It is intended that the student is able to develop an interactive digital design that is as useful and exciting to have an interest and that allow the work to be carried out in the most attractive possible way.

No prerequisites are required for this work because it is multidisciplinary, and anyone can actively participate in the learning and performance of the tests.
Basic computer knowledge is recommended.
Work will be performed largely on teams that simulate the creation of a company.

2. COMPETENCES

This subject contributes to acquire the following transversal competencies defined by the Quality Technique Unit (UTC) from UAH:

Code	Competencies to be acquired
TRU1	Analisys an sinthesis capacities
TRU2	Speaking and writting communication
TRU3	Information Managment capacities
TRU4	Autonomous learning
TRU5	Work in teams
CP1	Multimedia material development

Learning Results
RA1- Identify and remember the basic theory of media objects that are integrated into a computer.
RA2- Develop and performing the integration of these isolated elements on an interactive final product with a purpose.
RA3- Increasing multidisciplinary mindset of information technology.
RA4- Building capacity for teamwork and experience and a sense of business identity, strategy and marketing thereof.
RA5- Experimenting with capacities of public display of a theme for commercial or compelling character.

3. CONTENTS

CONTENTS SCHEDULING (ESTIMATED)

Thematic units	Themes	Total hours, classes, credits or time dedicated to
Introduction	Theme 1	4 h
Public speaking	Theme 2	4 h
Graphics	Theme 3	4 h
Audio technology	Theme 4	4 h
Video technology	Theme 5	4 h
Media integration	Theme 6	4 h
Developing an interactive		94 hours
Laboratory practice		28 hours

TOTAL: 150 HOURS (56 in classroom + 94 non attendance or virtual)

The full agenda consists of three sections: Theory, Development and Interactive Lab.

SECTION 1   THEORY   (28 HOURS)

The teaching hours are taught by the teacher. Virtual hours in this section will be comprehensive reading material by students.

Theme 1 INTRODUCTION

1. Introduction: Basic concepts
2. Design of multimedia systems

4

3. Multimedia systems applications: Computer-generated films and virtual humans

---

THEME 2 - PUBLIC SPEAKING

- Basics to speak effectively.
- Use audiovisual media for public presentations.
- The art of comunication.

THEME 3 - GRAPHICS

---

1. Properties of light and color.

2. Monitors. Display technology.

3. Bitmapped VS Structured graphics.

4. Computer graphic tools.

5. 2-d and 3-D animation.

6. Using colors.

7. Typography and titling

8. Computer graphic techniques.

THEME 4 – AUDIO TECHNOLOGY

---

1. Audio introduction

    1.1. Principles of sound

    1.2. External effects

    1.3. Evolution of the audio signal

2. Tools.

    2.1. Microphones

    2.2. Recorders

3. Audio production

    3.1. Sound in multimedia productions

    3.2. Creating an audio production enviroment

    3.3. Microphone techniques

    3.4. Recording basics

    3.5. MIDI sequencing tips

THEME 5- VIDEO TECHNOLOGY

1. Video technology.
2. Video production tools.
3. Video production.

THEME 6 – MEDIA INTEGRATION

1. Optical technologies
2. Media integration tools
3. Producing multimedia.

SECTION 2 : DEVELOPING AN INTERACTIVE (94 HOURS)

WRITING AREA

1. Search textual, photographic, video information, navigation structure, etc..
2. Preparing the public presentation
3. Public presentation of the students (2 hours classroom).
4. Team meetings

ARTISTIC AREA

1- Graphic design of the interface and the objects needed.
2- Public presentation of the students (2 hours classroom).
3- Team meetings.

TECHNICAL AREA (2 members)

1- Software learning and integration of the elements to create a prototype.
2- Development of the final design.

6

4- Public presentation of the students (2 hours classroom).

3- Alfa and beta testing.

4- Team meetings.

PRODUCTION AREA

1 - Identity marketing strategy of the company.
2 - Specification of requirements with the client.
3 - Project Planning.
4 - Coordination of team members.
5 - Public presentation of the students (2 hours classroom).
6 - Meetings with the team.

SECTION 3: LABORATORY PRACTICE

(28 HOURS)

There are two hours of weekly lab where students will have the multimedia integration software Flash MX which can be used to perform part of the virtual working hours, meeting between team members, meetings with the teacher or implementation of programming by the technical area.

There will be a Flash tutorial and several solved practices to learn this multimedia software. There will be shown also different exercises for other multimedia software.

4. TEACHING-LEARNING METHODOLOGIES. LEARNING ACTIVITIES

The chosen methodology for scheduling this course have two parts: one practice made by a team and another made individually with theoretical contents.

Theoretical part: it will consist of learning the theory of the topics in both classes and in the documentation which can be downloaded from the website. While teaching, a basic summary of the topics will be done. The rest of the content can be taken from the downloadable content. This content will have several images, interactive documents, videos, animations, etc.

Practice: this part is the most important because it was made by teams that develop an interactive digital design that includes all the multimedia elements. The theme of the interactive can be, in case it was proposed by the teacher, technical in order to create something related with the studies or related to the actual culture. Instead of that, the team can suggest to the teacher his own theme. The software that can be used for the design will be installed in the laboratory computers, but if the team

7

members want to use another program, they can suggest it and use it for its own design without coming into the laboratory and whenever they meet the objectives in the classroom.

The team can be 5 members. Into each team there are different tasks:

Writing area (One person): He will write the necessary information to create the project content. He will create all the text for the interactive and he is the responsible for the creation of the slides of the public exposition of the team work.

Artistic area (One person): He defines the global aesthetic of the project, creating the graphic design of the interfaces. He establishes the composition, colours, size and distribution of the elements. He also creates the visual components for the application.

Technical area (two people): They will create a Flash MX interactive program integrating all the elements like text, graphics, photos, animations, audio and video.

Production area (one person): He establishes the client's objectives and schedule the work plan for the team. He also monitors his compliance, manages resources, and controls the milestones.

Each team member will decide in witch area he belongs after learning the functions of each area and his own aptitudes. If the team members have problems with the communications they can split the team and one of the team members can make two functions. If one or more of the team member have two roles, it will be take in consideration for the final evaluation.

Some of the classes will be devoted to the public speaking of the team members in order to explain the situation of their projects, and to make a work of marketing their final products. Another objective of the course is the experience of the participants in the simulation creation of a design company that makes projects for the clients

RECOMMENDED ACTIVITIES

- Assistance to contact sessions to enlarge the knowledge and guidance to practical work:

  - Introduction to the media integration tool of Flash MX

  - Public speaking of students

  - Class attendance on Applications of Multimedia Systems

  - Class attendance on Future of Multimedia Systems and Research in this field

  - Laboratory attendance not compulsory for making proposed exercises

- Participation in a forum for team members to exchange ideas, information and files

- Face meetings of the members of each team

4.1.   Credits distribution

	Groupal classes:
Number of presential hours:	56 hours (4 hours x 14 weeks) Total: 56 presential hours
Number of the hours of personal work:	Preparation classes, independent learning, homework exercises, tests and practical preparation for the final exam: Total: 94 hours
Total hours	150 hours.

5. EVALUATION: Qualification Procedures

Evaluation Criteria

It will be taken into account the following:

CE1--Reaching to the objective of the project and Digital media adequation

CE2- Correspondency between resources and results. Communications efficiency

CE3-- Using of planification tools

CE4-Comprehension of contents and basic concepts

CE5- Team work and public presentation. Interest and motivation in the practice work

Evaluation Instruments

The subject continuous   evaluation will be made according to the following points:

A-Intermediate Evaluation Proof (PEIn) that consists in :

9

-PEI1 y PEI2- Individual Test exams during the semester. **(30%)**
-PEI3- PUBLIC SPEAKING TEAM EXAM. This consists of a public presentation by teams. **(30%)**

B-Work Delivered (En)
E1: Team evaluation over the final interactive project**. **This will be given to the teacher in a CD at the end of the semester**. (40%)**

The class attendance is not required although it will be necessary the day of the public speaking (20 minutes) and the test exam days. (30 minutes) Anyway the attendance to the laboratory is recommended where exercises will be presented and resolved by the students

Ordinary Call, Continuous Evaluation

Competencies	Learning Results	Evaluation Criteria	Evaluation Instruments	% qualification
TRU1, TRU2, TRU3, TRU4	RA1, RA3	CE4	PEI 1	15%
			PEI 2	15%
	RA5	CE2, CE5	PEI 3	30%
TRU3, TRU4, TRU5 CP1	RA2-RA4	CE1,CE2, CE3, CE5	E1	40%

The student will have a "Not presented" calification if, when following continuous evaluation, have any of these requisites:
-   When not have delivered at least the 40% of the Works to be presented.
-   When not having presented to any of the continuous evaluation theoretical exams.

Ordinary Call, Final Evaluation and Extraordinary Evaluation

Related to the evaluation process in graduated degrees, article 10, point 3 of the learning evaluation processes regulation normative approved in Consejo de Gobierno on 24th of march of 2011 must be taken into account: "To get a final evaluation instead of a continuous one, student must ask for it to the Dean of the Centre during the two first weeks of classes of the subject delivering to the Dean a written solicitude. Student must explain the justified reasons that don't allow him, or her, to adopt the continuous evaluation process. The Dean or Director of the Centre will asses the solicitude and answer the student approving or denying the solicitude."

If the solicitude is approved, the final exam will consist of an exam that follows:
PEF-Theoretical exam including all the themes. (one hour) 70% PEF
E1-Development of a presentation work in agreement with the teacher: 30% E1

10

Competencies	Learning Results	Evaluation Criteria	Evaluation Instrument	% qualification
TRU1, TRU2, TRU3, TRU4	RA1,RA3	CE4	PEF	70%
TRU4 CP1C	RA2-RA4	CE1-CE3	E1	30%

The Evaluation in the **Extraordinary Call** is equal to the Ordinary Final whose table is shown above.

In the ordinary call of final evaluation and in the extraordinary call there will be a "Not Presented" calification to the students which don`t make the exam in the date published by the university.

6. BIBLIOGRAPHY

BASIC

- *La Biblia del Multimedia*. Jeff Burger. *Addison-Wesley Iberoamericana, 1997*
- *Introducción al Diseño Digital. J. L. Orihuela. M.L. Santos. Anaya Multimedia, 1999*
- *Manual de Flash MX. MACROMEDIA*
- *El guión Multimedia. Bou Bauzá, Guillem*
- *Audio y Video Digital. Crespo Viñegra, Julio.*
- *Enciclopedia de Microsoft Visual Basic 6*. Fco. Javier Cevallos. *Ed Ra-ma,1999*

COMPLEMENTARY

- *Edición de páginas Web*. Oscar Peña. *Anaya Multimedia.2000*
- *Fotografía Digital. Milburn, Ken. Anaya Multimedia, 2002*
- *Creación Digital de Personajes Animados. Maestri, George. Anaya Multimedia, 1997*
- *Corel Draw 10. Francisco Paz. Anaya Multimedia. 2001*

11

<u>Disclosure Note</u>

The University of Alcalá guarantees to its students that, if due to health requirements the competent authorities do not allow the total or partial attendance of the teaching activities, the teaching plans will achieve their objectives through a teaching-learning and evaluation methodology in online format, which will return to the face-to-face mode as soon as these impediments cease.