Course guides
840074 - TECCAM - Camera Techniques

Last modified: 27/05/2016

Unit in charge: Mataró College of Engineering
Teaching unit: 840 - EUPMT - Mataró College of Engineering.

Degree: BACHELOR'S DEGREE IN AUDIOVISUAL MEDIA (Syllabus 2009). (Compulsory subject).

Academic year: 2016 **ECTS Credits:** 6.0 **Languages:** Catalan, English, Spanish

LECTURER

Coordinating lecturer:

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. CEA5: To plan, design and realize an audiovisual product (made up by fixed and moving images) taking into account both technical and artistic features in all its components.
2. CEA6: To design, plan and produce, using multiple cameras, live and in studio according to all the product stages (both in the artistic part of the design and contents and the technical part)
3. CEA8: To design the lighting needs of a location in terms of characteristics and the production's final aim.

Transversal:
4. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.

TEACHING METHODOLOGY

Theoretical concepts will be presented in the classroom by the lecturer. In the same way,practical exercicies will be solved in class to illustrate the theory to generate a debate in the room with the participation of the students.
During the practical activities the students will practice with the cameras, tripods and other audiovisual stuff. The Activities are a fundamental part of the classes, as they serve to show a tangible and direct theoretical concepts taugh in class. The activities will increase their level of complexity and thus, the requirement on the quality and delivery will be affected. Therefore is basic the commitment of the students to deliver te materials on time.

LEARNING OBJECTIVES OF THE SUBJECT

After finish the subject. the student will be able to:
- To know the video techonology of the video camera and the digital environment.
- To work professionally videographic techniques depending on the recording characteristics.
- Acquire theoretical and practical knowledge of the various techonological tools and narratives when we record an av. product.
- Ability to work in a team and play a certain rol inside it during the production of an audiovisual work.

STUDY LOAD

Type	Hours	Percentage
Guided activities	8,0	5.33
Self study	90,0	60.00
Hours large group	40,0	26.67

Type	Hours	Percentage
Hours small group	12,0	8.00

Total learning time: 150 h

CONTENTS

(ENG) 1: Digital technology

Description:
This content is working:
The different types of video camera that exists on the market today according to their quality.
The different video signals.
The television signal formats.
The main characteristics of television formats.

1.1 Basic Principles camera work today.
1.2 The eye and the camera.
1.3 Types of camera based on its quality.
1.3.1 Domestic (Consumer).
1.3.2 Industrial (Prosumer).
1.3.3 Professionals (Broadcast): ENG, EFP, studio camera.
1.4 From analogue to digital and SD to HD.
1.5 Analogue TV (SD): PAL, NTSC, SECAM.
1.6 High-definition (HDTV).
1.6.1 Full HD, HD Ready, UHDTV, Digital Cinema (DCI).
1.6.2 Display Format.
1.7 The video signal: RGB, component, composite.
1.8 Resolution, sampling, color depth and compression rate.
1.9 Formats.

Full-or-part-time: 15h
Theory classes: 6h
Guided activities: 1h
Self study : 8h

(ENG) 2: Morphology of the video camera I: How it works

Description:
This content is working:
The main parts of the professional video camera.
Its use according to the recording needs.

2.1 The objective.
2.2 Focus ring.
2.3 Iris ring.
2.4 The shutter.
2.5 Balance of whites and blacks.
2.6 Filters and zebra.
2.7 Gain control.
2.8 Viewfinder.
2.9 Audio.
2.10 Timecode.

Full-or-part-time: 20h
Theory classes: 5h
Laboratory classes: 2h
Guided activities: 1h
Self study : 12h

(ENG) 3: Morphology of the video camera II: It's technology

Description:
This content is working:
The process of color uptaked by the CCD and CMOS.
The technical characteristics of the different objectives.
The relationship between the depth of field, the lens and the f numbers.

3.1 The tricolor searation. Dichroic prism, Bayer mask, Foveon.
3.2 The CCD / CMOS.
3.3 RAW
3.4 Characteristics of optical lenses.
3.4.1 Fixed Lens.
3.4.2 Removable lens.
3.5 Objectives.
Fisheye 3.5.1.
3.5.2 Wide.
3.5.3 Normal.
3.5.4 Tele.
3.5.5 Zoom.
3.5.6 Other types.
3.6 The approach.
3.7 Depth of Field.
3.8 Focal length.
3.9 Brightness and f number.

Full-or-part-time: 23h
Theory classes: 6h
Laboratory classes: 2h
Guided activities: 1h
Self study : 14h

(ENG) 4: Dialogue between two or more characters

Description:
This content is working:
The visual variant of the principle of the triangle before shooting a dialoge between two characters.
How to skip the axis between two or more characters.
The correct location of the camera in front of two, three and four characters based on the position of the camera.

4.1 The principle of the triangle and its variants.
4.2 The axis and how to shif it with two or more static characters.
4.3 Camera positions in front of two characters.
4.4 Working with one or more cameras.
4.5 The television interview.
4.6 Locations of the camera shooting dialogs of three characters.
4.7 Camera pivoting.
4.8 Prevalence of focus.
4.9 The raccord.
4.10 Camera positions shooting dialogues of four characters.

Full-or-part-time: 30h
Theory classes: 9h
Laboratory classes: 4h
Guided activities: 2h
Self study : 15h

(ENG) 5: Camera positions and continuity with moving characters

Description:
This content is working:
The different types of off-field and its narrative possibilities.
The movement of the actors according to the axis and how to shift it.
The continuity between shots.
Different ways to record a visual action.

5.1 The field and off field.
5.2 Links during and after the move: waiting shot and held shot.
5.3 Ways to visualize the action.
5.4 The axis break with moving characters.
5.5 Editing inside the camera.
5.5.1 Script.
5.5.2 Structure.
5.5.3 Planning.

Full-or-part-time: 23h
Theory classes: 6h
Laboratory classes: 2h
Guided activities: 1h
Self study : 14h

(ENG) 6: Camera in motion

Description:
This content is working:
Camera supports and stabilizers.
Camera movements.
Camera angles.
Camera and actors movements during a long take.

6.1. Camera supports.
6.1.1 Simple.
6.1.2 Body.
6.1.3 Stabilizers.
6.2 Basic rules of camera movements.
6.3 Types of pan & scan.
6.4 Angulation.
6.5 Crane shots.
6.6 The traveling.
6.7 The long take.

Full-or-part-time: 29h
Theory classes: 8h
Practical classes: 2h
Guided activities: 2h
Self study : 17h

ACTIVITIES

(ENG) ACTIVITY 1: LEARNING THE VIDEO CAMERA(CONTENT 1 AND 2)

Full-or-part-time: 7h
Laboratory classes: 2h
Guided activities: 1h
Self study: 4h

(ENG) ACTIVITY 2: SHOOT A SWEDED FROM A CINEMA TEASER (CONTENT 2 AND 3)

Full-or-part-time: 13h
Laboratory classes: 2h
Guided activities: 1h
Self study: 10h

(ENG) ACTIVITY 3: SHOOT A DIALOGUE BETWEEN TWO CHARACTERS (CONTENT 2, 3 AND 4)

Full-or-part-time: 7h
Laboratory classes: 2h
Guided activities: 1h
Self study: 4h

(ENG) ACTIVITY 4: SHOOT A DIALOGUE BETWEEN THREE CHARACTERS (CONTENT 2, 3 AND 5)

Full-or-part-time: 15h
Laboratory classes: 2h
Guided activities: 1h
Self study: 12h

(ENG) ACTIVITY 5: SHOOT A CHASE BETWEEN TWO CHARACTERS(CONTENT 2, 3 AND 6)

Full-or-part-time: 18h
Laboratory classes: 2h
Guided activities: 1h
Self study: 15h

(ENG) ACTIVITY 6: SHOOT A LONG TAKE (CONTENT 2, 3, 6 AND 7)

Full-or-part-time: 18h
Laboratory classes: 2h
Guided activities: 1h
Self study: 15h

(ENG) ACTIVITY 7: MIDTERM EXAM (CONTENT 1, 2, 3 AND 4)

Full-or-part-time: 10h
Theory classes: 2h
Guided activities: 1h
Self study: 7h

(ENG) ACTIVITY 8: FINAL EXAM (CONTENTS 1, 2, 3, 4, 5, 6 AND 7)

Full-or-part-time: 18h
Theory classes: 2h
Guided activities: 1h
Self study: 15h

GRADING SYSTEM

The assessment of the subject is separated between theoretical content, taught in class, and activities, in the tv studio. The theoretical content will be evaluated using 2 exams (midterm and final exam).
- Midterm exam: 25%
- Final exam: 30%
- Individual theoretical works: 5%
- Activity 1: Will not be evaluated numerically.
- Activity 2: 10%
- Activity 3: 5%
- Activity 4: 5%
- Activity 5: 10%
- Activity 6: 10%

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Complementary:
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