

SUBJECT: Musical Computer Science

STUDIES: Diploma in Teacher Training

CODE: MGOPINM4

TYPE: Optional

YEAR: 3rd

SEMESTER: 1st

CREDITS (hours/week): 4.5

CREDITS ECTS: 3.5

TEACHER: Antoni Miralpeix Bosch

LANGUAGE: Catalan

PRE-REQUISITES: Students should have studied the subject *New Technologies Applied to Education*.

PREVIOUS KNOWLEDGE: The previous knowledge for this subject is related to usual software and Internet user level.

SUBJECTS TO BE STUDIED SIMULTANEOUSLY: None.

SUBJECT DESCRIPTION:

In this subject we will work on basic computer programs and tools for Musical Education. It will consist of editing musical scores, sound and web with the aim to create didactic material and to get used to use new technologies.

OBJECTIVES:

1. Transversal competences:

- Can organise and plan.
- Computer science knowledge related to field of study.
- Can manage information.
- Working in multidisciplinary teams.
- Adaptation to new situations.
- Creativity.

2. Specific competences:

1. Can resort to using new technologies, both to store, record and edit at an educational level.

3. Learning objectives:

1. To know different computer science tools applied to Musical Education. (A)
2. To be introduced to use technologies. (G)
3. To promote musical creativity. (G)
4. To acquire the habit to work with new technologies, both in a personal level and in music class. (D, G and J)

CONTENTS:

1. Introduction to musical computer technologies.

2. Sound edition.

- 2.1. Theory.
 - 2.1.1. General principles of acoustics.

- 2.1.2. Digital sound principles.
- 2.1.3. Sound formats.
- 2.1.4. Sound device in Windows.
- 2.1.5. Sound editor (Adobe Audition, Audacity).
- 2.2. Practice of sound edition in computer.
 - 2.2.1. Basic edition functions: cut, paste, copy, fade out and normalize.
 - 2.2.2. Changes: intensity, singing in tune and tempo.
 - 2.2.3. Effects: echo, reverberation and filtering.
 - 2.2.4. Utilities: noise out, CD track remove.
 - 2.2.5. Multiple tracks.
 - 2.2.6. Format conversion, storage.

3. Musical score edition.

- 3.1. Introduction to Midi.
- 3.2. Musical score editor: MUSIC TIME, ENCORE.
- 3.3. Basic edition components:
 - 3.3.1. Selection methods.
 - 3.3.2. Insertion of musical symbols and text.
 - 3.3.3. Tracks, voices, ports, Midi canals and timbres.
 - 3.3.4. Document configuration, pagination, margins, measure and colours.
- 3.4. Score editor as a sequencer.
 - 3.4.1. Interpretation and changes of intensity, tempo and running time.
 - 3.4.2. Track map.
- 3.5. Midi files edition from Internet.

4. Internet and Musical Education. Application of more common resources for elaborating didactic materials (exams, template, plays, presentations, etc.).

- 4.1. Access to resources and information: links, downloads, utilities and search engine, etc.
- 4.2. "Calaix de música".
- 4.3. Edition of multimedia documents: insertion of musical scores, sounds and images.
- 4.4. Multimedia and common programs (Word, PowerPoint and Paint).
- 4.5. Web edition with FrontPage.
- 4.6. Game creation with Hot Potatoes.

5. Other resources of new technologies: CD Rom / DVD / Mini disc / sequencers / MP3, karaoke / on-line radio / electronic instruments.

METHODOLOGY:

It is a practical subject to know different elements and its didactic possibilities. Class attendance is essential. Explanatory sessions will be mixed with other types of sessions where students can elaborate assignments for this subject.

EVALUATION:

As well as class attendance, different assignments will be assessed to evaluate this subject. Students who have attended an 80% of sessions can choose continuous evaluation where assignments done through the semester will be taken into account (50% of the final mark). There will be a final exam (50% of the final mark).

Final mark of students who have not chosen continuous evaluation will only depend on the final exam.

The final exam will consist of a practical exercise for elaborating a multimedia document where it is necessary to edit and insert a musical score and sound (80% of the final mark) and a theoretical questionnaire (20% of the final mark).

It is necessary to pass the final exam to pass this subject.

- A. Exams.
- B. Oral exams.
- C. Multiple choice exams.
- D. Home assignments.
- E. Reports.
- F. Group reports/assignments.
- G. Computer practical assignments.
- H. Projects.
- I. Presentations.
- J. Class participation.
- K. Lab reports.
- L. Lab participation.
- M. Others.

BASIC BIBLIOGRAPHY:

BOOKS:

- ADOBE PRESS (2005). *Audition 1.5. Diseño y creatividad*. Madrid: Anaya multimedia
- CAÑIZARES, C. (1999). *Multimedia. Edición 2000*. Madrid: Anaya Multimedia.
- COLLINS, M. (2004). *Herramientas de Audio y música digital*. Madrid: Anaya Multimedia.
- CRESPO, J. (2004). *Música digital*. Madrid: Anaya Multimedia.
- EUFONIA n 20 (2000). *Viaje musical por Internet*. Barcelona: Graó
- EUFONIA n 4 (1996). *Música y nuevas tecnologías*. Barcelona: Graó
- IGLESIAS, P. (2002). *Postproducción digital de sonido por ordenador*. Madrid: Ra-Ma.
- JORDÀ, S. (1997). *Audio digital y Midi*. Madrid: Anaya multimedia.
- ROSARIO, E. I M; JUAN F. (2000). *MP3. Guía práctica para usuarios*. Madrid: Anaya Multimedia.
- RUIZ, V.; BORNAY, J.A.; CAPILLA, R.; RAJADELL, S. (2004). *Convierte tu PC en un estudio de música*. Madrid: Anaya multimedia.
- RUIZ, V.; RAJADELL, S.; CAPILLA, R. (2001). *El ordenador como instrumento musical midi*. Madrid: Anaya Multimedia.
- VERGARA, V. (2003). *Música digital*. Madrid: Anaya Multimedia.
- WORSLEY, T. (2001). *Cómo crear un sitio web*. Barcelona: Grijalbo.
- ZARANDIETA, F; ZARANDIETA, J.A. (2003). *Educación por Internet*. Madrid: Anaya Multimedia.

BIBLIOGRAPHY AND COMPLEMENTARY MATERIAL:

WEB SITES:

- *Calaix de música. Centre de recursos virtual per a l'educació musical* (en línia). Barcelona: Facultat de psicologia i ciències de l'Educació Blanquerna. Universitat Ramon Llull, (2002-). <<http://grups.blanquerna.edu/musical/>>
- ARDID, M.; CASTELLÓ, A. *Modulzero Primers passos telemàtics* (en línia). Barcelona: XTEC. Formació permanent, octubre 2004. <http://jasper.xtec.net:7451/cdweb/dades/actu/actual_matform/materials/tc00/index.htm>. [Consulta: 28 juny 2005]
- *Formació en tecnologies de la informació. Materials telemàtics 2005 – 2006* (en línia) Barcelona: XTEC. Formació permanent, 2005 <<http://www.xtec.net/formaciotic/curstele/index.htm>> . [Consulta: 28 juny 2005]

- *BUSQUETS F.; LLINARES F . Informàtica i educació musical* (en línia). Barcelona: XTEC. Formació permanent, octubre de 2004. <http://jasper.xtec.net:7451/cdweb/dades/actu/actual_matform/materials/td113/index.htm>. [Consulta: 28 juny 2005]

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