COURSE DATA

DATA SUBJECT

Code: 33683
Name: Software and hardware in educational contexts
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1305 - Degree in Primary School Education	Facultat de Formació del Professorat	3	Second quarter
1305 - Degree in Primary School Education	Facultat de Formació del Professorat	4	Second quarter
1339 - Grado en Maestro/a Educación Primaria	Facultat de Formació del Professorat	3	

SUBJECT-MATTER

Degree	Subject-matter	Character
1305 - Degree in Primary School Education	Specialist in information and communication technologies	ELECTIVES
1305 - Degree in Primary School Education	Specialist in information and communication technologies	ELECTIVES
1339 - Grado en Maestro/a Educación Primaria	Specialist in information and communication technologies	ELECTIVES

COORDINATION

ANGULO ALEMAN TANYA

GUTIERREZ SOTO JUAN

SUMMARY

The main objective of this course is to introduce the application of digital information and communications technology tools within the teaching-learning process in Primary Education. The course "Hardware and Software in Educational Contexts" is complemented by "Education and ICT" and "Design of Educational Materials."

Educational contexts are embedded in the changing landscape of technological development, new social needs, and political challenges. Therefore, university teacher training must reflect and promote updated and reflective professional qualifications, while taking the first steps toward lifelong learning.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

Students enrolled in this course will be required to apply their knowledge and skills in the following areas:
- Operation of computers with the main current operating systems.
- Use of the internet, email, and office applications; as well as applications for managing and editing digital image, sound, and video files.
- Use of other peripherals, mobile, and electronic devices such as webcams, smartphones, tablets, game consoles, etc.

COMPETENCES / LEARNING OUTCOMES

1305 - Degree in Primary School Education

Advise the members of the educational community as users of information and communication technologies.

Analyse critically the most relevant issues in today's society that affect family and school education: social and educational impact of audiovisual languages and of screens; changes in gender and inter-gender relations; multicultural and intercultural issues; discrimination and social inclusion, and sustainable development; Also, carry out educational actions aimed at preparing active and democratic citizens, committed to equality, especially between men and women.

Assume that teaching must be perfected and adapted to scientific, pedagogical and social changes throughout life.

Be able to use the devices that support information and communication technologies, at the user level, in the educational environment.

Design, plan and evaluate teaching and learning classroom activities in multicultural and co-educational contexts.

Develop a critical spirit towards information and communication technologies and towards the discourses that are generated from them.

Express oneself orally and in writing correctly and appropriately in the official languages of the autonomous region.

Identify and plan the resolution of educational situations that affect students with different abilities and different learning rates, and acquire resources to favour their integration.

Know and apply basic educational research methodologies and techniques and be able to design innovation projects identifying evaluation indicators.

Know how to work as a team with other professionals within and outside the school to attend to each student, to plan the learning sequences and to organise work in the classroom and in the play space.

Know the anthropological principles of the information and communication society, based on the interaction with screens.

Know the processes of interaction and communication in the classroom.

Programme pedagogical interventions taking advantage of the possibilities offered by information and communication technologies.

Promote autonomy in the processes of teaching and learning among students and encourage collaboration in educational actions among both teachers and students.

Promote cooperative work and individual work and effort.

Promote positive, yet critical attitudes towards the use of information and communication technologies.

Recognise the identity of each educational stage and their cognitive, psychomotor, communicative, social and affective characteristics.

Understand that systematic observation is a basic tool that can be used to reflect on practice and reality, and to contribute to innovation and improvement in education.

Understand the influence of information and communication technologies and television on early childhood.

Use information and communication technologies effectively as usual working tools.

Use technologies as creativity enhancers to generate educational resources.

DESCRIPTION OF CONTENTS

1. Personal learning environments

- Introduction. Digital competence and the integrated curriculum in primary education.
- Digital learning objects. Educational innovation and attention to diversity with digital images, sound, and video.
- Technical requirements for the reproduction of digital educational content. Self-learning resources: free software and online resources.
- Basics of digital content creation: authorship, republishing, copying, and reproduction. Rights to digital creations. Open source codes and Creative Commons licenses.

2. The creation and digital editing of audiovisual content

- Introduction. Digital images in educational contexts: graphics, photographs, and videos.
- Digital sound in teaching materials: effects, recordings, and soundtracks.
- Digital video as teaching material: presentations, documentaries, animations, video tutorials, music videos, etc.
- The advantages of free software. Hardware and software for managing image, sound, and video files. Online applications.
- Educational innovation and attention to diversity with video games and digital games.

3. Video games and education

- Introduction. Playful learning environments. Educational application of video games and digital games.
- From electronic games to digital games. Main video game and digital game platforms. Interactive digital games. Offline and online games.
- Hardware, software, and possibilities inside and outside of school.
- Educational innovation and attention to diversity with video games and digital games.

4. The Internet as a resource library and as a learning medium

- Introduction. From Web 1.0 to 3.0. Resources for teachers.
- Classification of online resources: free access, downloads, piracy, sharing, subscription, etc. Internet resources for education, digital culture, and audiovisual education.
- How do primary school students use the internet? Should we educate or prohibit it? Good practices and risk prevention in the use of the internet and social media.
- Collaborative learning with digital resources. Hardware, software, and possibilities for primary school. Social media in educational contexts.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	60,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	90,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00

Total hours	**90,00**

TEACHING METHODOLOGY

Depending on the educational situation, the following methodologies may be used:
- Lecture. The purpose will be to introduce theoretical ideas and share information to encourage critical reflection and debate.
- Seminar. The purpose will be to complement the lecture through open class debate. The results may be used to assess learning or to promote reflection on theoretical and practical knowledge.
- Didactic questioning. The purpose will be to promote meaningful, constructivist learning. The results may be used either as part of continuous assessment or to promote reflection on theoretical knowledge.
- Flipped classroom. The purpose will be to promote meaningful learning and student autonomy. It will be used to conduct practical activities with hardware and software.
- Case study. The purpose will be to show students real or possible situations related to the primary stage regarding the development of a curriculum using hardware, software, and digital or electronic resources.
- Problem-based learning. The purpose will be to solve practical cases and learn to design thoughtful proposals and activities in the primary classroom. It will be used to work on the curriculum by cycles and evaluate teaching proposals.
- Cooperative learning. The purpose will be to promote both autonomous and shared learning. It will serve to develop individual and collective skills necessary for professional and personal life.
- Service learning. The purpose will be to identify a specific problem or demand and attempt to resolve it as part of an active and practical learning process.
- Project work. The purpose will be to coherently articulate different content and achieve an integrated outcome to promote meaningful learning.
- Learning portfolio. The purpose will be to organize the resources used and the results of academic work in a meaningful way. It will serve as a tool for both teachers and students to reflect on the individual and group learning process throughout the course. It can also serve as an assessment tool.

EVALUATION

How will we assess?
1. Through continuous assessment (100% of the final grade). Students must obtain a minimum grade of 5 in each block of the course.
2. At the beginning of the semester, the faculty will explain the sections into which the content is divided and indicate the individual and group assignments for each block.
3. Students who do not adhere to the established dynamics for continuous assessment may take a final exam in the first and second sittings on the theoretical and practical content and skills of the subject. In this case, the final exam will be worth 100% of the course grade.
4. Grades will be calculated taking into account various aspects throughout the course. Student participation in the assignments will be taken into account. In all cases, the current assessment and grading regulations of the University of Valencia (2017/18) will apply.
5. Plagiarism or misuse of artificial intelligence will be punished in accordance with Article 15 of the University of Valencia's assessment and grading regulations.

What will we assess?
a) At least two individual and two group assignments. In each case, the faculty will indicate whether the assignment is individual or group. Examples of assignments include oral presentations, text commentaries,

workshops, seminars, written or oral exams, development of learning portfolios, etc.
b) Acquisition of new skills, knowledge, and competencies that students must demonstrate in class by completing quizzes or practicing based on offline assignments.
c) Individual responsibility and positive interdependence as part of collaborative group work, both in class and in assignments to be completed outside of class.
d) Active participation and autonomy throughout regular student monitoring, both during class sessions and in the virtual classroom. This can also be achieved through face-to-face tutoring, individual or group, and e-tutoring.

REFERENCES

Basics:

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