

Information and Communication Technologies

Code: 103841
ECTS Credits: 6

Degree	Type	Year	Semester
2501928 Audiovisual Communication	FB	2	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Joan Vila Triadú
Ludovico Longhi

Prerequisites

To take this course requires a basic ability to understand concepts of physics and reading comprehension of English.

Objectives and Contextualisation

This course is part of the subject "Communication", which also includes the subjects of History of Communication, Written and Audiovisual Communication Languages, Structure of Communication and Communication Theories.

Therefore, the subject fits into the group of basic subjects related to communication, all of them with 6 credits.

The aim of this subject is to provide the basic keys to interpreting technologies and their role in society. It is an in-depth and at the same time theoretical introduction, to give the basis for reflection on technology, once the more practical subject of Technologies in Audiovisual Communication has been taught in the first year, first semester. The subject of Information and Communication Technologies is the natural continuation.

The objective of this course, as defined in the curricula, is the study of the technologies associated with the development of the information and knowledge society, considering especially their impact on innovation and on the creation of socio-cultural environments. The aim is to reflect on the role of technologies in society, citizens and the audiovisual industry.

Specifically, the objectives of the course are:

- To know and identify the main theoretical discourses on technology.
- To know the main concepts related to audiovisual technology.

- To know, identify and analyze the advantages and disadvantages of each technology related to the audiovisual transmission and reception.
- To reflect critically on the technological discourse and the application of the information and audiovisual communication technologies.

Competences

- Demonstrate a critical and self-critical capacity.
- Demonstrate a self-learning and self-demanding capacity to ensure an efficient job.
- Develop autonomous learning strategies.
- Develop critical thinking and reasoning and be able to relay ideas effectively in Catalan, Spanish and a third language.
- Differentiate the disciplines main theories, fields, conceptual developments, as well as their value for professional practice.
- Manage time effectively.
- Master the technologies and languages characteristic of audiovisual communication, and those associated with discourse building.
- Research, select and arrange in hierarchical order any kind of source and useful document to develop communication products.
- Rigorously apply scientific thinking.

Learning Outcomes

1. Apply the principles and techniques of discourse building.
2. Demonstrate a critical and self-critical capacity.
3. Demonstrate a self-learning and self-demanding capacity to ensure an efficient job.
4. Develop autonomous learning strategies.
5. Develop critical thinking and reasoning and be able to relay ideas effectively in Catalan, Spanish and a third language.
6. Identify the fundamental principles of audiovisual languages.
7. Identify the fundamental principles of audiovisual technology.
8. Identify the structural foundations of the audiovisual system.
9. Manage time effectively.
10. Research, select and arrange in hierarchical order any kind of source and useful document to develop communication products.
11. Rigorously apply scientific thinking.

Content

1.- Conceptual introduction to ICT

1.1.- Knowledge-Information-Communication

1.2.- Telecommunications, audiovisual and information technology: products and services

1.3.- Cultural Industries, Creative Industries and Entertainment Industries

2.- The technological discourse

2.1.- Epistemological positions

2.2.- Technophile, technophobe, determinists and sceptics

3.- Life cycle of technologies

3.1.- The natural cycle of Lehman-Wilzig and Cohen-Avigdor

- 3.2.- The Henderson and Clark model of technological innovation
- 3.3.- Technological discontinuity
- 3.4- Disruptive technologies and innovations
- 3.5.- Dissemination of innovations
- 3.6.- Keys to the success of a technology and the brakes and accelerators of its development
- 3.7.- Effects of technology on the audiovisual sector
- 4.- Electromagnetic spectrum
 - 4.1.- Concepts about electromagnetic waves
 - 4.2.- Electromagnetic and radio spectrum
 - 4.3.- Bandwidth
- 5.- Transmission systems
 - 5.1.- Definitions
 - 5.2.- Topology
 - 5.3.- Typology
- 6.- Technological convergence and standards
 - 6.1.- Definition of convergence
 - 6.2.- Typology
 - 6.3.- Characteristics
 - 6.4 Type of standardisation
 - 6.5 Open and proprietary systems
- 7.- ArtificialIntelligence and Big Data
 - 7.1.- Definitions
 - 7.2.- Type

Methodology

The acquisition of knowledge and skills by students is pursued through various methodological procedures that include classroom lectures or through video sessions, discussion and reflection exercises proposed by the teacher, lectures and seminars, in addition to textual and audiovisual support materials developed ad hoc for the subject and available through Moodle. Seminars will be held on specific topics of the subject in small groups where a series of previous readings will be provided. In addition, in groups of 5-6 students, two audiovisual pieces will be created: a sound piece (of about 5 minutes) about some scientific development; and an audiovisual piece, of between 10 and 15 minutes in length, which will deal with how a technology impacts on our society.

The calendar will be available on the first day of class. Students will find all information on the Virtual Campus: the description of the activities, teaching materials, and any necessary information for the proper follow-up of the subject. In case of a change of teaching modality for health reasons, teachers will take readjustments in the schedule and methodologies.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Seminars	18	0.72	
Theoretical lessons	34.5	1.38	
Type: Supervised			
Mentoring	7.5	0.3	
Type: Autonomous			
Reading, analysis and synthesis of texts, preparation and implementation of work	82.5	3.3	

Assessment

The evaluation of the course is based on three parts with different weighting:

- Work (30%)
- Theoretical exams (40%)
- Seminars (30%)

In order to pass the course, the work and theoretical exams must be passed separately. The seminars are average (they do not need to be passed to pass the subject)

The work is an activity carried out in groups of 5-6 students with scheduled tutorials and a seminar presentation to obtain feedback from the teacher and peers. The students must study the impact of a technology on society.

The work must include a reasoned argument, based on the evidence collected by using primary and/or secondary sources. Knowledge and understanding of the chosen topic, the ability to orient the work towards an objective and the ability to establish connections between theory and concrete cases will be especially valued.

The theoretical exam include questions about the theoretical sessions in class, the lectures and readings in the seminars and the compulsory readings. Each seminar has specific readings and seminar instructions will be given through the Virtual Campus. The readings must be read in advance and the class will work on exercises or presentations in groups or individually. Absences from the seminars, the dates of which will be made public at the beginning of the course, will be marked with a 0.

About the state and conditions of second-chance examination

The last weeks of the semester are devoted to remedial activities. Students who meet the following conditions are eligible:

If they have failed: they must have obtained a minimum mark of 2 in the theory exam.

Students who have obtained a minimum grade of 2 in their work, with the following exceptions: a work that has been partially or totally plagiarized cannot be made up (it is automatic 0).

In case you want to raise the grade:

Students with a mark in the exam or work of more than 7.5 may be accepted. The nature of the test will be explained at the end of the course.

A second-chance examination is not possible for Seminars in any way.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Evaluation test	40%	4	0.16	11, 1, 10, 3, 4, 2, 5, 9, 7, 8
Seminars	30%	1.5	0.06	11, 1, 10, 3, 4, 2, 5, 9, 7, 8, 6
Theoretical work	30%	2	0.08	11, 1, 10, 3, 4, 2, 5, 9, 7, 8, 6

Bibliography

Required readings

- Fernández-Quijada, David. 2011. *Medi@TIC. Anàlisi de casos de tecnologia i mitjans*. Barcelona: Editorial UOC. (Entero, excepto el capítulo VII)
- Diamond, Jared M., 2006. *Armas, gérmenes y acero: breve historia de la humanidad en los últimos trece mil años*, [Barcelona]: Debate. (Capítulo 13 La madre de la necesidad. La evolución de la tecnología).
- Wu, Tim, 2011. *The Master switch: the rise and fall of information empires*, New York, N.Y.: Vintage Books. (Capítulo 20)

Recommended reading

- Anderson, Philip i Tushman, Michael (1990) "Technological Discontinuities and Dominant Designs: A Cyclical Model of Technological Change", *Administrative Science Quarterly*, 35(4): 604-633.
- Balbi, Gabriele i Paolo Magganda (2018). *A history of digital media*. Londres: Routledge.
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- Christensen, Clayton M. (2016). *The innovator's dilemma: when new technologies cause great firms to fail*, Boston, Massachusetts: Harvard Business Review Press.
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- Morozov, Evgeny, (2014). *To save everything, click her: the folly of technological solutionism*, New York: PublicAffairs

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- Rogers, Everett M. (2003) *Diffusion of Innovations*, 5a ed. New York: Free Press.
- Schmidt, Eric & Cohen, Jared (2014). *El Futuro digital*, Madrid: Anaya Multimedia.
- Scolari, Carlos (2008). *Hipermediaciones. Elementos para una Teoría de la Comunicación Digital Interactiva*, Barcelona: Gedisa.