

Degree	Type	Year
2504235 Science, Technology and Humanities	OB	3

Contact

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Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

NONE

Objectives and Contextualisation

- Understand the interrelationship between structure, processing and properties determines the applications of the different types of materials.
- Relate the development of materials and materials science to the construction of civilizations and societies up to the contemporary era, with special emphasis on economic, social, and environmental aspects.

Competences

- Describe the fundamental forces of nature in relation to the configuration of the universe and the structure of matter.
- Make critical use of digital tools and interpret specific documentary sources.
- Recognise the political, social and cultural dimension of science and technology development in the different historical periods.
- Work collaboratively in teams.

Learning Outcomes

1. Assess the reliability of sources, select important data and cross-check information.
2. Describe the concept of material culture and the relationship it has with technological development.
3. Describe the different types of materials and the interrelationship between structure, properties, processing and applications of materials.
4. Develop teamworking skills, blend in and actively collaborate in achieving common goals.
5. Relate the development of materials to the construction of the modern and contemporary societies.
6. Understand the technological basis for the great cultural periods with regard to the possibilities for controlling matter, energy and information.

Content

- Topic 1. Materials and Materials Science
- Topic 2. Materials and geopolitics
- Topic 3. Materials for construction
- Topic 4. Materials for transport
- Topic 5. Materials for information and communication
- Topic 6. Materials for energy
- Topic 7. Materials and sustainability
- Topic 8. Materials for health

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lecturing	32	1.28	3, 5
Practical Tutorial teaching	6	0.24	4, 1
Practical-theoretical lectures	14	0.56	2, 3, 6, 5, 1
Type: Autonomous			
Individual work	95	3.8	3, 5, 1

- Theoretical classes. Presentation of the topic (objectives, contents, explanation of the texts or complementary videos of the topic available in the Moodle Classroom).
- Resolution of demonstrative exercises in the classroom
- Practical work in the classroom
- Elaboration of individual works
- Cooperative learning through commenting on texts in the classroom
- Individual oral presentations
- Independent work by reading and analyzing proposed texts and carrying out assignments

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Activitats diverses a l'aula	20	0	0	2, 3, 4, 6, 5
Complement de fitxa	10	0	0	3, 5, 1
Entrega fitxa individual	15	0	0	3, 6, 5, 1
Primer parcial	22,5	1.5	0.06	3, 5
Segon parcial	22,5	1.5	0.06	3, 5
presentació oral de la fitxa	10	0	0	3, 5
tests de coneixements	0	0	0	6, 5, 1

The continuous evaluation will consist of:

- First partial 22.5%
- Second partial 22.5%
- Various activities in the classroom (debates and comments on readings and videos) 20%
- Individual delivery of the sheet for an assigned material 15%
- Complement of the file of a foreign material 10%
- Oral presentation of own file 10%
- Knowledge tests and viewing of material in the moodle classroom 0%

The single assessment will consist of:

- A written knowledge synthesis test 50%
- Individual written submission of a summary of mandatory readings 15%
- Individual delivery of the sheet for two assigned materials 20%
- Complement of three foreign materials 15%
- Knowledge tests in the classroom and moodle classroom 0%

To pass the subject you will need:

- having completed the two compulsory partials and having a minimum grade of 3.5 in the average of the two partials,
- hand in all the assignments requested and complete the mandatory knowledge tests available in the moodle classroom.
- Have an overall grade higher than 5.0 out of 10.

When the subject does not pass any of the previous requirements (both for the continuous assessment and for the single assessment), but a grade equal to or higher than 3.5 out of 10 is obtained, you will have the right to a make-up test . This recovery test will consist of a final exam that will allow you to pass the subject with a grade of 5 out of 10.

Plagiarism:

In the event of a student committing any irregularity that may lead to a significant variation in the grade awarded to an assessment activity, the student will be given a zero for this activity, regardless of any disciplinary process that may take place. In the event of several irregularities in assessment activities of the same subject, the student will be given a zero as the final grade for this subject.

Bibliography

Available online (ebook) through the UAB Library Service

- Making the Modern World - Materials and Dematerialization. by Vaclav Smil. Wiley.
- Materials and the Environment, by Ashby, Michael.F, 2020.

Available for free at <https://ufl.pb.unizin.org/imos/> (creative commons attribution noncommercial)

- Impact of Materials on Society by Sophia Krzys Agreement; Kevin S. Jones; Marsha Bryant; Debra Dauphin-Jones; Pamela S. Hupp; Susan D. Gillespie; Kenneth E. Sassaman; Mary Ann Eaverly; Florin Curta; Sean Adams; and Bonnie Effros

Others:

The Substance of Civilization, by Stephen L. Sass, Arcade Publishing. New York ISBN-10: 1-61145-401-8.

Software

NONE

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	second semester	morning-mixed
(TE) Theory	1	Catalan	second semester	morning-mixed