

Program	09TT- Engineering in Telecommunication Technologies and Services
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Course number and name	
Number	95000078
Name	The Structure of Matter Estructura de la Materia
Semester	Y2-S3

Credits and contact hours	
ECTS Credits	4.5
Contact hours	54

Coordinator's name	Pedro Jesús Salas Peralta
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Specific course information		
Description of course content		
The course goal is the structural knowledge of solid materials and the relationship between their physical and chemical properties (electric, magnetic, opto-mechanic and thermal) and their structure.		
List of topics to be covered		
1. Introduction to quantum physics, 2. Atomic structure, 3. Covalent bonding, 4. Ionic solids, 5. Metallic solids, 6. Semiconductors, 7. General properties of solids.		
Prerequisites or co-requisites		
None, although it is expected a basic knowledge on mathematics, physics and chemistry.		
Course category in the program		
<input type="checkbox"/> R (required)	<input checked="" type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)

Specific goals for the course	
Specific outcomes of instruction	
RA437 Verbal and written expression adequate to explain the fundamental concepts related to the constitution of matter, using appropriate scientific terminology. RA440 Understand the interdependence between structures and properties of solids. RA442 Understand and develop possible applications of the solids in relation to its structure and properties.	
Student outcomes addressed by the course	
CG1-CG13	

CEB4
 CECT1, CECT3

Bibliography and supplemental materials

- Lozano Lucea, J. J. y Vigatá Campo, J. L., “Fundamentos de Química General”, Ed. Alhambra.
- Mahan, B. H., “Química, Curso Universitario”, Ed. Fondo Educativo Interamericano, S. A.
- Rusell, R., “Química”, Ed. McGraw-Hill.
- Chang, R., “Química”, Ed. McGraw-Hill.
- Askeland, D.R., “La ciencia de los materiales”, Ed. Grupo Editorial Iberoamericano.
- Smith, W. F., “Fundamentos de la ciencia e ingeniería de materiales”, Ed. McGraw-Hill.
- Casabó i Gispert, J., “Estructura atómica y enlace químico”, Ed. Reverté.

Teaching methodology

<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> problem solving sessions	<input checked="" type="checkbox"/> collaborative actions	<input type="checkbox"/> laboratory sessions
Other:			