



POLITÉCNICA

INTERNATIONAL  
CAMPUS OF  
EXCELLENCE

COORDINATION PROCESS OF  
LEARNING ACTIVITIES  
PR/CL/001



E.T.S. de Ingenieros de  
Telecomunicacion

# ANX-PR/CL/001-01

## LEARNING GUIDE

**SUBJECT**

**93000990 - Clinical Seminars**

**DEGREE PROGRAMME**

09AU - Master Universitario En Ingenieria Biomedica

**ACADEMIC YEAR & SEMESTER**

2023/24 - Semester 1

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## 1. Description

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### 1.1. Subject details

<b>Name of the subject</b>	93000990 - Clinical Seminars
<b>No of credits</b>	3 ECTS
<b>Type</b>	Compulsory
<b>Academic year of the programme</b>	First year
<b>Semester of tuition</b>	Semester 1
<b>Tuition period</b>	September-January
<b>Tuition languages</b>	English
<b>Degree programme</b>	09AU - Master Universitario en Ingeniería Biomedica
<b>Centre</b>	09 - Escuela Técnica Superior De Ingenieros De Telecomunicacion
<b>Academic year</b>	2023-24

## 2. Faculty

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### 2.1. Faculty members with subject teaching role

<b>Name and surname</b>	<b>Office/Room</b>	<b>Email</b>	<b>Tutoring hours *</b>
Enrique Javier Gomez Aguilera (Subject coordinator)		enriquejavier.gomez@upm.es	--

\* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

## 3. Skills and learning outcomes \*

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### 3.1. Skills to be learned

CB06 - Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en el desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación

CB07 - Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio

CB08 - Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios

CB09 - Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades

CB10 - Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.

CE-MIB01 - Utilizar el lenguaje especializado empleado en entornos biomédicos y los fundamentos de las ciencias biomédicas para su aplicación en la resolución de problemas médicos de la Ingeniería Biomédica.

CG-MIB01 - Resolver problemas e integrar conocimiento en temas nuevos o escasamente definidos y en entornos multidisciplinares del área de la Ingeniería Biomédica

CG-MIB02 - Analizar y aplicar la reglamentación correspondiente a la sensibilidad social y ética en los ámbitos de operación que pueden darse en Ingeniería Biomédica

CG-MIB03 - Utilizar la filosofía, el método científico y el método experimental para la búsqueda de innovación, la curiosidad científica y el desarrollo de actitudes creativas

CG-MIB04 - Utilizar las tecnologías de la información y la comunicación para la búsqueda de información, datos bibliográficos y adquisición de nuevo conocimiento para la formación permanente y el trabajo autónomo

CG-MIB05 - Utilizar técnicas de expresión oral y escrita para comunicar trabajos y conclusiones a comunidades de iguales o divulgación científica, elaboración de artículos, manuales de estilo y herramientas de edición para fomentar la capacidad de comunicación y disseminación de resultados

CG-MIB06 - Aplicar técnicas de trabajo colaborativo en equipos multidisciplinares internacionales y liderazgo, así como utilizar métodos para asumir la responsabilidad de orientar y dirigir trabajos científicos en el ámbito de la ingeniería Biomédica

CG-MIB07 - Utilizar la lengua inglesa como herramienta de trabajo

### 3.2. Learning outcomes

RA43 - Se ofrecen al alumno una serie de seminarios en el campo de la medicina y de la Ingeniería Biomédica para que el alumno adquiera un conocimiento de los fundamentos fisiológicos y del papel de las tecnologías biomédicas en los principales campos clínicos.

\* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

## 4. Brief description of the subject and syllabus

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### 4.1. Brief description of the subject

This course includes a series of seminars in the field of medicine and biomedical engineering. Students will acquire knowledge about physiological foundations and the role of biomedical technologies in the main clinical fields.

Students will prepare a brief summary of each seminar, which they will deliver within a period of no more than 7 days. There will also be specific sessions organized in the context of the Master on subjects that may vary annually.

#### b) Content

This course is organized around various seminars taught by professionals in the field of medicine and renowned

researchers in the field of Biomedical Engineering and Medicine.

The topics will be related to medicine and clinical practice: Fundamentals of physiology and Cardiology, Neurology and Neuroplasticity, Metabolism and Diabetes, Anesthesiology and Orthopedic Surgery.

Students will prepare a critical summary of each seminar.

## 4.2. Syllabus

1. Tools for scientific publication search and management
2. Neuroplasticity
3. Biomechanics and biomaterials in knee prosthesis
4. Minimally Invasive Surgery
5. Cardiology
6. Oncology
7. Bioethics
8. ETSIT Library resources
9. Innovation in health technologies

## 5. Schedule

### 5.1. Subject schedule\*

Week	Classroom activities	Laboratory activities	Distant / On-line	Assessment activities
1	<b>Tools for scientific publication search and management</b> Duration: 02:00 Lecture			Students will prepare a brief summary of each seminar, which they will deliver within a period of 7 days (aprox.) defined after any seminar Other assessment Continuous assessment Presential Duration: 02:00
2	<b>Library</b> Duration: 02:00 Lecture			
3	<b>Radiotherapy</b> Duration: 02:00 Lecture			
4	<b>Neuromuscular anatomy and physiology system</b> Duration: 02:00 Lecture			
5	<b>Neuroplasticity</b> Duration: 02:00 Lecture			
6	<b>Biomechanics and biomaterials in knee prosthesis</b> Duration: 02:00 Lecture			
7	<b>Minimally Invasive Surgery</b> Duration: 02:00 Lecture			
8	<b>Artificial Pancreas</b> Duration: 02:00 Lecture			
9	<b>Future of Electronic Health records</b> Duration: 02:00 Lecture			
10				
11				
12				Written report based on compulsory attendance to lectures along the course Written test Final examination Presential Duration: 02:00

13				
14				
15				
16				
17				

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

\* The schedule is based on an a priori planning of the subject; it might be modified during the academic year, especially considering the COVID19 evolution.



## 6. Activities and assessment criteria

### 6.1. Assessment activities

#### 6.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
1	Students will prepare a brief summary of each seminar, which they will deliver within a period of 7 days (aprox.) defined after any seminar	Other assessment	Face-to-face	02:00	100%	5 / 10	CB06 CB07 CB09 CB08 CB10 CG-MIB03 CG-MIB04 CG-MIB05 CG-MIB06 CG-MIB07 CG-MIB01 CG-MIB02 CE-MIB01

#### 6.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
12	Written report based on compulsory attendance to lectures along the course	Written test	Face-to-face	02:00	100%	5 / 10	CB06 CB07 CB09 CB08 CB10 CG-MIB03 CG-MIB04 CG-MIB05 CG-MIB06 CG-MIB07 CG-MIB01 CG-MIB02 CE-MIB01

### 6.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Written report based on compulsory attendance to lectures along the course	Other assessment	Face-to-face	02:00	100%	5 / 10	CB06 CB07 CB09 CB08 CB10 CG-MIB03 CG-MIB04 CG-MIB05 CG-MIB06 CG-MIB07 CG-MIB01 CG-MIB02 CE-MIB01

### 6.2. Assessment criteria

Written report (100%)

Continuous assessment

Passing score for the whole course is 5/10.

Assistance to lectures is compulsory unless justified absence.

Students who do not reach the passing score via continuous assessment will be able to do so in the extraordinary examination.

## Final assessment

Final assessment is based on assistance to lectures and reports. Students will need to attain a score of 5 or above to pass the course.

Students who do not reach the passing score via continuous assessment will be able to do so in the extraordinary examination.

## Extraordinary assessment

Extraordinary assessment is based solely on assistance to lectures and reports. Students will need to attain a score of 5 or above to pass the course.

Students will be qualified through continuous evaluation by default. According to the Normativa de Evaluación del Aprendizaje de la Universidad Politécnica de Madrid, students willing to renounce to continuous evaluation must send an email via Moodle to the coordinator three weeks after ending the course.

Evaluation will assess if students have acquired all the competences of the subject. Thus, evaluation through final assessment will be carried out considering all the evaluation techniques used in continuous evaluation (EX, ET, TG, etc.), and will be celebrated in the exam period approved by Junta de Escuela for the current academic semester and year. Evaluation activities that assess learning outcomes that cannot be evaluated through a single exam can be carried out along the semester.

Extraordinary examination will be carried out exclusively by the final examination method.

## 7. Teaching resources

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### 7.1. Teaching resources for the subject

Name	Type	Notes
Anatomy & Physiology (includes A&P Online course), 9e (Anatomy & Physiology (Thibodeau)) 9th Edition	Bibliography	

## 8. Other information

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### 8.1. Other information about the subject