

**COURSE DATA****Data Subject**

<b>Code</b>	44702
<b>Name</b>	Biomedicine and society
<b>Cycle</b>	Master's degree
<b>ECTS Credits</b>	3.0
<b>Academic year</b>	2022 - 2023

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
2224 - Master's Degree in Research and Development in Biotechnology and Biomedicin	Faculty of Biological Sciences	1	First term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
2224 - Master's Degree in Research and Development in Biotechnology and Biomedicin	3 - Research and development in biomedicine	Obligatory

**Coordination**

<b>Name</b>	<b>Department</b>
D'OCÓN NAVAZA, MARIA PILAR	135 - Pharmacology

**SUMMARY**

The course addresses the different aspects of biomedical research that depend on the social environment and have a direct impact on society. Bioethics principles are discussed, as well as issues arising from the application of these principles in the field of translational research. All aspects related to scientific communication in biomedicine and biomedical information will be discussed as well as the sources and tools needed to make a critical interpretation of the scientific literature. Finally, the concept of innovation is developed in the field of medicine to meet regulatory aspects of such innovation and its insertion in the market, emphasizing marketing strategies for a biomedical product



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

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

### Other requirements

## COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

### 2224 - Master's Degree in Research and Development in Biotechnology and Biomedicin

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Be able to integrate new technologies in their professional and/or research work.
- Ser capaces de analizar de forma crítica tanto su trabajo como el de su compañeros.
- Ser capaces de realizar una toma rápida y eficaz de decisiones en situaciones complejas de su labor profesional o investigadora, mediante el desarrollo de nuevas e innovadoras metodologías de trabajo adaptadas al ámbito científico/investigador, tecnológico o profesional en el que se desarrolle su actividad.
- Ser capaces de acceder a la información necesaria en el ámbito específico de la materia (bases de datos, artículos científicos, etc.) y tener suficiente criterio para su interpretación y empleo.
- Aplicar el razonamiento crítico y la argumentación desde criterios racionales.
- Aplicar la Ciencia desde la óptica social y económica, potenciando la transferencia del conocimiento a la Sociedad.
- Capacidad para preparar, redactar y exponer en público informes y proyectos de forma clara y coherente, defenderlos con rigor y tolerancia y responder satisfactoriamente a las críticas que pudieren derivarse de su exposición.
- Ser capaces de trabajar en equipo, sin discriminación entre hombres y mujeres, con eficiencia en su labor profesional o investigadora adquiriendo la capacidad de participar en proyectos de investigación y colaboraciones científicas o tecnológicas.



- Capacidad para desarrollar los resultados científicos obtenidos por uno mismo o por otros científicos a las aplicaciones prácticas de rentabilidad social y/o económica.
- Aprendizaje en la redacción de artículos científicos en los campos de la Biomedicina y la Biotecnología.
- Manejar adecuadamente las fuentes de información científica y poseer la habilidad de hacer una valoración crítica de las mismas, integrando la información para aportar conocimientos a grupos de investigación multidisciplinares.
- Dominar el método científico, el planteamiento de protocolos experimentales y la interpretación de resultados en el ámbito biomédico y biotecnológico.
- Ser capaces de aplicar la experiencia investigadora adquirida tanto en la empresa privada como en organismos públicos.
- Saber aplicar los principios éticos y legales de la investigación científica en biotecnología y biomedicina.
- Saber utilizar un lenguaje integrador y no discriminatorio en todos los ámbitos de la comunicación anteriormente mencionados.

## **LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

1. Mastering the ethical issues related to biomedical research in animal models and in humans
2. Locate sources of information needed to solve a specific biomedical problem.
3. Properly and objective use of specific biomedical databases and literature
4. Write critical reports on the quality of the scientific evidence examined, with a proper presentation of the bibliography.
5. Express the results correctly, clearly and objectively
6. Make presentations and discussions of work done according to various scientific formats (oral, poster, article, review).
7. Use empathic communication in the biomedical context
8. Designing marketing strategies and positioning of a product in the biomedical market
9. Manage the legal requirements for evaluation, authorization and control of new drugs
10. Organize a team and carry it out efficiently.

## **DESCRIPTION OF CONTENTS**

### **1. Bioethics**

Ethical and legal aspects of biomedical research.

Ethical issues arising from the use of animals in biomedicine.

Ethical issues related to the use of human samples for research.

Rights and duties of patients.

The right to patient information and informed consent.

Impact of the Data Protection Act. Legal status



**2. Scientific communication in biomedicine**

Design, methodology and quality in oral scientific communication  
 Design, methodology and scientific quality of written communication  
 Development of information material in biomedicine

**3. Sources of drug information**

Biomedical databases  
 Analysis and critical interpretation of biomedical literature  
 Analysis and critical interpretation of the information provided by the pharmaceutical industry.

**4. Innovative drugs**

Evaluation and authorization of new medicines.  
 Regulatory agencies.  
 Quality guarantees

**5. Strategies for marketing and positioning of a product in the biomedical market**

Techniques to analyze the behavior and preferences of customers.  
 Marketing strategies long term, segmentation and market positioning  
 Shares of short-term marketing: product design and brand, price, distribution and communication

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Development of group work	5,00	0
Development of individual work	10,00	0
Study and independent work	15,00	0
Readings supplementary material	5,00	0
Resolution of case studies	10,00	0
<b>TOTAL</b>	<b>75,00</b>	

**TEACHING METHODOLOGY**

**Lectures:** Aimed at obtaining basic skills. Dogmatic method is used combined with the heuristic method for the presentation of fundamental concepts and the relevant contents of the course, using the media necessary for their development.



**Seminars:** Case method We propose different problems to be solved by students and discussed in sessions supervised by the teacher, which will involve active student participation.

**Individual work:** Students conduct an oral presentation and written work will be reviewed by peers, analyzing the key items to ensure good communication.

**Group work:** Groups of 5-6 students develop a problem or question related to the topic of the course. The work will be presented and discussed at the seminars

## EVALUATION

Formative assessment throughout the course, based on the resolution of problems and issues (40%),

Works presented (40%)

Final Test (20%).

To pass the course will require attendance at 80% of the sessions and obtaining a score greater than or equal to 50% in each section evaluated.

## REFERENCES

### Basic

- Varios autores (2014): Marketing sanitario. Evolución-Revolución. Coord. A. Hernández y J.M<sup>a</sup> Martínez. ESIC EDITORIAL, M
- Jiménez, M.A. (2015): Marketing de los servicios de la salud para no marketinianos. Editorial Pirámide. Madrid
- Marín Sánchez, C. y Pérez Cabañero, C. (2007): Fundamentos de marketing estratégico. Delta publicaciones universitarias, Madrid
- Santesmases Mestre, M. (2012): Marketing, conceptos y estrategias. Editorial Pirámide, Madrid
- Serés E, Rosich L, Bosch F. (2010) Presentaciones orales en biomedicina. Aspectos a tener en cuenta para mejorar la comunicación Fundación Dr. Antonio Esteve <http://www.esteve.org>
- Mabrouki K, Bosch F (2007). Redacción científica en biomedicina: lo que hay que saber CUADERNOS DE LA FUNDACIÓN DR. ANTONIO ESTEVE N<sup>o</sup> 9, Fundación Dr. Antonio Esteve <http://www.esteve.org>

### Additional

- Base de Datos PubMed. U.S. National Library of Medicine and the National Institutes of Health <http://www.pubmed.com>





- Cochrane Library. Biblioteca Cochrane Plus <http://www.cochrane.org>
- EMEA. Agencia europea del Medicamento <http://www.emea.eu.int/>
- Agencia Española del Medicamento <http://www.agemed.es>
- OMS. Organización Mundial de la Salud <http://www.who.int/en/>

