1. OVERVIEW

Subject Area	Organisation and Management of Biotechnology Companies
Degree	Bachelor's Degree in Biotechnology
School/Faculty	School of Biomedical and Health Sciences
Year	First
ECTS	3 ECTS
Type	Compulsory
Language(s)	English
Delivery Mode	On campus
Semester	Second
Academic Year	24-25
Coordinating professor	Doctor Manuel Pizarro Sánchez
Teacher	Cristina Blázquez Barbadillo

2. INTRODUCTION

This course falls under Module VIII: Social and Economic Aspects of Biotechnology, and is taught in the 2nd year along with the Ethics subject.
This module teaches students about how social, legal and economic matters can impact on science and technology. It also develops skills for effective interaction in a professional and social environment revolving around business and science.
The Organisation and Management Biotechnology Companies subject focuses on different issues associated with the business: organisation, operations and the role of leadership. We will analyse corporate strategy taking into account functional areas such as production, marketing, finance and human resources. As well as internal outlook, we will study the business as an open system environment, analysing the trends and factors which affect the financial situation of the biotechnology industry sector. The aim of this subject area is to teach students basic business culture so they can incorporate themselves in the professional biotechnology sector.

3. LEARNING OUTCOMES (RA, by the acronym in Spanish)

Knowledge (CON, by the acronym in Spanish)

CON08. Identify the common technological innovation and collaboration processes in biotechnology companies, understanding the ethical and bioethical principles involved.

- Understand how biotechnology companies are created and run.

Abilities (HAB, by the acronym in Spanish)

HAB04. Design experimental procedures and protocols choosing the most suitable technique in the field of biotechnological research, all the while meeting quality and legislative standards.

- Apply knowledge of biotechnology to industrial sectors including the food, chemical and pharmaceutical industries.

- Demonstrate the ability to design experiments, prepare and present projects and summarise the data obtained.
- Prepare and defend arguments and solve problems related to working in the biotechnology industry.
- Understand the process of technological innovation, together with the stages and conditions of technology transfer in the biotechnology field.

Skills

COMP05. Propose, redact and execute small R&D and innovation projects related to biotechnology, following current rules and regulations.

4. CONTENTS

- The nature and concept of a company.
- The objectives of the company.
- The management process.
- Financial decisions. Sources of funding.
- Investment analysis and appraisal.
- The function of production. Production decisions.
- Planning and controlling the productive process.

The subject is divided into 3 learning units (UA) which are then divided into the following topics:

o Unit 1. Biotechnology industry and company organisation

The aims of this unit are: understand the field of biotechnology and the different areas involved and know how companies in general are organised, particularly those in the biotechnology sector.

- Topic 1. Structure and organisation of the company
- Topic 2. Biotechnology industry

o Unit 2. Entrepreneurship, finance and production

The aims of this unit are: understand entrepreneurship and how to be an entrepreneur, try to identify business development areas, analyse market trends, and also have a good understanding of a range of aspects associated with finance, profit and loss, production and research and development (R&D).

- Topic 3. Entrepreneurship, business ideas and business plans
- Topic 4. Financing, production and innovation

○ Unit 3. Human resources and company strategy

The aims of this unit are: learn how human resource managers perform their roles, understand what Corporate Social Responsibility is and the planning involved in creating a successful business.

- Topic 5. Managing human resources and corporate social responsibility
- Topic 6. Strategy, competitive advantages and planning

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Lecture
- Case studies
- Collaborative learning

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours
Lectures	25
Debates and discussions	5
Spoken presentations	2
Tutorials	15
Independent working	25
On-campus knowledge tests	3
TOTAL	**75**

To develop the intended skills and achieve the intended learning outcomes, students must complete the activities appropriately explained in the virtual campus.

7. ASSESSMENT

The assessment methods, together with how much they each count towards the final grade for the subject area, are as follows:

On campus:

Assessment system	Weighting
On-campus knowledge tests	60%
Case study/problem scenario	10%
Reports and written work	30%

On the Virtual Campus, when you open the subject area, you can see all the details of your assessment activities and the deadlines and assessment procedures for each activity.

7.1. Ordinary exam period

To pass the subject area in the ordinary exam period you must obtain a mark of 5.0 or more out of 10.0 in all assessed parts of the subject. Any part you do not pass in the ordinary exam period will need to be recovered in the extraordinary exam period (resits).

Your final grade will be the average of the partial marks in each of the learning activities you have passed.

The continuous assessment system for the learning activities requires attendance to at least 50% of the classes.

It is compulsory for students studying degrees on-campus to accredit attendance to at least 50% of classes. This requirement qualifies students for the right to obtain academic counselling, support and monitoring from the professor. Failure to accredit attendance to at least 50% of the classes by any of the means proposed by the University will mean that the professor awarding a fail to the student for that subject area in the ordinary exam period in accordance with the grading system outlined in these regulations. All of the above, without prejudice to the other requirements or higher attendance percentages that other faculties may stipulate in their learning guides or internal regulations. Regulations for the assessment of official degree programmes, Art. 1 point 4.

(http://www.uem.es/myfiles/pageposts/reglamento_evaluacion_titulaciones_oficiales_grado.pdf).

7.2. Extraordinary exam period (resits)

To pass the subject area in the ordinary exam period you must obtain a mark of 5.0 or more out of 10.0 in all assessed parts of the subject. Any part you do not pass in the ordinary exam period will need to be recovered in the extraordinary exam period (resits).

Your final grade will be the average of the partial marks in each of the learning activities you have passed.

The continuous assessment system for the learning activities requires attendance to at least 50% of the classes.

It is compulsory for students to accredit attendance to at least 50% of classes. This requirement is essential to the assessment process and qualifies students for the right to obtain academic counselling, support and monitoring from the professor. To this end, students must use the technological means made available by the University to accredit their daily attendance to each of their classes. This system will also serve to guarantee an objective record of the active role of the students in the classroom. Failure to accredit attendance to at least 50% of the classes by any of the means proposed by the University will mean that the professor awarding a fail to the student for that subject area in the ordinary exam period in accordance with the grading system outlined in these regulations. All of the above, without prejudice to the other requirements or higher attendance percentages that other faculties may stipulate in their learning guides or internal regulations. Regulations for the assessment of official degree programmes, Art. 1 point 4.
(http://www.uem.es/myfiles/pageposts/reglamento_evaluacion_titulaciones_oficiales_grado.pdf).

8. TIMELINE

The timeline with delivery dates of assessable activities in the subject area is indicated in this section:

Assessable activities	Date

Activity 1. Come up with an idea based on technology which meets a social demand, business opportunity or activity worth developing. To be assessed in the final presentation	Week 3
Activity 2. Search for R&D financing programs. To be assessed in the final presentation	Week 4
Activity 3. Search for patents. To be assessed in the final presentation	Week 6-7
Activity 4. Come up with a business plan for the idea developed in activity 2 (also include contents from activities 1, 2 and 3). To be assessed in the final presentation	Week 10-14
Activity 5. Oral presentation in groups on the business idea	Week 15
Activity 6. Final knowledge test (Topics 1 to 6)	Week 16

The timeline may be subject to modifications for logistical reasons of the activities. Students will be informed of any changes in due time and course.

9. BIBLIOGRAPHY

The reference work for following this subject area is:

BOOKS

- Baltz, Richard H., Davies, Julian E., Demain, A. L. (2010). *Manual of industrial microbiology and biotechnology.*
- Bateman TS, Snell SA (2011): *Management, leading and collaborating in a competitive world*, New York, McGraw Hill
- Bird C and Romanelli E (2001). *The entrepreneurship dynamic: origin of entrepreneurship and the evolution of industries*. Entrepreneurship congress. Stanford: California.
- Clark, David P., Pazdernik, Nanette Jean (2012). *Biotechnology academic cell update*. Amsterdam: Academic Cell.
- Drucker, Peter F (2007). *Innovation and entrepreneurship: Practice and Principles*. Elsevier: Burlington,MA, USA.
- Hisrich RD, Peters MP (2006). *Entrepreneurship: Starting, Developing and Managing a New Enterprise*. Irwin Publishing Ltd.
- Lopez Carrascosa JL, Modrego A (1994). *La biotecnología y su aplicación industrial en España*. Universidad Carlos III, CSIC, Madrid
- Oliver RW. (2000). *The coming biotech age, the business of bio-materials*, New York: McGraw Hill. E-BOOK
- Philip W (2006). *Strategic entrepreneurship.* Pearson Educación
- Pisano GP. (2006). *Science business. The promise, the reality, and the future of biotech*. Harvard Business School Press
- Sahlman WA (1997). How to write a great business plan. Harvard Business Review. Available at <http://0-search.ebscohost.com.busca.uem.es/login.aspx?direct=true&db=buh&AN=9706292953&site=eds-live>. [November 2015]

SCIENTIFIC ARTICLES:

- Elpida S, Galanakis K, Bakouros I Platias S. (2010). *The spin-off chain*. Journal of Technology Management and Innovation 5 (3): 51-68
- Perkman M, Tartari v, McKelvey M et al. (2013). *Academic engagement and commercialization: a review of the literature on university-industry relations*. Research Policy 42: 423-442.

WEB PAGES:

- Nobel prize. Available at <http://www.nobelprize.org/>
- Eurpopa bio. Available at <http://www.europabio.org/>
- Biotechnologie. Available at <https://www.biotechnologie.de>
- The EU Framework Programme for Research and Innovation Available at <http://www.oepm.es/es/propiedad_industrial/ayudas/ayudas_para_proyectos_de_investigacion_relacionados_con_la_propiedad_industrial/fundacion_genoma_espana.html>
- OEPM Available at <http://www.oepm.es/es/index.html>
- Cdti. Available at < www.cdti.es>
- Cordis. Available at <Crdis. http://cordis.europa.eu>
- 25 Common Characteristics of Successful Entrepreneurs.
  Available at: <http://www.entrepreneur.com/article/200730>.
- Silicon Valley historical association.
  Available at: <http://www.siliconvalleyhistorical.org/>.
- Entrepreneurship
  Available at: <http://www.econlib.org/library/Enc1/Entrepreneurship.html>.

10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

The Educational Guidance and Diversity Unit (ODI in Spanish) offers support throughout your time at university to help you with your academic achievement. Other cornerstones of our educational policy are the inclusion of students with special educational needs, universal access in all our university campuses and equal opportunities.

This ODI unit offers students:

1. Support and monitoring through counselling and personalised student plans for those who need to improve their academic performance.
2. Curricular adaptations to uphold diversity, with assistance for those students who require specific educational support, leading to equal opportunities without significant changes to methodology or evaluation.
3. We offer students a range of extracurricular educational resources to reinforce skills which will enhance their personal and professional development.
4. Career guidance by offering tools and advice to students with doubts regarding their professional careers or those who believe they have chosen the wrong line of study.

Students who need educational support can contact us at:
orientacioneducativa@universidadeuropea.es

11. SATISFACTION SURVEYS

Your opinion matters!

Universidad Europea encourages you to complete our satisfaction surveys to identify strengths and areas for improvement for staff, degree courses and the learning process.

These surveys will be available in the surveys area of your virtual campus or by email.

Your opinion is essential to improve the quality of the degree.
Many thanks for taking part.