



## **BIOTECH BUSINESS MANAGEMENT GUIDE 2016-2017**

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## 1. Descriptive Details

<b>Name of subject: BIOTECH BUSINESS MANAGEMENT</b>	
<b>Code: 9970001109/MBAF002105</b>	
<b>Degree program: BIOTECHNOLOGY, PHARMACY-BIOTECHNOLOGY,</b>	
<b>Year in which it is taught: 1</b>	
<b>Nº of ECTS credits: 3</b>	<b>Nº of classroom hours: 35H</b> <b>Study mode: SEMI-PRESENCIAL</b>
<b>Regulatory prerequisites:</b>	<b>Recommended prerequisites: NO ONE</b>
<b>Name of professor: Esther San José Martínez</b>	
<b>Academic advising/guidance timetable:</b> Previous contact by email: <a href="mailto:esther.sanjose@universidadeuropaea.es">esther.sanjose@universidadeuropaea.es</a>	

## 2. Contextualization of Content and Subject Competences

This course belongs to the VIII module: "Social and Economic aspects of Biotechnology" which is subdivided into two sections: Section 1 is taught in 3rd and 4th years in two different materials, with duration of 12 ECTS; Section 2 is taught throughout the complete Grade and has 18 ECTS. The subject "Biotech Business Management" belongs to Section 2 and it is taught in the first year.

This module imparts knowledge and learning activities that allow students to integrate science and technology with social, legal and economic determinants. It implies also the development of skills to interact effectively in a specific professional and social environment related with business and science. Moreover, this module enables students to carry out their professional work in the area of business through its own powers of management applied to the management of technological innovation, management of biotechnology companies and the leadership of professional teams.

In particular the subject "Biotech Business Management" is focused in different aspects related with business: its organization, its functioning, and the leadership role. Corporate strategy will be analyzed considering functional areas as production, marketing, finance, and human resources. In addition to the inner vision, the company is studied as an open system environment, analyzing trends and factors affecting the economic situation of the biotechnology industry sector. The aim is that students acquire basic business culture that would respond with more guarantees joining the professional field within the biotechnology sector.

The learning objectives are as follows:

- To know the field of Biotechnology and the different areas that cover.
- To know how companies are organized in general and in particular biotechnology companies.
- To understand what is entrepreneurship and who can be an entrepreneur.
- To try to identify ideas to develop a business, analyzing market trends.
- To know several aspects related with finance, production, innovation and strategy.
- To know how human resources managers develop their tasks.
- To know what is Social Corporate Responsibility.
- To know how to develop skills for planning.



### 3. Specific Competences

The specific skills that are developed in this subject are as follows (according to ANECA):

- CE1: Know the process of technological innovation, the stages and conditions of technology transfer.
- CE2: Know and apply the basic economic operation of the production units and markets, as well as the basic techniques of market analysis.
- CE3: Know and apply the basic concepts of the fundamental functions of the company.
- CE4: Know and apply the fundamentals of the management function and management teams.
- CE5: Know and apply the fundamentals of planning production.
- CE6: Purpose of the subject within the overall course of study and its connection to the future career.

### 4. General Competences (UEM cross-disciplinary competences)

The general skills that are developed in this subject are as follows (according to ANECA):

- Initiative
- Entrepreneurship
- CG1. Professional values, attitudes and ethical behavior
  - Understand the importance of applying ethical principles for the benefit of society and the profession.
  - Know how to apply the principle of social justice to professional practice.
  - Develop professional practice with respect, understanding diversity and multiculturalism.
- CG5. Management skills
  - To organize and plan their own work.
  - To take decisions considering different situations, after analyzing different scenarios.
  - Adapt to new situations and contexts.
  - To take initiative and entrepreneurship.
  - Reflect on their own learning and performance in order to continuously improve (self-assessment).

### 5. Content

The subject is structured over 3 Learning Units (LU), which are in turn divided into the following learning resources:

- Unit 1. Biotech industry and organization inside of a company
  - Lesson 1. *Biotech industry* (Ebook)
  - Lesson 2. *Firm's structure* (Interactive whiteboard)

The objectives of this Unit are: to know the field of Biotechnology and the different areas that cover and to know how companies are organized in general and in particular biotechnology companies.

- Unit 2. Entrepreneurship, finance and production
  - Lesson 1. Definitions and requirements to be an entrepreneur (Multimedia topic)
  - Lesson 2. How to make a business plan (Presentation)
  - Lesson 3. The economics of the business. Balance sheets, income statements, etc. (Lecture capture)
  - Lesson 4. Production and R&D (Presentation)



The objectives of this Unit are to understand what entrepreneurship is and who can be an entrepreneur, to try to identify ideas to develop a business, analyzing market trends, to know several aspects related with finance, production, innovation and strategy.

- Unit 3. Human resources and strategy of the company
  - Lesson 1. Human Resources and Corporate Social Responsibility (Presentation)
  - Lesson 2. Strategy of the company and planning as a function of management (Lecture capture)

The objectives of this Unit are to know how human resources managers develop their tasks, to know what Social Corporate Responsibility is and to know how to plan to create a successful business

## 6. Training Activities

The training activities will include the following activities:

- Theoretical classes made by the teacher in the classroom, encouraging discussion and student participation, according to the agenda set
- Monographic Seminars: bibliographic research and discussion of scientific information in small groups.
- Virtual sessions related with different topics
- Visits to the Scientific Park of Madrid, and a some spin-off companies
- Visits to research laboratories in centers of excellence
- Tutorials, Evaluation and self-employment

## 7. Teaching methodologies

Teaching methodology involves a mixed system where more traditional strategies such as lectures (only 4 during the whole course) and conducting cases analysis, virtual sessions, presentations in groups and several exercises are combined, along with teaching based on real problems, cooperative work and the use of online tools through the blackboard platform (questionnaires and surveys, forums, etc) as support for the activities of teachers and students. Of course, all activities will be supported by a bibliography and updated web resources, scientific rigor available to students.

## 8. Assessment Procedures

The general criteria for assessment of each of the Applicable Activities is shown in the table below, as well as its weighted relevance to the overall grading of the subject. Within each Learning Unit you can see more details about the assessment by clicking on the activity.

Learning Units	Assessable activities	Assessment criteria	Modality	Weight
LU 1-3	Individual activity 1 Funding programs for R&D at National and European level	<ul style="list-style-type: none"><li>• Delivery of the work on time.</li><li>• Quality of the contents.</li><li>• Preparation.</li><li>• Comprehension.</li><li>• Oral presentation.</li><li>• Coordination team.</li></ul>	Individual activity	25%
	Individual activity 2 Functional and divisional organization	<ul style="list-style-type: none"><li>• The delivery of the work in expected time.</li><li>• To answer the true answer.</li><li>• Quality in the justification of the answers.</li></ul>		
	Individual activity 3 Business idea	<ul style="list-style-type: none"><li>• Delivery of the work on time.</li><li>• To present a business idea</li><li>• Presentation of the word document</li></ul>		



	Individual activity 4 -Balance sheet exercises -Case study Syngenta	<ul style="list-style-type: none"> <li>• Delivery of the work on time.</li> <li>• To answer correctly the balance sheet exercises.</li> <li>• To answer correctly the case study</li> <li>• The quality of both documents.</li> </ul>		
	Individual activity 5 -Esteve-UAB Case Study, -Video: Biotechnology: the invisible revolution"	<ul style="list-style-type: none"> <li>• Delivery of the work on time.</li> <li>• To answer properly both activities.</li> <li>• The quality of both documents.</li> </ul>		
	Individual activity 6 Business plan	<ul style="list-style-type: none"> <li>• Delivery of the work on time.</li> <li>• Idea.</li> <li>• Word document.</li> <li>• Bibliography.</li> </ul>		
	Group activity 1 Description of three biotechnological companies	<ul style="list-style-type: none"> <li>• Delivery of the work on time</li> <li>• Quality of the contents</li> <li>• Preparation</li> <li>• Comprehension</li> <li>• Oral presentation</li> <li>• Coordination team</li> </ul>	Group activity	10%
	Group activity 2 Managers behavior	<ul style="list-style-type: none"> <li>• Proactive participation within groups.</li> <li>• Quality of the comments.</li> <li>• Capacity of analysis.</li> </ul>		
	Group activity 3 Search for patents related with the chosen idea	<ul style="list-style-type: none"> <li>• Delivery of the work on time.</li> <li>• Contents.</li> <li>• Preparation.</li> <li>• Comprehension.</li> </ul>		
	Group activity 4 CSR approach of three companies	<ul style="list-style-type: none"> <li>• Delivery of the work on time</li> <li>• Quality of the contents</li> <li>• Preparation</li> <li>• Comprehension</li> <li>• Oral presentation</li> <li>• Coordination team</li> </ul>		
	SP1	• Presentation of three biotechnological companies orally	Plenary sessions (Online/ Campus-based)	10%
	SP2	• Visit to the Scientific Park of Madrid		
	SP3	• Presentation of Business Plan elaborated during the course		
Campus-based exam	Campus-based exam	<ul style="list-style-type: none"> <li>• Two objective exams will be done that will include: multiple choice questions, false and true and theoretical questions of the topics, to evaluate the final competitions.</li> </ul>	Individual activity	55%

The **campus-based activities** are carried out on the campus facilities of the Universidad Europea. The schedule and location of the activities will be informed with sufficient advance notice through the online campus. If you are required to bring any particular study material and/or to have carried out any other activities prior to the class, this will also be informed through the online campus.

In order to pass the **regular examinations**, the weighted average grade of all the activities listed in the table must be 5 or more, and you would also have to achieve a grade 5 or more in the knowledge test..

The assessable activities and their relative weight in the final assessment of the subject may be subject to changes, of which you would be informed with sufficient time by the professor in the General Forum of the subject.

Those students who didn't pass the regular examinations should go to the **extraordinary call** and present those missing activities as well as pass the part of the exams that is not above 5



## 9. Materials and Other Considerations

### 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>>. [Novembe5 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/>> [October 2015].
- Eurpopa bio. Available at <<http://www.europabio.org/>> [October 2015].
- Biotechnologie. Available at <<https://www.biotechnologie.de>> [October 2015].
- 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](http://www.oepm.es/es/propiedad_industrial/ayudas/ayudas_para_proyectos_de_investigacion_relacionados_con_la_propiedad_industrial/fundacion_genoma_espana.html)> [October 2015].
- OEPM Available at <<http://www.oepm.es/es/index.html>> [October 2015].
- Cdti. Available at <[www.cdti.es](http://www.cdti.es)> [October 2015].
- Cordis. Available at <[Crdis. http://cordis.europa.eu](http://cordis.europa.eu)> [October 2015].
- 25 Common Characteristics of Successful Entrepreneurs. Available at: <<http://www.entrepreneur.com/article/200730>>. [October 2015].
- Silicon Valley historical association. Available at: <<http://www.siliconvalleyhistorical.org/>>. [October 2015].
- Entrepreneurship Available at: <<http://www.econlib.org/library/Enc1/Entrepreneurship.html>>. [October 2015].



## 10. Coursework outline

The subject is structured into 3 Learning Units; for each one you will cover the topics listed in the previous section, studying each one in depth. You will also carry out Applicable Activities integral to each Unit, and as you progress you will attend an online Seminar. In the table below you can see the work plan for each Learning Unit (specify the type of learning resource for each one, such as for example, podcasts):

Week	Learning Unit	Resources	Applicable Activities (online/campus-based)		Plenary sessions	
			Individual activities	Group activities	Online seminars	Campus-based sessions
1-3	LU 1 (1 ECTS)	Lesson 1. Biotech industry (Ebook) Lesson 2. Firm's structure (Interactive whiteboard)	Individual activity 1 Funding programs for R&D at National and European level Individual activity 2 Functional and divisional organization	Group activity 1 Description of three biotechnological companies Group activity 2 Manager's behaviour	SV1 How to look for funding for R&D activities	SP1 Oral presentations of 3 biotechnological companies



4-7	LU 2 (1 ECTS)	<p>Lesson 1. Definitions and requirements to be an entrepreneur (Multimedia topic)</p> <p>Lesson 2. How to make a business plan (Presentation)</p> <p>Lesson 3. The economics of the business. Balance sheets, income statements, etc. (Lecture capture)</p> <p>Lesson 4. Production and R&amp;D (Presentation)</p>	<p>Individual activity 3 Business idea</p> <p>Individual activity 4 Balance sheet exercises and case study</p>	<p>Group activity 3 Search for patents related with the business idea</p>	<p>SV2 How to get an idea to create a business</p> <p>SV3 Financial issues: How to organize a balance sheet</p>	
8-10	LU 3 (1 ECTS)	<p>Lesson 1. Human Resources and Corporate Social Responsibility (Presentation)</p> <p>Lesson 2. Strategy of the company and planning as a function of management (Lecture capture)</p>	<p>Individual activity 5 Case study "ESTEVE-UAB"</p> <p>Individual activity 6 Business plan from a given idea</p>	<p>Group activity4 Corporate Social Responsibility</p>		<p>SP2 Visit to the Scientific Park of Madrid</p> <p>SP3 Oral presentations business</p>

To see a detailed description of the objective, purpose, method of delivery and evaluation for each of the Applicable Activities, click on the activity within the corresponding Learning Unit.

The submission date for each one of the Applicable Activities and the dates on which the online Seminars are held will be shown in the subject's calendar. If there are any changes made to these dates you will be





notified by the professor with sufficient time in the General Forum and they will be modified on the calendar.

Likewise, you will be informed with sufficient time of the date and location of the campus-based seminars by the lecturer.

The online Seminars will involve the following work dynamics through a *webconference*:

- 1: To show different mechanism for financing Research and Development activities at National and European level
- 2: How to get an idea and develop a business plan
- 3: To explain issues related with financial structure: balance sheet

## 11. Resources

The evaluation will be carried out on a continuous basis and the following parameters are going to be taken into account:

### CONTENTS

Contents are enough and very well explained <b>2 POINTS</b>	Contents are intermediate and explain well the activities of the companies <b>1 POINT</b>	Contents have nothing to do with the requirements <b>0 POINT</b>
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### PREPARATION

The student has prepared very well the subject <b>2 POINTS</b>	The student has worked sufficient on the subject <b>1 POINT</b>	The presentation is not well prepared / focused <b>0 POINT</b>
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### COMPREHENSION

The student understands what he is explaining <b>2 POINTS</b>	The student hesitates and does not seem to understand some parts that he explains <b>1 POINT</b>	The student does not understand at all what explains <b>0 POINT</b>
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### ORAL PRESENTATION

The student expresses perfectly, explains enthusiastically and transmits the concepts very well <b>2 POINTS</b>	The student uses a consistent tone and transmit at a normal level what he/she explains <b>1 POINT</b>	The student speaks softly, locks and do not understand what he says or form or in content <b>0 POINT</b>
<b>COORDINATION TEAM</b> The students are very well coordinated and all team members know the full work <b>2 POINTS</b>	The students are more or less coordinated and not all team members know the full work <b>1 POINTS</b>	The students are not at all coordinated and each of them know only about his/her part <b>0 POINTS</b>



## BIBLIOGRAPHY

The student documents his bibliographical/sources and these are in a consistent level <b>2 POINTS</b>	The student refers references but are not very professional (Wikipedia, only web pages ...) <b>1 POINT</b>	The student do not refer bibliography  <b>0 POINT</b>
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## 12. How to contact the professor

If and when you have any questions about the content or activities covered in a Learning Unit, please remember to post it in the Unit Forum so that all your classmates can read it. One of them might have the very same question as you!

If you have any queries you would like to be exclusively addressed to the professor, you can send him/her a private message using the instant messaging system on the Online Campus. Furthermore, if you feel you need to discuss any topic in more depth, you can arrange to have an online tutorial with your professor.

Make sure you read the messages sent by your classmates and professors on a regular basis, as they provide another means of learning.

## 13. Study suggestions

### General recommendations

Distance learning requires careful planning and regular attendance from the first week. It is important that you access the subject regularly as per the work plan provided to you by the professor. What's more, the exchange of experiences and opinions with professors and other students is a very positive practice, as it allows you to develop basic skills such as: flexibility, negotiation, arguing your case, and of course, critical thinking.

To do this we suggest you adopt a general study methodology based on the following points:

- Maintain a constant and methodical rhythm to your study.
- Access the subject continually in order to keep yourself up to date with the development of the subject.
- Actively participate in it, sending your opinions, questions and experiences about the topics being covered and/or putting forward new topics of interest for debate.
- Read the messages sent by your colleagues and/or your professors.

Your "presence" in the online classroom at least once a week is considered to be of special interest and academic value. Monitoring of your "presence" would be the equivalent to attending classes in person. There are many ways in which you can make yourself present: asking questions, giving your opinion, carrying out activities that the professor may request, taking part in the group activities, etc.

This way of working requires effort on your part, but it also allows you to obtain greater results in developing the subject.