

SYLLABUS

Academic year 2013-2014

1. COURSE DESCRIPTION

Degree:	Biotechnology
Double Degree:	
Course:	Project Management
Module:	8.- Social and Economical Biotechnology Aspects
Department:	Molecular Biological and Biochemical Engineering
Academic Year:	2013-2014
Term:	First term
Total Credits:	4.5 ECTS
Year:	4º
Type of Course:	Compulsory/fundamental
Course Language:	English (B2 level)

Teaching model:	B1	
a. Basic knowledge (EB):		60%
b. Practice and developmental knowledge (EPD):		40%
c. Guided Academic Activities:		

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2. TEACHING TEAM

2.1. Course coordinator: S. Fernando Calatrava González & Enrique Ramos Gómez
(Professor of the PM in Spanish course)

2.2. Professors	
Name:	S. Fernando Calatrava González
School:	Experimental Sciences Faculty
Department:	Molecular Biology & Biochemical Engineering
Academic Area:	Chemical Engineering
Category:	Part time Lecture
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3. ACADEMIC CONTEXT

3.1. Course aim and objectives

Aim

To provide learning experiences through which students will:

- acquire knowledge and understanding, and become acquainted with the different stages and documents that make up a project.
- acquire the basic economic concepts to conduct or participate in any project that students might have to deal with.

Objectives

At the end of teaching term, students will have acquired knowledge and understanding of:

1. the diverse documents that make up a project
2. the terminology used in the drafting and execution of a project.
3. the tools to draft a project.
4. the relationship between the various documents and the project cycle.
5. the organization of complex activities and the legally binding nature of certain documents.
6. the economic aspects related to a project.
7. project execution.

The students will develop further skills in:

8. mastering basic operation of relevant software in project management.
9. assessment projects from economic, environmental and health and safety at work from different points of view.
10. processing, reflecting upon and producing information in a second language (English)

Students will develop positive values about and attitudes towards:

11. themselves, others, learning as a lifelong process, projects and the economy, the environment and health and safety at work.
12. themselves as plurilingual citizens in a multicultural world.

3.2. Contribution to the Training Plan

As mentioned above, the course Project Management is included within training module

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No. 8: Social and economic aspects of biotechnology. This module is divided into two sections. A section that includes Bioethics, Bio-safety, Quality Control and Evaluation (both from the standpoint of analysis and production), as well as aspects related to organization and project management. A second section covers the specific contents of Biotechnology Economics and Management, including aspects of intellectual property and patents, which are of great importance in the biotechnology industry. The module consists of 13.5 ECTS credits, divided into three areas that encompass three different subjects. It is taught in the 7th semester (1st semester of the fourth year) and in the 8th (2nd semester of the fourth year).

Organization and Project Management is the first subject to be taught within the module in which students acquire the knowledge and skills that will help them learn the meaning of 'a project', how it is structured, what the relationship is between the various documents that are integrated, and finally how to perform its evaluation, including from an economic perspective and considering the criteria to be applied for subsequent allocation.

This course will give the student the specific theoretical knowledge needed to anticipate, organize and implement the planning of a particular project as well as to achieve a satisfactory resolution of the aspects related to the material and human resources, cost and schedule of the performances.

3.3. Recommendations and previous knowledge required

Not required

7. KEY COMPETENCIES

4.1 Degree competencies developed during this course

- 93) Learn the methodology about project design, assessment and management.
- 94) Write up projects related to biological process, handling projects management computer tools with the appropriate ability.

4.2. Module competences developed during this course

- 9. Learn the methodology about projects design, assessment and management.
- 10. Write up projects related to biological processes.
- 11. Manipulate the computer tools (software) of projects management.

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4.3. Course-specific competences

1. Become familiar with the terminology used in projects in terms of writing up and execution
2. Know the methodology about projects design, assessment and management.
3. Acquire the necessary tools for writing up a project.
4. Write up biotechnological projects.
5. Handle projects management computer tools
6. Economic evaluation of projects.

4. COURSE CONTENT (TOPICS)

TOPIC 1. - GENERAL PART. Definition. Framework documents. Project stages / phases. Evaluation criteria. Individuals and entities involved in a project.

TOPIC 2. - PROJECT MANAGEMENT DOCS. Documents: Project charter and annexes, Plans, Terms and conditions, Budget, Project brief.

TOPIC 3. - PROJECT PLANNING AND PROGRAMMING. Cost-Time relation. PERT/CPM Methods. PERT in certainty. PERT in uncertainty. Strategic and tactical analysis. PERT costs: time-cost curve. PERT resources: GANTT chart.

TOPIC 4. – ECONOMIC EVALUATION (I). CAPITAL. Capital. Types of capital. Estimation of immobilized Capital. estimation of current assets capital. Costs. Types of costs. Estimation of costs.

TOPIC 5. - ECONOMIC EVALUATION (II). BENEFITS MEASURE. Profitability: static and dynamic methods, DCF, NPV, IRR, MIRR, Payback period formula. Amortisation.

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SCHEDULE

WEEKS	DATES	EB (h)	EPD (h)	TESTS	ASSESSMENT	TOPICS
1		2	0			Presentation y T1
2		2	0			T 1 and T2
3		2	0			T2
4		2	0			T 2 and T3
5		2	2			T3
6		0	0	1	Class virtual test 1	T1 and T2
7		2	2			T 3
8		2	2			T 3
9		2	2			T4
10		2	2			T4
11		0	0		Submit	Computer practice report
12		2	2			T5
13		0	2			T5
14		0	0	1	Online test 2	T3, T4 and T5
15		0	0		Submit	Practical exercises booklet
16		0	0	5	Final Test (1)	
17		0	0	4	Final retake test (2)	
TOTAL		20	14	11		

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5. METHODOLOGY AND RESOURCES

The teaching of this subject is shaped by three basic methodological conditions:

- a balance between theory and practice.
- the involvement and participation of students.
- the acquisition of tangible and objective knowledge, understood as the result of practical tests to be presented throughout the course.

The course includes 20 hours of classical teaching load (classroom lectures) of basic knowledge (EB). This teaching is supported:

- Sometimes with Power Point presentations by the lecturer.
- Sometimes giving the information to the students who working in small groups will have to explain the topic to rest of the class.

In any case, the presentations will get together with activities to help establish and enhance a flow of ideas on the questions which may arise, as well as fostering a discussion on the students' experiences. These classes revolve around of acquisition of the skills included in modules 9 and 10.

The practice and developmental knowledge section are made up of 7 sessions of 2 hours each, (EPD, 14 hours). The placement of 6 of them are in normal classrooms and they consist of solving practical exercises taken from the different booklets, in which there will be explain detailed the steps for their proper resolution.

Some practical exercises in which the students find more difficulty will be able to request that they be solved in class.

Sometimes, the students will have to solve specific practical exercises by themselves in class. Later, solutions will be shared.

The 7th practice will be developed in a computer room and consists of introducing and learning the basic operations of project management software. In this case, the competences to be acquired correspond to module number 11.

Obviously, it is necessary to indicate that also training activities as personal study and virtual tutorials are included, as well as in-person and virtual online tests, in which students work all the competencies of this course.

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8. ASSESSMENT

Assessment is continuous and distributed throughout the term, taking into account the students' attendance and participation (presentations) in the classes of basic knowledge (EB) and attendance and participation (practical exercises solving) in the classes of practice and developmental knowledge (EPD); as well as their contribution on the virtual space of the course in response to compulsory tasks, performing virtual tests or participating in discussion forums.

The assessment process is completed at the end of the term with an exam where the students show if they have acquired the specific capacities of the course that are related to problem solving.

Finally indicate that there is a retake exam only for the students who have not passed any of the sections that make up the course. Each student will be informed in detail of what they have to retake in this final test.

Assessment criteria and instruments:

1. Participation and attendance to classes of theoretical sessions, (EB).
The assessment tools followed for this criterion will be professor's notes.
2. Participation and attendance to classes of practice sessions, (EPD).
The assessment tools followed for this criterion will be professor's notes and a signature sheet which will be passed in each practice session.
3. Mastery of the knowledge of the subject.
The assessment tools used are 2 tests on theoretical issues and simple calculations, related with competencies included in modules 9 and 10.
4. Ability to solve practical cases and questions related to the course.
The assessment tools used are a practical exercise booklet to be individually solved, the practical exercises solved in the practice sessions as well as an exam of practical exercises, all of them related with competencies included in modules 9 and 10.
5. Assessment of computer session practice.

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The assessment tool is a report that the students must submit with the resolution of a particular practical exercise using the computer program previously used in the practice sessions. It is related with the competencies included in module 11.

The students will be graded to reach the final mark in the following way:

- attendance and participation in classes of basic knowledge (EB)10%,
- attendance and participation in classes practical and developmental knowledge (EPD) together with the report of the practice computer session: 5%,
- first virtual test 15%,
- second virtual test 5%,
- booklet 15% and
- the final exam of practical exercises adds up remaining 50% of the final mark

Recommendations for the assessment and final considerations:

1) Theoretical tests.

There are two theoretical tests and they consist of a series of shorts reasoning questions related to the subject, in which there are different types of question such as multi choice, true/false, open questions, complete sentences, etc. The first one is in-person and it is focused on the theoretical content of topics 1 and 2. The students will be organised in groups and the test will be held in a computer classroom. The second one is focused on the theoretical content of topics 3, 4 and 5. It is taken through the virtual space of the course, so that students have a limited time to solve with a finite number of attempts. It is necessary to achieve more than 5 points out of ten in each one.

2) Practical exercises booklet.

Upon completion of the EB classes, a practical exercises booklet will be given to the students. Students will have time to solve it at home. It is recommended to solve the exercises individually. After this time, there will be a deadline for the submission of the booklet and its correction.

3) Practical exercises exam.

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It consists of a test with 3 practical exercises written. To add the other points that make up the final course mark, the students have to achieve at least 5 points out of ten on average in this test. The students who do not achieve this score will have to attend the final retake exam. Previously, they will have obtained information on which of the 3 practical exercises has been failed and therefore, which of the 3 practical exercises have or has to be solved in the retake exam.

4) Recommendations to face the retake: Final retake test:

- The students with no booklet submitted. They have to submit it the day of the final retake exam.
- Students with non-submitted practice reports. They have to submit it the day of the final retake exam.
- Students with practical exercises test failed, or any of its parts. They have to take a new similar written test, having to pass the failed exercises.
- Students who have failed or not taken any theoretical test. They have to take a short written test with theoretical questions.

5) Students with troubles with the level of English:

It is possible that there might be students whose English is not enough to get the message across in an exam, problem solving activity or class exercise. In that case, some help would be allowed, for instance looking up in the dictionary in class and exam events.

A warning given to the students:

Given that the students know that English is compulsory, everything they write in exam has been studied beforehand. The students should also prepare to understand and be understood in English. Problems of understanding may be penalised and thus they should pay attention to this.

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6. BIBLIOGRAPHY

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