

Teaching guide

IDENTIFICATION DETAILS

Degree:	Diploma in Entrepreneurship, Innovation and Technology Transfer (UFV Awarded title associated with Biomedical Engineering)		
Field of Knowledge:	Science		
Faculty/School:	Experimental Science		
Course:	Information and Management in Biomedical Engineering		
Type:	Compulsory Internal	ECTS credits:	4
Year:	2	Code:	24312
Teaching period:	Fourth semester		
Teaching type:	Classroom-based		
Language:	English		
Total number of student study hours:	100		

Teaching staff	E-mail
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SUBJECT DESCRIPTION

Machines and devices targeting biomedical applications can be developed in universities and public research centers, but also in companies looking to generate a business base on them. All technical developments, at some point, look to add value to the society. But not all of them could be interesting from a business point of view. To learn what are the drivers of a business; what type of relevant information we need to evaluate the potential of a project; where and how can we obtain that information and how do we use it in a business organization is essential to manage a company in a successful way.

An engineer needs to understand the business environment, as most of them will develop their professional careers in companies. In a world full of information, the challenge is to learn how to choose the one that is needed to take proper decisions.

Companies are created to produce profit to the investors, but also to generate value to the society, create employment, and offer solutions to needs, all of it with an ethic approach. University students need to understand this global vision to be able to integrate their technical knowledge, in the business environment, aiming to promote the growth of the economy, so the wellness of the society.

GOAL

- 1.To understand what a business organization is: Companies as a society value generator.
- 2.To identify what are the key areas we need to analyze, from a business point of view, to develop a technical project.
- 3.To identify and manage different sources of information we need to support business decision.
- 4.To understand, as a user, companies' financial information.
- 5.To learn how to use information (patents, markets, competitors, financial etc) as business managers.
- 6.To understand what a business plan is and how do we build one.

PRIOR KNOWLEDGE

At least B2 or equivalent English certificate.

COURSE SYLLABUS

1. Unit 1: What is a company
 - a. What are the main goals: the why
 - b. Legal concepts
 - c. Technical feasibility vs business one
 - c. Long term sustainability to create value
2. Unit 2: What do we need to analyze in a project from a business point of view
 - a. The need
 - b. Market: size, competitors. DAFO/Porter/5'c market analysis models
 - c. Intellectual property: Freedom to operate, patentability, other alternatives for IP protection
 - d. Feasibility: cost vs potential price
 - e. Regulatory issues
3. Unit 3: Financial information of a company

- a. Definition
- b. P&L, Balance sheet, cashflow and notes:
 - i. Structure
 - ii. What information provides each statement
 - iii. Interpretation and use
- 4. Business plan
 - a. Definition
 - b. Revenues and Expenses: how to project them
 - c. How to present it

EDUCATION ACTIVITIES

Classes will be taught using PowerPoint presentation to explain the main concepts of the units. Practical cases will be provided as homework to discuss in class their approaches and solutions. YouTube and TED videos from international key people talking about the different contents of the course will be used as a starting point for discussions. Readings of books related to the subject will be recommended. Teamwork to generate an open discussion about a topic. Individual Project development at the end of the course.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
40 hours	60 hours
Unit 1 10h Unit 2 12h Unit 3 12h Unit 4 6h	Unit 1 10h Unit 2 15h Unit 3 15h Unit 4 20h

SKILLS

Develop and promote business mentality to generate value to society

Develop leadership attitudes to integrate technical and business approaches

Develop the business and financial mentality as an additional skill to be integrated with the engineering technical ones.

Manage and identify relevant information to evaluate the business feasibility of a technical project.

LEARNING RESULTS

To understand the company concept in our environment and its key drivers for success

To identify the relevant information to be analyzed to create a company based in a R&D project

Understand market and financial information as a source to evaluate a business and its feasibility

To understand what is a business plan of a company and how to structure it

To learn how to manage business crisis and evaluate failure reasons to generate solutions

LEARNING APPRAISAL SYSTEM

Assignments with uncertain authorship will not be assessed. This considers content copied from other colleagues, websites... wrong bibliographic references or breaking copyright. Plagiarism behaviors or any illegitimate mean will be sanctioned according to the University Regulations

Ordinary evaluation System:

Priority system applicable to all students. It is based on continuous evaluation.

At the end of Unit 1 and 2 presencial exam: - Minimum mark to pass it. 50/100

At the end of Unit 3 and 4 presencial exam: Minimum mark to pass it. 50/100

At the end of the course: group project development (groups of no more than 3 people) Develop an Innovative

technical project business plan focuses in the business information analysis (not accounting approach) .
Class attendance is mandatory.

Final mark:

50% average of units' partial exams. If some of them are failed, they will be repeated in a final exam (only the unit failed). Final exam is not mandatory for students with more than 50% in partial ones. Final exam could be used to increase the average (voluntary).

15% participation in class discussions and practical cases.

35% Project evaluation

The average for the final mark requires a minimum of 50% in the final exam (students with some units failed)

The project is mandatory, and students will not pass the subject without it and with a mark below 40/100.

Students failing the subject but with a mark above 40/100 in the project, will keep the project mark to the second call.

Second call will require:

1. Global exam with all the contents.

a. Students with the project approved: Mark required in the exam to pass it 50/100

b. Students with the project failed: Mark required in the exam to pass it 75/100

Final mark average (with the project made above 40/100):

50% final exam (second call)

15% participation in class discussions and practical cases.

35% Individual project evaluation

Final mark average (with the project made below 40/100 or not delivered):

85% final exam

15% participation in class discussions and practical cases.

Alternative evaluation system

Students in two or successive enrollments must contact the teacher to request to benefit from this system.

This system is intended for students being enrolled twice or more in the same subject who do not take advantage of the ordinary evaluation system because they cannot attend classes on regular basis.

At the end of units 1 and 2: presencial exam: - Minimum mark to pass it. 50/100

At the end of unites 3 and 4: presencial exam. Minimum mark to pass it. 50/100

At the end of the course: individual project development. Develop an Innovative technical project business plan focuses in the business information analysis (not accounting approach) .

Final mark:

40% average of units' partial exams. If some of them are failed, they will be repeated in a final exam (only the one failed). Final exam is not mandatory for students with more than 50% in partial ones. Final exam could be used to increase the average (voluntary).

60% Individual project evaluation

The individual project is mandatory, and students will not pass the subject without it and with a mark below 50/100.

Class attendance will not be mandatory.

Students failing the subject but with a mark above 40/100 in the project, will keep the project mark to the second call.

Second call will require:

1. Global exam with all the contents.

a. Students with the project approved: Mark required to pass the exam 50/100

b. Students with the project failed or not presented: Mark required to pass the exam 75/100

Final mark average:

1. People with the project mark above 40/100:

40% final exam

60% Individual project evaluation

2. People with the project failed or not presented
100% final exam

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Linda Pinson Anatomy of a Business Plan 7th edition OM..IM

Pilar de la Huerta Emprender en biotecnología: del laboratorio al mercado de capitales LID

Eduard F.McQuarrie The Market Research Toolbox: A Concise Guide for Beginners 2015

Joseph F. Hair Jr, Dana E.Harrison, David J. Ortinau ISE Essentials of Marketing Research 2020

Additional

Pablo Fernandez Valuation Methods and shareholders value creation ASIN : B01FEKZ6WW