

# Teaching guide

## IDENTIFICATION DETAILS

Degree:	Diploma in entrepreneurship and Innovation Projects Management (UFV-Awarded title associated to Biomedicine)
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Faculty/School:	Experimental Science
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Course:	FOUNDING TECHNOLOGY-BASED COMPANIES (I)
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Type:	Compulsory Internal	ECTS credits:	4
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Year:	2	Code:	21213
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Teaching period:	Fourth semester
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Teaching type:	Classroom-based
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Language:	English
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Total number of student study hours:	100
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Teaching staff	E-mail
Florence d'Emmerez de Charmoy	florence.demmerez@ufv.es

## SUBJECT DESCRIPTION

This course provides students with enough knowledge of what is required on a technical standpoint, for a company foundation. Nowadays, a successful company has to be digital, and if a company has to be born, it should be born digital. Being digital means having the technology as the ecosystem where people, processes and customers are being managed.

We will be analyzing the major technological megatrends that are emerging or are in the implementation path. Students will learn new Information Technology concepts and will understand how they impact company results and customer behaviors.

The practical methods will enable students to understand and effectively use the tools and techniques associated to the main methodologies in opportunity discovery, creating the capabilities to define effective problem and challenge

definitions that characterize a specific business opportunity. The students will also develop a practical knowledge of creating innovation teams and how-to assess the innovation capabilities of an organization.

## GOAL

The final goals & objectives are:

Acquire a basic set of personal and team-based innovation skills, for further use during student's future scientific and entrepreneurial education.

Learn up-to-date research trends on Digital/technological Transformation topics in our global scientific and business community.

Students will learn how high performance teams work.

They will know what is the digital transformation and why so many companies are having problems to succeed in making those changes required by the new economic and social environment.

They will learn more on cultural innovation and why the culture and people are the most important factors to have success in a company transformation.

The student will understand the phases that must be addressed in an innovation project and will see the importance of searching in specialized sources to be at the forefront of the innovations that occur in their sector or other sectors of interest.

They will know what Design thinking and Lean Start up methodologies are and why it is so popular in the professional world and companies.

They will get to know what is Agility in a company and they will learn SCRUM, an agile project development methodology extremely popular in companies now a days.

The objective of this course is to initiate students in innovation, technologies and entrepreneurship so that they can carry out their projects more effectively and arouse their interest towards innovation and entrepreneurship in their area of study.

Acquire basic knowledge on a minimum set of technological trends that needs to be taken into account for a business to grow.

Provide students with a wide understanding of the disruptive technologies and the impact in the medical/health area.

Understand the basic of emerging technologies such as blockchain, Artificial intelligence, 3 and 4D printing, robotics, AR/VR....

Know where and how each emerging technology is currently used in their medical field. Students will get a good grasp of usage and application of those technologies in the medical fields. Understand the future of their profession and the impact that the technologies will bring to them in their professional environment.

Learn about the importance of reading and consulting specialized sources to be informed of the ultimate innovations and novelties in their field, as a source of ideas, business opportunities and general culture.

They will acquire practical knowledge of making a BMC, Empathy Map, Value Proposition Canvas and adapt it to their specific projects.

They will be aware and get to know many of all the start up in the entrepreneurship ecosystem and which companies are at the edge of technological advancements in the medical fields.

They will understand how to work on their weaknesses of being Millennials versus the soft skills necessary to become an entrepreneur.

They will learn how to structure an elevator pitch of their project.

## PRIOR KNOWLEDGE

- Understanding of key innovation methodologies: Creative Problem Solving, Design Thinking and Lean Startup.
- A high proficiency level in English is recommended, as well as a clear teamwork attitude from all enrolled students.
- Fluent use of Microsoft Office applications (Word, Excel, PPT) is also recommended.

## COURSE SYLLABUS

### 1. Digital Teams and innovation methods :

- Innovation and entrepreneurship definition
- Innovation culture (ICI)
- High performing teams
- Lean start up
- Design thinking
- Corporate agility and Scrum agile methodology

### 2. Technologies and technological megatrends: (\*)

- Digital world
- Gartner Hype Cycle
- 3D-4D Printing
- IoT
- Artificial Intelligence
- Robotics
- Blockchain
- Virtual Reality/Augmented reality

### 3. Innovation Opportunity and entrepreneurship:

- How to face an innovation project
- Problems and solutions when doing entrepreneurship projects in healthcare
- Basic introduction to important EXCEL functionalities (graphs, formulas, formatting)
- Innovation tools: BMC, Empathy map, value proposition, NabCh sheet
- The concept of the effectuation in entrepreneurship
- Elevator pitch 5-7 minutes of their project and business idea (oral exam)

***(\*) This module includes a small part of theory given in class (what is the technology, what is this technology used for in the healthcare sector), and an autonomous work for which the student will have to listen some videos and/or read some articles to see some examples of application of each technology in the healthcare and medical environment.***

## EDUCATION ACTIVITIES

Students will have full access to CANVAS to all study material, including ppt's, articles, web links, videos to be used in this course.

The course methodology will follow a majorly theoretical focus based upon general lectures on basic concepts, methods and technologies to support student's progressive understanding of entrepreneurship issues and innovation concepts. At the end of the course after the theoretical part students will practice their innovation tools with their business idea and respective project. This practical part will be team based and students will have to

work on their tools, project and pitch by group.

At the end of the course, each group generates a business opportunity that they will formalized and explain in the elevator pitch.

The teacher will use innovative teaching methodologies like project based learning , flipped classrooms, workshops, co-evaluation and self evaluation of the project. The student must learn in an autonomous way and be part of their training . Therefore, we remind the student that this course involves an autonomous work of 60 hours during which at home the student will be in charge of reading the materials, listening to the videos lifted by the teacher in their CANVAS. This autonomous work as mentioned, can be doing exercise, reading complementary materials, working with their project with their teammates.

## DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
40 hours	60 hours
Class lectures 30h Group exercises 9h Group presentations 1h  40h	Home material study and complementary proposed home reading articles. 20h Homework developing class proposed exercises to be presented and formally approved in class. 40h 60h

## SKILLS

- Understand and proactively manage personal and team interactions.
- Use state of the art methods & tools to generate innovation in a person-oriented manner in any organization.
- Ideate and communicate innovative, scalable and profit-driven innovation projects.

## SPECIFIC LEARNING RESULTS

- Understands the impact of technology in the healthcare sector.
- Learn innovation tools and methodologies such as Design Thinking and Lean Start up
- Assess the right elements that built a new business opportunity and understand all the necessary steps to face an innovation project.
- Understands the personal, team and organizational aspects of the innovation capabilities

- Learning how to present their business ideas with an elevator pitch

## LEARNING APPRAISAL SYSTEM

### ORDINARY CALL

- 1.- Class attendance & participation **(10%)**. Individual evaluation based upon student's presence and collaborative team behaviour. Minimum grade to approve this task is 5
- 2.- Multiple answers Test at the end of the course related to all the theory acquired. **(50%)**.
- 3.- A final oral presentation of an elevator pitch, presenting their business opportunity and project during 5 to 7 minutes **(40%)**. Minimum grade to approve this task is 5.

### EXTRAORDINARY CALL

- 1.- Class attendance & participation **(10%)**. Student will have the same mark as in ordinary call. However, if a student does not achieve the minimum of 5 out of 10, he will have a complementary task of watching theory videos prepared by the teacher and lift in the virtual class a summary of the videos visualized.
- 2.- If the student has not reached the minimum grade in the ordinary call, he will have to complete another theory test. **(50%)**
- 3.- If a student is not present on the final exam presenting his project with his group, he/she will have to record a 3 to 5 minutes video explaining and presenting the part that he has been assigned to complete in his group project and lift the video in the virtual class. **(40%)**

Plagiarism behaviors, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with the provisions of the Evaluation Regulations and the Coexistence Regulations of the university.

## BIBLIOGRAPHY AND OTHER RESOURCES

### Basic

George Westerman, Didier Bonnet, Andrew McAfee Turning Technology into Business Transformation Harvard Business Review Press, 2014.

The book is based on a multi-year study of over 400 industry leaders in all sectors including Asian Paints, Burberry, and Nike. It's packed full of actionable information and explains step-by-step how business leaders can adapt to the digital age.

Richard Dobbs, James Manyika, Jonathan Woetzel. No Ordinary Disruption: The Four Global Forces Breaking All the Trends Public Affairs 2016.

No Ordinary Disruption comes from authors at the McKinsey Global Institute. It goes beyond all the disruption hype and takes a deep look at what causes some businesses to crumble in the face of digital innovation while others flourish. The book offers a digital transformation roadmap for both business and government leaders to follow and provides a unique look into what digital disruption might look like in another 10 or 20 years.

### Additional

Reading material Various blog & articles

Business Model Innovation de Patrick Stähler <http://blog.business-modelinnovation.com>

The Business Model Database de Anders Sundelin <http://tbmdb.blogspot.com>

Understanding Business Model <http://bmimatters.com/>

Board of Innovation <http://www.boardofinnovation.com/>

David Lerner <http://www.davidblerner.com/>

Sean Ellis <http://www.startup-marketing.com/>

Complementary videos various videos to complement training

<http://digitaltransformation.frost.com/>

<https://www.youtube.com/watch?v=S3iz3yl8Wfc>

<https://www.youtube.com/watch?v=508CR1fd8ws>

<https://www.youtube.com/watch?v=XkO1EPWuV1I>

<https://www.youtube.com/watch?v=62WWcs9EY1w>