

Teaching guide

IDENTIFICATION DETAILS

Degree:	Expert 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
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ECTS credits:	4
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Year:	2
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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 born, it should 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 asses 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 team work 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 culture
- High performing teams
- Lean start up
- Design thinking
- Agile development: scrum

2.Technologies and technological megatrends: (*)

- Technological trends in medical health sector
- Gartner Hype Cycle: technological trends in 2019 and 2020
- 3D-4D Printing
- IoT
- Artificial Intelligence
- Robotics
- Blockchain
- Virtual Reality/Augmented reality

- Superb healthcare innovations at CES 2019 and 2020

3. Innovation Opportunity and entrepreneurship:

- Entrepreneurship soft skills versus Millennials behavioural characteristics
- Problems and solutions when doing entrepreneurship projects in healthcare
- BMC, Empathy map and value proposition, NabCh sheet
- Disruption of business model with St Gallen methodology
- Elevator pitch 5-7 minutes of their project and business idea (final exam)

(*) This module includes a small part of theory given in class (what is the technology), and an autonomous work from the student to listen and see the examples of application of each technology in the healthcare and medical environment. Complemented by a few discussion and research participation in the “FORO” in Canvas.

EDUCATION ACTIVITIES

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

The course methodology will follow a practical & interactive approach between students and professor, based upon general lectures (remote class) on basic concepts, methods and technologies to support student’s progressive understanding of entrepreneurship issues and innovation concepts and associated processes.

For each major course specific domain, practical exercises will be introduced throughout the course in order to ensure individual student’s skills acquisition. Teamwork activities will be used to ensure that, at course’s end, each group generates a feasible and scalable business opportunity to deploy a new business out of elaborated innovative ideas, generated by students themselves.

The teacher will use innovative teaching methodologies like learning via projects, flipped classrooms, workshops, collaborative discussions and debates “foros” in their Canvas, co-evaluation. The student has to 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 as autonomous tasks. This autonomous work as mentioned, can be doing exercise, reading complementary materials, working with their project with team mates, participating in the online discussions etc.

The training activities, as well as the distribution of working times, can be modified and adapted depending on the different scenarios established and following the indications of the health authorities.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
40 hours	60 hours
Class lectures 20h Group exercises 19h 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.

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 (30%). Individual evaluation based upon student's presence and collaborative team behaviour. Minimum grade to approve this task is 4
- 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 (20%). Minimum grade to approve this task is 4.

The evaluation system of the exams will be face-to-face, as long as the health situation allows it. In the case that the sanitary situation does not allow the face-to-face exams, both the multiple answer exam and the final oral presentation will be made in remote not supposing any change in the percentage and weight of the exams, neither in the evaluation criteria.

EXTRAORDINARY CALL

- This course does not contemplate an extraordinary call. Students will only have to pass the ordinary call.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Leading Digital: Turning Technology into Business Transformation. By: George Westerman, Didier Bonnet, Andrew McAfee. 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.

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

More reading materials:

- <https://www.gartner.com/smarterwithgartner/gartner-top-10-strategic-technology-trends-for-2018/>
- <https://www.gartner.com/smarterwithgartner/top-10-trends-impacting-infrastructure-and-operations-for-2019/>
- <https://www.gartner.com/smarterwithgartner/top-10-personal-technologies-to-support-digital-business/>
- <https://www.gartner.com/smarterwithgartner/fight-digital-transformation-fatigue/>
- <https://www.gartner.com/smarterwithgartner/5-trends-emerge-in-gartner-hype-cycle-for-emerging-technologies-2018/>
- https://www.gartner.com/en/newsroom/press-releases/2018-10-15-gartner-identifies-the-top-10-strategic-technology-trends-for-2019?_lrs=e51a0c0d-b891-499a-b0fe-38bb8447845c&utm_campaign=1610-GDC-SOC-MUL-OTH-MUL-Elevate&utm_medium=social&utm_source=linkedin_elevate
- <https://www.forbes.com/sites/>

<https://www.forbes.com/sites/reenitadas/2018/11/13/top-8-healthcare-predictions-for-2019/amp/>
<https://en.digital/podcast/81-inteligencia-artificial-negocios>
<https://www.weforum.org/agenda/2019/01/ai-for-human-development/>
<https://www.linkedin.com/pulse/50-emerging-technology-themes-watch-out-2019-rahim-hirji>
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/>

Some Videos:

-<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>