

[MHJ205] STRATEGY AND MANAGEMENT OF TECHNOLOGICAL INNOVATION

GENERAL INFORMATION

| | | | | |
|------------------|---|-------------------|----------------|--|
| Studies | UNIVERSITY MASTER IN INDUSTRIAL ENGINEERING | | Subject | ? |
| Semester | 1 | Course | 2 | Mention / Field of specialisation |
| Character | COMPULSORY | | | |
| Plan | 2022 | Modality | Face-to-face | Language CASTELLANO |
| Credits | 3 | Hours/week | 0.56 | Total hours 10 class hours + 65 non-class hours = 75 total hours |

2030 AGENDA GOALS



PROFESSORS

IBARRA ZULUAGA, DORLETA

REQUIRED PREVIOUS KNOWLEDGE

| Subjects | Knowledge |
|--|----------------------------------|
| (No specific previous subjects required) | (No previous knowledge required) |

LEARNING RESULTS

| LEARNING RESULTS | KC | SK | AB | ECTS |
|--|----|----|----|------|
| MHRA10 - To demonstrate strategy and planning capabilities applied to different organizational structures | | x | | 0,48 |
| MHRA16 - To demonstrate capacity for the management of technological Research, Development and Innovation | | x | | 1,76 |
| MHRA27 - To demonstrate the ability to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social, health and safety, environmental, economic and industrial implications and responsibilities | | x | | 0,08 |
| MHRA28 - To communicate your conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way | | x | | 0,08 |
| MHRA30 - To work with people, involving and directing them in a dynamic aimed at a common objective that includes reflection on their ethical and social responsibility, with a global vision of the work to be carried out and the characteristics that it requires (quality, deadlines,...), assuming responsibility for the decisions made | | x | | 0,04 |
| MHR125 - Having and understanding knowledge providing a basis or opportunity to be original in developing and/or applying ideas, often in a research context. | | x | | 0,4 |
| MHR126 - To apply the knowledge acquired and your problem-solving skills in new, little-known or changing environments within broader (or multidisciplinary) contexts related to your area of study | | x | | 0,08 |
| MHR129 - To possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous | | x | | 0,08 |

Total: 3

KC: Knowledge or Content / SK: Skills / AB: Abilities

ENAE LEARNING RESULTS

| ENAE LEARNING RESULTS | ECTS |
|--|------|
| ENA124 - Knowledge and comprehension: Deep knowledge and comprehension of the engineering disciplines of their speciality, at the level necessary to acquire the rest of the competencies of the degree. | 0,47 |
| ENA127 - Analysis in engineering: Ability to analyse new and complex engineering products, processes and systems within a broader multidisciplinary context; select and apply the most appropriate analysis, calculation and experimental methods already established, as well as innovative methods; and critically interpret the results of such analyses. | 0,4 |
| ENA129 - Analysis in engineering: Ability to identify, formulate and solve engineering problems defined incompletely, and/or with conflicts, which accept different valid solutions and require considering knowledge beyond those of their discipline and take into account the social, health and security, environmental, economic and industrial implications; to select and apply the most appropriate methods of analysis, calculation and experimental, as well as the most innovative methods for solving problems. | 0,4 |
| ENA136 - Research and innovation: High-level capacity and ability to project and carry out experimental investigations, interpret data with criteria, and draw conclusions. | 0,4 |
| ENA137 - Research and innovation: Ability to investigate the application of the most advanced technologies in their speciality. | 0,46 |
| ENA138 - Practical application of engineering: Complete knowledge of the applicable techniques and methods of analysis, project and research, as well as their limitations. | 0,4 |
| ENA145 - Preparation of judgements: Ability to manage complex technical or professional activities or projects that require new approach approaches, assuming responsibility for the decisions made. | 0,46 |

Total: 3

SECONDARY LEARNING RESULTS

RMH149 [I] Es capaz de identificar las necesidades de vigilancia, e implantar un sistema acorde con las necesidades estratégicas de la empresa
LEARNING ACTIVITIES
CH
NCH
TH

Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

6 h.

6 h.

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning

5 h.

5 h.

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

1 h.

1 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

3 h.

3 h.

Reading and personal and/or shared analysis of relevant and current publications (books, articles, catalogues, etc.) related to the speciality

8 h.

8 h.

EVALUATION SYSTEM
W
MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

70%

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Individual written and/or oral tests or individual coding/programming tests

30%

Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 4 h.

NCH - Non-class hours: 19 h.

TH - Total hours: 23 h.

RMH148 [I] Conoce los principios fundamentales de la estrategia y gestión de la innovación
LEARNING ACTIVITIES
CH
NCH
TH

Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

8 h.

8 h.

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning

8 h.

8 h.

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

1 h.

1 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

2 h.

2 h.

Seminars, debates and/or workshops to deepen and/or share experiences.

1 h.

1 h.

Reading and personal and/or shared analysis of relevant and current publications (books, articles, catalogues, etc.) related to the speciality

8 h.

8 h.

EVALUATION SYSTEM
W
MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

70%

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Individual written and/or oral tests or individual coding/programming tests

30%

Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 4 h.

NCH - Non-class hours: 24 h.

TH - Total hours: 28 h.

RMH150 [I] Es capaz de definir un modelo de negocio sostenible y estructurado que propicie el desarrollo de una nueva actividad de futuro susceptible de ser puesta en marcha
LEARNING ACTIVITIES
CH
NCH
TH

| | | |
|---|----------|--|
| Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams | 7 h. | 7 h. |
| Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning | 7 h. | 7 h. |
| Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects | 2 h. | 2 h. |
| Reading and personal and/or shared analysis of relevant and current publications (books, articles, catalogues, etc.) related to the speciality | 8 h. | 8 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISMS |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 80% | Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems |
| Individual written and/or oral tests or individual coding/programming tests | 20% | Individual written and/or oral tests or individual coding/programming tests |
| CH - Class hours: 2 h. NCH - Non-class hours: 22 h. TH - Total hours: 24 h. | | |

CONTENTS

1. STRATEGY Basic concepts about strategy Levels of strategy Corporate strategy Competitive strategy Strategic objectives, mission, vision, values 2. INNOVATION MANAGEMENT What is innovation? What is R&D? Types of innovation Innovation management Innovation strategy Organizational culture Innovation process SURVEILLANCE AND INTELLIGENCE Basic concepts of surveillance The surveillance process 4. INDUSTRIAL AND INTELLECTUAL PROPERTY Industrial and intellectual property basics Industrial and intellectual property management 5. SUSTAINABLE BUSINESS MODELS Definition and conceptualization of a business model Circular and sustainable business models

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LEARNING RESOURCES AND BIBLIOGRAPHY

| Learning resources | Bibliography |
|-----------------------------|--|
| Moodle Platform | Guerras Martín, L. A., & Navas López, J. E. (2008). Casos de dirección estratégica de la empresa. Navarra, Thomson-Civitas. |
| Topic related web quires | Porter, M. E. (1996). What is strategy?. |
| Video projections | Bowman, C. & Faulkner, D. O., (1996). Competitive and Corporate Strategy. 1st ed. s.l.: Irwin Professional Publishing. |
| Slides of the subject | Tidd, J., & Bessant, J. R. (2020). Managing innovation: integrating technological, market and organizational change. John Wiley & Sons. |
| Technical articles | Ibarra, D. (2020). Business model innovation in small and medium-sized enterprises: an exploration of key drivers and performance implications (Doctoral dissertation, Mondragon Unibertsitatea). |
| Computer practical training | Ibarra, D. (2020). Business model innovation in small and medium-sized enterprises: an exploration of key drivers and performance implications (Doctoral dissertation, Mondragon Unibertsitatea). |
| | Manual, O. (2018). Guidelines for collecting, reporting and using data on innovation. The measurement of Scientific, Technological and Innovation Activities. 4th Edition. 255p.[Consultado 29 agosto 2020] Disponible en: https://doi.org/10.1787/9789264304604-en . |
| | OCDE. Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development. |
| | Nagji, B., & Tuff, G. (2012). Managing your innovation portfolio. Harvard Business Review, 90(5), 66-74. |

Katz, B. R., Du Preez, N. D., & Schutte, C. S. L. (2010, October). Definition and role of an innovation strategy. In SAII conference proceedings (pp. 60-74).

Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H. (2018). The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation. *Sustainable Production and Consumption*, 15, 145-162.

Pieroni, M. P., McAloone, T. C., & Pigosso, D. C. (2020). From theory to practice: systematising and testing business model archetypes for circular economy. *Resources, conservation and recycling*, 162, 105029.