Universitat Autònoma de Barcelona

2020/2021

Scientific and Technical Project Management

Code: 103278
ECTS Credits: 6

Degree	Type	Year	Semester
2501922 Nanoscience and Nanotechnology	OT	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Marta Prim Sabria
Ramon Grau Sala
Ian Blanes Garcia

Prerequisites

This subject is taught at the School of Engineering: Project Management.

Although there are no prerequisites, it is insdispensable to have knowledge of:

- Natural language

- Elementary mathematics

Objectives and Contextualisation

- Know and practice:
  Specific techniques (Theory / Simulations in class): Planning, Estimation, HR Management, Communication
  Management Methods
  Tools (Laboratory practices)
- To be able to decide which methods and techniques to use in each situation.
- On the other hand, in the part of practices, it is intended that part of the concepts presented are related to the development of the Final Degree Project.

Competences

- Adapt to new situations.

- Apply the concepts, principles, theories and fundamental facts of nanoscience and nanotechnology to solve problems of a quantitative or qualitative nature in the field of nanoscience and nanotechnology.
- Communicate orally and in writing in ones own language.
- Demonstrate knowledge of legislation on intellectual property in the field of knowledge and application of nanoscience and nanotechnology.
- Demonstrate knowledge of the concepts, principles, theories and fundamental facts related with nanoscience and nanotechnology.
- Handle the standard instruments and materials of physical, chemical and biological testing laboratories for the study and analysis of phenomena on a nanoscale.
- Lead and coordinate work groups.
- Manage the organisation and planning of tasks.
- Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
- Propose creative ideas and solutions.
- Recognise the terms used in the fields of physics, chemistry, biology, nanoscience and nanotechnology in the English language and use English effectively in writing and orally in all areas of work.
- Resolve problems and make decisions.
- Show initiative and an enterprising spirit.
- Show motivation for quality.
- Show sensitivity for environmental issues.
- Work correctly with the formulas, chemical equations and magnitudes used in chemistry.

Learning Outcomes

1. Adapt to new situations.
2. Analyse a project report.
3. Apply basic elements of economics and human resource management, organisation and planning of projects.
4. Communicate orally and in writing in ones own language.
5. Define and use the basic concepts related with project management.
6. Describe the main methods and tools of projects management.
7. Describe the processes of cost analysis and risk management in the preparation of projects.
8. Draft development, innovation or research projects in English.
9. Identify and distinguish the legal standards in the field of nanoscience and nanotechnology and their application to project management in a company.
10. Identify the different development phases of a project in the field of nanotechnology and nanoscience.
11. Identify the structure and contents of project reports.
12. Lead and coordinate work groups.
13. Manage the organisation and planning of tasks.
14. Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
15. Plan the organisational and economic aspects of a project
16. Plan, draft and present a project feasibility study.
17. Present reports in English.
18. Propose creative ideas and solutions.
19. Resolve problems and make decisions.
20. Show initiative and an enterprising spirit.
21. Show motivation for quality.
22. Show sensitivity for environmental issues.
23. Use computer applications for project management.
24. Work correctly with the formulas, chemical equations and magnitudes used in chemistry.

Content

Theory:

- Topic 1. Introduction Project Management

- Topic 2. Selection of Projects
- Topic 3. Project Life Cycle
- Topic 4. Time Management
- Topic 5. Cost Management and Sustainability
- Topic 6. Management of Communications
- Topic 7. Project Scope Management
- Topic 8. Management of Integration
- Topic 9. Risk management
- Topic 10. Management of Human and Gender Resources
- Topic 11. Quality Management
- Topic 12. The figure of the Project Manager

Methodology

Format Course

- Lessons: Theoretical topics.
  Self-preparation
  Self-control
  Consultations / Debates
- Techniques: Skills development.
  Introduction
  Review of concepts
  Simulation
  Role
- Practices:
  Presentation of management tools and project planning.
  Presentations in class.
  Team work and exercises to work autonomously and to solve and discuss in the laboratory sessions.

Purpose of the activities

- Theory: Complete overview.
- Techniques: Practice the main necessary techniques and improve skills.
- Practices:
  Master management tools and project planning.
  Know and practice the main aspects of the management of a project.
  Facilitate the tasks that students should perform when they develop their Final Degree Project.

NOTE: The proposed teaching methodology and evaluation may undergo some modification depending on the restrictions on attendance that the health authorities impose.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Practical sessions	26	1.04	2, 4, 13, 11, 12, 14, 19, 24, 23
Theory sessions	24	0.96	1, 3, 4, 5, 6, 7, 13, 12, 14, 18, 19, 24, 23
Type: Supervised			
Preparation of activities	22	0.88	1, 3, 4, 5, 6, 7, 13, 12,

			14, 18, 19, 24, 23
Type: Autonomous			
Study for exams, practical problems, preparation of practices, extension of subjects with the bibliography	76	3.04	1, 3, 4, 5, 6, 7, 13, 12, 14, 18, 19, 24, 23

Assessment

Calculation of the final grade:

- Theory (minimum 5 out of 10), which corresponds to 50% of the final base note. The theory grade will be the weighted average of the parts assessed:

Exams of evaluation of the theoretical knowledge and techniques of the subject (90%):

- 50% - 1th EXAM (October): Project Feasibility Study
- 50% - 2nd EXAM (January, date provided by the school): Implementation and monitoring of the Project
- In case of failing one of the parts with less than 4, or wanting to improve the grade: 100% Exam Repeat (date provided by the school). It will be necessary to perform an examination of both parts, regardless of whether you have failed one or both exams.

  MINIMUM GRADE FROM PARTIALS TO MAKE AVERAGE: 4

Techniques exercises (10%): Exercises proposed in class, which must be delivered on the day indicated by the teacher. The exercises are not compulsory, but they are highly recommended and necessary to qualify for honours. Cannot be repeated.

Conference attendance 0,1 points to add to the final grade of theory for attendance at each of the conferences or activities proposed.

- Practices (minimum 5 out of 10), which corresponds to 50% of the final base note.

- Attendance at all practice sessions is mandatory.
- Closed laboratory practices that require preparation and previous work by students.
- The final note of practices will be the weighted average of the different practices. It is necessary to submit them all in order to pass the subject.
- The practices cannot be repeated.
- If the practices have been approved on a previous course, it will not be necessary to repeat them.

The dates of continuous evaluation and delivery of work will be published on the virtual campus and may be subject to programming changes for reasons of adaptation to possible incidents. Always be informed on the virtual campus about these possible changes since this is the platform for the exchange of information between teachers and students.

For each assessment activity, a place, date and time of revision in which the student can review the activity with the teacher will be indicated. In this context, claims can be made on the activity grade, which will be assessed by the professor responsible for the subject.

If the student does not show up for this revision, this activity will not be reviewed later.

WITH HONORS:

- Option to apply for an honours degree, passing the final grade of the subject with a 9 and having completed and passed all the exercises in the theory classes. In case of a tie between several students, additional work can be requested.

NOTICE:

Without prejudice to other disciplinary measures deemed appropriate, and in accordance with current academic regulations, irregularities committed by a student that may lead to a variation of the qualification will be qualified with a zero (0), and the work is considered as not handed in and will not be counted when evaluating the practical grade. The evaluation activities qualified in this way and by this procedure cannot be repeated. If it is necessary to pass any of these assessment activities to pass the subject, this subject will be failed directly, with no opportunity to repeat it in the same course. These irregularities include, among others:

- The total or partial copy of a practice, report, or any other evaluation activity.
- Let anyone else copy.
- Present a group work not done entirelyby the members ofthe group.
- Present as own, materials made by a third party, even if they are translations or adaptations, and in general works with non-original and exclusive elements of the student.
- Have communication devices (such as mobile phones, smart watches, etc.) accessible during the theoretical assessment tests-individual practices (exams).

In case of failing the subject because any of the assessment activities does not reach the minimum grade required, the numerical score of the file will be the lowest value between 4.5 and the weighted average of the grades. With the exceptions that the qualification of "not evaluable" will be granted to students who do not participate in any of the assessment activities, and that the numerical score of the record will be the lower value between 3.0 and the weighted average of the grades if the student has committed irregularities in an act of evaluation (and therefore the pass for compensation will not be possible).

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exercises of techniques	5%	0	0	3, 5, 6, 7, 13, 10, 15, 16, 19
Practices	50%	0	0	2, 4, 20, 21, 17, 13, 9, 12, 22, 14, 18, 8, 19, 24, 23
Theory exams	45%	2	0.08	1, 2, 3, 4, 5, 20, 21, 6, 7, 13, 11, 10, 12, 22, 14, 15, 16, 18, 19

Bibliography

Reference bibliography:

- Eduardo Caamaño, PMP . Project Management Práctico, Editorial Círculo Rojo, Docencia.

Basic bibliography:

- Guía de los Fundamentos de la Dirección de Proyectos (cuarta edición). (Guía del PMBOK) Norma Nacional Americana ANSI / PMI. 2009.
- Scrum Guide. http://www.scrumguides.org/
- Scrum y XP desde las trincheras. http://www.proyectalis.com/wp-content/uploads/2008/02/scrum-y-xp-desde-las-trincheras.pdf.
- William R. Duncan (Director of Standards), A Guide to the Project Management Body of Knowledge, PMI Standards Committee, Project Management Institute. 1996.
- Robert J. Muller, Productive Objects, an Applied Software Project Management Framework, Morgan Kaufmann Publishers, Inc. 1998.
- Project & Program Risk Management, A guide to managing project risks & opportunities. R. Max Wideman, editor, 1992.
- Philip Metzger & John Boddie, Managing a Programming Project, Prentice Hall, 1996.

Complementary bibliography:

- Software Measurement Guidebook (Revision 1), Software Engineering Laboratory Series. 1995.

- Thomas C. Belanger, The Complete Planning Guide for Microsoft Project, Butterworth-Heinemann, 1996.
- Javier Garcia Cabañes, Técnicas de Investigación Operativa, Paraninfo, 1990.
- Roger S. Pressman, Software Engineering, a Practitioner's Approach, McGRAW-HILL (tercera edició), 1993.
- Roger S. Pressman, Ingeniería del Software, un Enfoque Práctico, McGRAW-HILL (segona edició), 1989.
- Richard Fairley, Ingeniería de Software, McGRAW-HILL.
- Ian Sommerville, Ingeniería de Software, Addison-Wesley.
- Christian W. Dawson, Projects in Computing and Information Systems, a Student's Guide, Addison-Wesley (segona edició), 2009.

Recommended URLs:

- System Planning (and following versions): https://uab-ps-2012-2013.welldoneprojects.com
- Systems Planning (old web): http://www.cvc.uab.es/shared/teach/a25001/c25001.htm
- Project Management Institute: http://www.pmi.org/
- Guide to the Project Management Body of Knowledge: http://marketplace.pmi.org/Pages/ProductDetail.aspx?GMProduct=00101169101
- Productive Objects: http://www.elsevierdirect.com/companion.jsp?ISBN=9781558604377
- Software Measurement Guidebook de la NASA.