VNIVERSITAT DE VALÈNCIA

Course Guide
34265 Degree Final project

COURSE DATA

Data Subject	
Code	34265
Name	Degree Final project
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1105 - Degree in Physics	Faculty of Physics	4	Second term

Subject-matter

Degree	Subject-matter	Character
1105 - Degree in Physics	17 - Degree Final project in Physics	End Labour Studies

Coordination

Name	Department
SILVESTRE MORA, ENRIQUE	280 - Optics and Optometry and Vision Sciences

SUMMARY

The objective of the final degree project (TFG) is the study of a particular subject in physics. The TFG will always be supervised by a tutor, Professor Dr., of the University of Valencia, is based on the content and level of the undergraduate students and the subjects of the grade. It should serve to demonstrate the mastery of skills characteristic of the physics graduate.

The subject matter of the thesis should allow its full implementation by the student in the 150 hours that is assigned to the subject in the curriculum.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

To register for the Final Project the student must have passed 180 ECTS of the degree and be registered for all the subjects that the student lacks to finish the degree. It will only be possible to present the Final Project if the student has passed 210 credits.

OUTCOMES

1105 - Degree in Physics

- Knowledge and understanding of the fundamentals of physics in theoretical and experimental aspects, and the mathematical background needed for its formulation.
- To know how to apply the knowledge acquired to professional activity, to know how to solve problems and develop and defend arguments, relying on this knowledge.
- Ability to collect and interpret relevant data in order to make judgements.
- Have become familiar with most important experimental methods and be able to perform experiments independently, estimate uncertainties, as well as to describe, analyse and critically evaluate experimental data according to the physical models involved. Know how to use basic instrumentation.
- Modelling & Problem solving skills: be able to identify the essentials of a process / situation and to set up a working model of the same; be able to perform the required approximations so as to reduce a problem to an approachable one. Critical thinking to construct physical models.
- Prob. solving and computer skills: be able to perform calculations independently, even when a small PC or a large computer is needed, including the development of software programmes.
- Basic & applied Research: acquire an understanding of the nature and ways of physics research and of how physics research is applicable to many fields other than physics, e.g. engineering; be able to design experimental and/or theoretical procedures for: (i) solving current problems in academic or industrial research; (ii) improving the existing results.
- Foreign Language skills: Have improved command of English (or other foreign languages of interest) through: use of the basic literature, written and oral communication (scientific and technical English), participation in courses, study abroad via exchange programmes, and recognition of credits at foreign universities or research centres.
- Literature Search: be able to search for and use physical and other technical literature, as well as any other sources of information relevant to research work and technical project development.
- Learning ability: be able to enter new fields through independent study, in physics and science and technology in general.

- Communication Skills (written and oral): Being able to communicate information, ideas, problems and solutions through argumentation and reasoning which are characteristic of the scientific activity, using basic concepts and tools of physics.
- Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.
- Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.
- Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.

LEARNING OUTCOMES

The aim of this work, which can be theoretical, experimental and practical, is that students demonstrate maturity in when dealing independently with a specific problem. Unlike Master's Thesis, weekend work is not specialized degree, even if it is a specific topic. What is important is not so much that the student delve into the issue end but situe understand the problem and the same address and with the basic knowledge acquired in the subjects of the degree.

It is a work that takes place in a relatively short time in which the student must demonstrate or is able to independently address a defined topic related to the subjects they have studied in the Degree in Physics, concepts comprising basic revolving around that theme. For this reason, although the subject of the work is specific and necessarily address specific aspects in some detail, the student should be able to integrate it into a broader context that transcends the circumscribed problem. He must be able to relate it to the subjects of the Degree in Physics, showing that he understands the basic concepts on which the work is based, to understand why this problem is of interest in physics etc.. This objective must be explicit in both the report and the presentation. These must be designed so that, in general, are understandable by any student or professor in Physics Degree, regardless of specialty. This point is collected at various points in the measurement of both the tutors and the court.

DESCRIPTION OF CONTENTS

1. Modalities of Final Project

The following modalities are accepted:

a) Work or documentary literature search on a specific topic not developed during undergraduate studies. The orientation of the work may be theoretical, experimental, historiography, teaching, etc.

b) Exploratory work of one or more particular theoretical or experimental problems, preferably related to the subjects of fourth grade.

c) Coordinated work with the external practices of the degree.

WORKLOAD

ACTIVITY	Hours	% To be attended
Graduation project		100
Realización del Trabajo Fin de Grado	88,00	0
Seguimiento i tutorización del Trabajo Fin de Grado	12,00	0
Presentación y defensa del Trabajo Fin de Grado	50,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

Student work: Development of a project or job.

Tutoring for individual supervision.

Writing and presentation of work: writing and submission of a report. Preparation of the public presentation and defense of the work carried out.

EVALUATION

The work will be evaluated by the tutors and a commission or tribunal formed by three Dr. members of the Faculty of Physics. Students will be evaluated from a project developed under the educational content of the degree and the specific skills associated with it. To qualify the students, the ratings given by the tutors and the commission are weighted with a 25% and 75%, respectively.

For the evaluation of work shall be considered the following:

- Memory or written report on the work done will be presented in which at least an introduction and assumptions of work, theoretical or experimental development work results with a critical analysis and conclusions.

- Presentation of the work in which the most important aspects of the work is exhibited briefly, and contains the points made in the previous section. This presentation may have different formats (talk, poster, etc)

- Student responses to questions that the committee may deem appropriate to make in relation to the argument of the work or other general aspects of physics. Both in memory and in its presentation, including the response to questions from the commission or tribunal, they will be assessed: quality of work, scientific argumentation and reasoning based on the concepts and principles of physics, critical thinking about the results, adequate published references, accuracy, consistency and clarity.

The specific aspects of deposit, submission and evaluation of TFG, and the allocation of Distinction, will be established by the Commission's work to grade, according to current legislation and approved by the CAT of Physics, and will be public each academic year in good time.

REFERENCES

Basic

- Reglamento sobre la elaboración de Trabajos de Fin Grado en Física:

  http://www.uv.es/uvweb/fisica/ca/estudis-grau/graus/oferta-graus/treball-fi-grau/treball-fi-grau-fisica-1285867901627.html

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

TEACHING METHODOLOGY:

In case that health situation requires blended teaching, the teaching model approved by the Academic Degree Committee on July 23, 2020 will be adopted.

— Compulsory subjects: 50% student attendance in the classroom, while the rest of students attend the class in streaming broadcast. Two groups will be set with alternate days attendance to the classroom in order to guarantee 50% of teaching hours attendance for all students. Laboratory sessions will have a 100% attendance.

— Optional subjects: 100% attendance in all activities.

If a total reduction in attendance is necessary, classes will be broadcast by synchronous videoconference at their regular schedule, along the period determined by the Health Authority.