

Work placement

Code: 100109
ECTS Credits: 12

Degree	Type	Year	Semester
2500149 Mathematics	OT	4	A

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

Other comments on languages

English speakers are welcome

Teachers

Josep Gascón Pérez
Antonio Lozano Bagen
Isabel Serra Mochales

Prerequisites

In order to be able to enrol in the subject, the student must have passed 180 ECTS.

It is advised to have passed 200 ECTS

Objectives and Contextualisation

This subject wants to get the student closer to the job market, and get orientation towards the development of his/her future career in relation to knowledge and abilities he/she has gone studying the degree in Mathematics.

He/she will be able to see how his abilities and knowledge can be useful in industry as well as in secondary school teaching. Being able to see how his/her technical knowledge and the abilities acquired while studying the degree help to develop a professional career.

The subject should also help the student to decide whether more formation is needed in order to incorporate to the job market.

There are two types of internships:

Teaching internships:

- The academic tutor will be Professor Josep Gascon (gascon@mat.uab.cat)
- Internship will be made in a highschool, that should be agreed with the academic tutor.

Internship in a company or research center:

- Academic tutors can be either Professor Dolors Herbera (dolors@mat.uab.cat) or Professor Toni Lozano (tonilb@mat.uab.cat)

- To do this type of internship, it is very important that you look at the documentation in the Business Internships section of the Virtual Campus Coordination Area. The information contained contains that of the Teaching Guide and, in some cases, is more expanded. You will also find the necessary documentation to be able to do the subject.

Competences

- Actively demonstrate high concern for quality when defending or presenting the conclusions of one's work.
- Apply critical spirit and thoroughness to validate or reject both one's own arguments and those of others.
- Develop critical thinking and reasoning and know how to communicate it effectively, both in one's own languages and in a third language.
- Distinguish, when faced with a problem or situation, what is substantial from what is purely chance or circumstantial.
- Effectively use bibliographies and electronic resources to obtain information.
- Formulate hypotheses and devise strategies to confirm or reject them.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Use computer applications for statistical analysis, numeric and symbolic calculus, graphic display, optimisation or other purposes to experiment with Mathematics and solve problems.
- When faced with real situations of a medium level of complexity, request and analyse relevant data and information, propose and validate models using the adequate mathematical tools in order to draw final conclusions
- Work in teams.

Learning Outcomes

1. Actively demonstrate high concern for quality when defending or presenting the conclusions of one's work.
2. Analyse a situation and identify points for improvement.
3. Analyse the indicators of sustainability of academic and professional activities in the areas of knowledge, integrating social, economic and environmental dimensions.
4. Apply critical spirit and thoroughness to validate or reject both one's own arguments and those of others.
5. Contrast acquired theoretical and practical knowledge.
6. Do work that tests one's critical and reflexive capacity and encourages decision-making.
7. Effectively use bibliographies and electronic resources to obtain information.
8. Identify situations that require changes or improvements.
9. Identify the social, economic and environmental implications of academic and professional activities in the area of your knowledge.
10. Know about professional life.
11. Propose new experience-based methods or alternative solutions.
12. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
13. Work in interdisciplinary teams.
14. Work in teams

Content

Stages and activities to be carried out by the student throughout the internship period:

- 1) Interview with the academic tutor. Preparation of the CV 12 hours
- 2) Planning: search, interviews, organization, 10 hours
- 3) Stay at the internship entity 250 hours(*)(**)
- 4) Preparation of the report, 30 hours
- 5) Preparation of the public exhibition of the work done 6 hours
- 6) Public presentation and attendance at the presentation of classmates 2 hours

(*) Internships in Companies

A first phase of the subject consists of looking for the internship entity. That is why it is necessary to write a curriculum adapted to the technical profile of a student of the degree of mathematics and oriented to the type of practices that are looking for, then it is necessary to send the CV to the entities that offer places of practices or, if it is clear the entity you want to work with, self-apply by presenting the curriculum. Typically, organizations organize staff selections from candidates for internships. This is a very positive experience, in which you can learn first hand how the job market works. The interview with the internship teacher helps guide the student in all of these tasks.

The development of work in the Company includes, among others, the following activities: first contact with the work team in which the student must be integrated; reading and study of computer manuals, economics, of finance, ...; carrying out the proposed tasks, collaboration in the presentations of these tasks a the work team; reporting, ...

The calculation of hours must also include the hours that the student must spend outside the company either to prepare jobs, study manuals, .. etc.

(**) Teaching Internships

The development of work in high school includes, among others, the following activities: first contact with the tutor the work team in which the student must be integrated: organization and schedules. Monitoring, observation and collaboration of the classes with their tutor. Attendance at Department Meetings, Teaching Teams, Faculty, tutoring meeting with parents, ... Preparation of a Teaching Unit and carry it out until its evaluation.

The calculation of hours must also include the hours that the student must spend outside school either to prepare classes, make corrections, .. etc.

Methodology

This subject has somewhat exceptional characteristics, as you can enroll throughout the course, when you are about to sign your internship agreement. Remember that there are two ways to do the subject:

- high school internships
- internships in companies

Then you will have to do the first steps of the subject without being enrolled.

If you want to do an internship in high school, you must contact Professor Josep Gascón directly. The explanations we give below are for students who want to test work experience in a company or research center:

It is very important that you access the section dedicated to Business Internships in the Degree Coordination Area. Among the documentation you will find there is:

- protocol document where you will find the detailed and updated information of the subject
- additional documentation needed to do the course (pre-agreement document, evaluation sheet of the internship tutor ...)
- internship offers

You will also find a power-point presentation on the practices where you will find additional information.

Apart from the teachers' personal e-mail, you can ask your questions by sending a message to the subject's e-mail
empreses@mat.uab.cat

We will now briefly explain the way to do the subject for a more detailed presentation. We refer, once again, to the Protocol Document in the Degree Coordination Area for more details:

1. It helps us that, if you want to do an internship in a company, register at http://mat.uab.cat/empreses/personas_registros/add and enter your complete information (personal data and preferences), this is very useful for us !!
2. Send the CV (with photo), the academic transcript and request the orientation interview to the responsible teachers by writing to the company: empreses@mat.uab.cat. It can also help guide you to one of the internship presentation sessions that take place in the subject. You will see the work that your colleagues have done and how the experience has been, and you will be able to ask questions to clarify doubts.
3. Once the orientation interview has been done. Find and find a collaborating entity to do the internship. In the protocol document, you will find the list of entities where internships have taken place in recent years.
4. When an agreement has been reached with the collaborating entity on when the internships will be carried out and the tasks to be carried out have been oriented, fill in the proposed agreement or pre-agreement together with the collaborating entity . You will find the document as an appendix to the Virtual Campus Degree Coordination Space.
5. Send the pre-agreement to the internship coordinator for approval, digital signature, and send it to the academic management with a copy to the student. Then you can enroll in the subject by going to the Academic Management of Sciences. When you are enrolled you will have access to the Virtual Campus of the subject.
6. When the agreement is made and signed by the dean, you will be called from the Academic Management of Sciences to be picked up and taken to the company to be signed. Of the three copies, one remains the collaborating entity, another the student and another the faculty.

When the agreement is made and signed by the dean, you will be called by the Academic Management of Sciences to be picked up and taken to the company to be signed. Of the three copies, one remains the collaborating entity, another the student and another the faculty. All you have to do is do the internship at the collaborating entity.

In this course, we may find ourselves in some exceptional situation because of the Covid-19 pandemic. The fact that there are third parties involved in the development of the subject means that you have to be especially careful. The institution is currently being asked to sign a document of responsibility to ensure that they will never put the student at risk.

You must tell that throughout the course the internships must either be interrupted or continued in telework. The Faculty of Sciences will provide all the facilities so that, in this case, the student can complete their internship.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
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Type: Directed		
Interview and planificatin	12	0.48
Type: Supervised		
Internship at the choosen entity	250	10
Type: Autonomous		
Presentation Preparation	6	0.24
Public presentation and attending the presentation of other students	1	0.04
Report preparation	30	1.2

Assessment

The steps to evaluate the subject are as follows:

1. At the end of the internship, the collaborating entity must be asked to draw up the accreditation-evaluation report for the internships carried out. You will find the model to be used in the moodle classroom of the subject on the Virtual Campus.
2. Write the internship report
3. Deliver the report to the collaborating entity for approval (e.g. confidentiality of data and processes)
4. Prepare and make the oral presentation of the report (10-15 minutes)

Throughout the course, several sessions of presentations of internship reports will be organized. In the Virtual Campus of the Subject we announce the calendar of these presentations. The student can choose the session they want to make the presentation. The subject has two calls: one in July and another in September.

The criteria used for the evaluation of the subject "Internships in Companies" are the following:

- Valuation report of the tutor appointed by the Company (70%)
- Content of the Internship Report (20%)
- Public presentation of the Report (before a court and colleagues who have done the internship in the same period). 10%

In order to be evaluated positively, two conditions are indispensable:

- (a) That the tutor's evaluation is positive.
- (b) Achieve a positive evaluation of the internship report.

The student will be considered "Not Presented" in case the tutor of the Company does not certify that he / she has
the work has actually been carried out, or in the event that the Internship Report is not submitted or is not submitted to the
oral defense of memory.

If the exceptional health situation we are experiencing with the Covid-19 disease requires it, internship presentations will be made remotely by video conference.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Entity's tutor evaluation	70%	0.5	0.02	3, 2, 4, 5, 10, 1, 9, 8, 11, 12, 6, 14, 13, 7
Public Presentation	10%	0.25	0.01	2, 4, 5, 10, 1, 8, 11, 12, 7
Report on the internship	20%	0.25	0.01	3, 2, 5, 10, 1, 9, 8, 12, 6, 7

Bibliography

The bibliography may vary depending on the type of work and, most likely, the company will provide it. It is good to have on hand the bibliography that has been used throughout the studies of the Degree in Mathematics.

Software

The subject does not have any specific software, but it is almost certain that where you do the internship you will
To fill out the forms you will need to use Word or Libre Office, and to make