Syllabus

Subject

Subject / Group	22453 - Bases of Agrarian Research / 8
Degree	Degree in Food and Agriculture Engineering and the Rural Environment - Second year
Credits	6
Period	First semester
Language of instruction	English

Professors

Lecturers	Office hours for students					
	Starting time	Finishing time	Day	Start date	End date	Office / Building
Josep Cifre Llompart *(Responsible)* pep.cifre@uib.es	15:30	17:30	Wednesday	10/09/2018	08/02/2019	Despatx professor/ Annexe extern Mateu Orfila

Context

The subject is included as a Basic subject on the second year, first semester, in the degree of Enginyeria Agroalimentària i del Medi Rural at the EPS UIB.

Requirements

The subject tries to be as applied as possible in order to give the students not only the basic knowledge but also the tools to apply it to practical situations.

Essential

The level of english should be enough both at written and spoken levels.

Recommended

It is highly recommended that the students have passed with merit the subjects of Algebra, Calculus and Biology included in the first year of the degree, or to have a similar level on that contents. It is also recommended that the students have a basic knowledge on mathematics, computing and technical language.

Skills

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Specific

* B1: Mathematics applied to Engineering, statistics and optimization. .
* B3: Basic computing knowledge, mainly at a software level. .

Generic

* G9: Hability to communicate, to teach and a certain degree of leadership. .
* G11: Special habilities in terms of social, ethical and environmental aspects. .
* G12: Hability to work multidisciplinary, multiculturally and inside big teams. .

Basic

* You may consult the basic competencies students will have to achieve by the end of the degree at the following address: http://www.uib.eu/study/grau/Basic-Competences-In-Bachelors-Degree-Studies/

Content

The classes will take place both in conventional and in computing rooms. The contents will be splitted into theoretical, problem solving, practical cases and tutorials.

Range of topics

Experimental design and Data analysis. Experimental design and Data analysis

Aim of the course: interest of experiments in agriculture (2 h).

Types of experiments (4 h).

Basic concepts of statistics and experimental design (10 h).

Experimental design and analysis and discussion of results (36 h).

Modelling and optimization (4 h).

Main resources available (4 h).

Teaching methodology

The aim of the subject is to give the student the basic theorethical and practical contents in order to be able to design and analyse experiments in practical agronomy under a real scenario.

Workload

The subject includes all the activities described above and has a volume of work of 6 european credits.

In-class work activities (2.4 credits, 60 hours)

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Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Contents	Large group (G)	The aim of the subject is to give the students the minimum contents needed to be able to solve basic experiments and to continue learning for themselves, in order to be able to solve more complex situations. These contents will be presented and discussed with the students in a conventional romm every monday in a 2 hours session, using computing facilities and a dashboard.	15
Practical classes	Numerical exercises	Large group (G)	The aim of these sessions is to solve practical problems and situations that may appear in a working scenario, making use of the basic knowledge given in the theorethical classes. The teacher will explain and solve some problems to the students and will also give the students some more cases to be solved by them and then corrected together.	15
Practical classes	Computing class exercises	Medium group 2 (X)	These sessions will take place in a computing room where all the students will work in small groups on a computer trying to solve the problems the teacher gives them. The idea is to help the students understanding the basic concepts and to handle and solving practical problems making use of these knowledge and computing facilities (specific software programs like SPSS, Excell and Matlab).	24
ECTS tutorials	Group tutorials	Medium group 2 (X)	During the semester the students will have some group tutorials with the teacher, in order to be able to discuss, check and solve cases, ideas and problems that may arise during the classes all along the subject.	6

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Aula Digital platform.

Distance education tasks (3.6 credits, 90 hours)

Modality	Name	Description	Hours
Individual self-study	Study and case resolution exercises	The student is encouraged to work at home for certain hours in order to study the items given in classes, and to solve problems and questions related or given by the teacher, in order to clarify some aspects, to learn more or to reinforce the knowledge acquired during the classes.	60
Group or individual self-study	Technical reports	The students will work themselves in solving practical problems and reporting them using a short but technical language.	30

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Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

The subject tries to merit all the skills of the students included in the description of the classes, in order to have a better merit of each student at a whole level.

Frau en elements d'avaluació

In accordance with article 33 of Academic regulations, "regardless of the disciplinary procedure that may be followed against the offending student, the demonstrably fraudulent performance of any of the evaluation elements included in the teaching guides of the subjects will lead, at the discretion of the teacher, a undervaluation in the qualification that may involve the qualification of "suspense 0" in the annual evaluation of the subject".

Contents

Modality	Theory classes
Technique	Short-answer tests **(retrievable)**
Description	The aim of the subject is to give the students the minimum contents needed to be able to solve basic experiments and to continue learning for themselves, in order to be able to solve more complex situations. These contents will be presented and discussed with the students in a conventional romm every monday in a 2 hours session, using computing facilities and a dashboard.
Assessment criteria	Written test in a conventional class.
	Skills B1, G7 and G11 will be evaluated.

Final grade percentage: 20%

Numerical exercises

Modality	Practical classes
Technique	Extended-response, discursive examinations **(retrievable)**
Description	The aim of these sessions is to solve practical problems and situations that may appear in a working scenario, making use of the basic knowledge given in the theorethical classes. The teacher will explain and solve some problems to the students and will also give the students some more cases to be solved by them and then corrected together.
Assessment criteria	Basic problems Test in a conventional class.
	B1 and T2 skills will be evaluated.

Final grade percentage: 20%

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Computing class exercises

Modality	Practical classes
Technique	Real or simulated task performance tests **(retrievable)**
Description	These sessions will take place in a computing room where all the students will work in small groups on a computer trying to solve the problems the teacher gives them. The idea is to help the students understanding the basic concepts and to handle and solving practical problems making use of these knowledge and computing facilities (specific software programs like SPSS, Excell and Matlab).
Assessment criteria	Practical cases to be solved in small groups. B3, T2, G9 i G12 skills will be evaluated.

Final grade percentage: 60%

Resources, bibliography and additional documentation

The contents needed for the students will be delivered weekly on the Aula Digital by the teacher. If there is any other resource needed, the teacher will mention particularly to the students.

Basic bibliography

- Fernández Escobar R, Trapero A, Dominguez J. 2010. Experimentación en Agricultura. Junta de Andalucía.
- Walpole, Myers, Myers, 2015. Probability and Statistics for Engineering and Sciences. Pearson Education. NY.

Complementary bibliography

-Elena JM, Fernández M. 1986. Guía Técnica para ensayos de variedades en campo. FAO. Roma.
- Drapper NR, Smith H. 20145. Applied Regression Analysis. John Wiley and Sons. NY.

Other resources

Computing software present at the computer room.

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