

Degree	Type	Year	Semester
4313771 Plant Biology and Biotechnology	OT	0	1

Contact

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Use of languages

Principal working language: english (eng)

Prerequisites

Basic knowledge on Plant Biology and Biotechnology

Objectives and Contextualisation

This module will introduce the students into the current state of research in the fields of genetics and functionality of plants. The acquired knowledge will help them to understand the importance and the future necessities to develop these fields and increase their analytical skills.

Skills

- Apply knowledge of plant molecular genetics to different areas of science and industry.
- Apply knowledge of the functional mechanisms of plants from the different organisational levels to the characterisation of processes of growth and development of the whole plant organism.
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Develop critical reasoning within the subject area and in relation to the scientific or business context.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Propose and analyse ad hoc solutions deriving from research with plants, in line with the situations and needs of each case.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Synthesise, weigh up alternatives and engage in critical discussion.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Use scientific terminology to account for research results and convey these in spoken and written English in an international context.

Learning outcomes

1. Apply advances in knowledge of the processes that regulate gene expression in plants and their regulation through internal and external factors in the study of plants.
2. Choose and apply model plants for the study of functional mechanisms in plants.
3. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
4. Describe the processes of growth and development regulation in plants and apply techniques to study these.

5. Develop critical reasoning within the subject area and in relation to the scientific or business context.
6. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
7. Propose innovative, enterprising solutions in plant molecular genetics.
8. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
9. Synthesise, weigh up alternatives and engage in critical discussion.
10. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
11. Use scientific terminology to account for research results and convey these in spoken and written English in an international context.

Content

1. Lectures related to genetics and plant functionality organized by the CRAG, the own master and, occasionally, other UAB initiatives like the Biocluster.
2. Debate with the lecturer.
3. Seminars with the tutor of selected lectures.

Methodology

- Lectures
- Seminars
- Tutorials
- Searching and analyzing articles/reports of interest
- Development of reports/works

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Lectures	20	0.8	9, 5, 7, 8, 3, 6, 10, 11
Seminar	4	0.16	9, 5, 7, 3, 6, 10, 11
Type: Supervised			
Consultation and analysis of articles and reports of interest	12	0.48	1, 9, 4, 5, 2
Tutorials	4	0.16	1, 5, 3, 6
Type: Autonomous			
Preparation of reports and homework	110	4.4	

Evaluation

Attendance and active participation in class: 80% of the final qualification

Delivery of reports/works: 20% of the final qualification

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Attendance and active participation in class	80%	0	0	9, 5, 7, 8, 3, 6, 10, 11
Reports/papers	20%	0	0	1, 9, 4, 7, 8, 3, 6, 2, 10, 11

Bibliography

Annual Review of Plant Biology

Biochemistry & Molecular Biology of Plants. Buchanan, B., Gruissem, W.; Jones, R.

Research articles related to the seminars