

Why study this MSc Degree?

In recent years, significant progress at an unprecedented rate has been made in the knowledge of both the functioning of living beings of agri-food and forestry interest and the industrial processes in which they are involved. As a result, there has been an explosion in the number of biotechnology companies, laying the foundation of knowledge-based bio-economics, which gives this sector a promising future.

These companies demand high-qualified professionals in the most recent biotech advances. The quality of the professors of the MSc Degree in Biotechnology and Bioengineering of Plants in the 'Universidad Politécnica de Madrid (UPM),' (researchers in prestigious centres), as well as the professionalism of the collaborating companies, ensure that the graduate students will have adequate training to lead R & D & I activities in the private and the public sectors.

The MSc Degree in Biotechnology and Bioengineering of Plants provides the student with solid theoretical-practical knowledge and the professional development necessary to launch a career in Life Sciences or prepare for a demanding PhD program.

Goals

The main goal of this MSc Degree is to train professionals in the new knowledge and the biotech tools applicable to the Agroforestry and Food area. The program also introduces research in the fields covered by the excellent Doctorate Program in "Biotechnology and Genetic Resources of Plants and Associated Microorganisms" at the UPM.

Target group:

The MSc Degree in Biotechnology and Bioengineering of Plants is aimed at Engineers or Graduates in Biotechnology, Agroforestry Engineering, Biology, or related studies.

Branch: Sciences
Area: Biotechnology
Orientation: Academic / Professional
Credits: 60 ECTS
Duration: 2 semesters (September-July)
Education: Attendance-based
Number of places: 25
Language: Spanish / English (only for the course: Research Seminar)

Contact details:

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Escuela Técnica Superior de Ingeniería
Agronómica, Alimentaria y de Biosistemas

MSc Degree in Biotechnology and Bioengineering of Plants



UNIVERSIDAD
POLITÉCNICA
DE MADRID



ESCUELA TÉCNICA SUPERIOR
DE INGENIERÍA AGRONÓMICA,
ALIMENTARIA Y DE BIOSISTEMAS

MSc Degree in Biotechnology and Bioengineering of Plants

ETSIAAB

Structure

| | | |
|-------------------|---------------------------|----------------|
| MODULE I | ELECTIVE COURSES | 36 ECTS |
| MODULE II | COMPULSORY COURSES | 12 ECTS |
| MODULE III | MASTER'S THESIS | 12 ECTS |

Curriculum

| COMPULSORY COURSES | ECTS | SEM |
|---|------|-----|
| PRACTICAL INITIATION TO RESEARCH AND INNOVATION | 8 | 2 |
| RESEARCH SEMINARS | 4 | 2 |

| ELECTIVE COURSES | ECTS | SEM |
|--|------|-----|
| BIOINFORMATICS APPLIED TO BIOTECHNOLOGY | 4 | 1 |
| BIOTECHNOLOGY OF PLANT DEVELOPMENT | 4 | 1 |
| MOLECULAR BIOLOGY OF PLANT NUTRITION | 4 | 1 |
| PLANTS AS BIOFACTORIES AND APPLICATIONS OF SYNTHETIC BIOLOGY | 4 | 1 |
| BIOTECHNOLOGICAL APPLICATIONS OF IN VITRO PLANT CULTURE | 4 | 1 |
| BIOTECHNOLOGY AND GENOMICS APPLIED TO PLANT BREEDING | 4 | 1 |
| ADAPTIVE RESPONSES AND RESILIENCE OF PLANTS TO ABIOTIC STRESSES | 4 | 1 |
| MODE OF ACTION AND DEVELOPMENT OF PHYTOSANITARY PRODUCTS AND BIOSTIMULANTS | 4 | 1 |
| MICROORGANISM BIOTECHNOLOGY APPLIED TO PLANTS | 4 | 1 |
| MECHANISMS OF RESISTANCE TO PLANT PATHOGENS AND PESTS | 4 | 1 |
| INFECTIOUS PLANT DISEASES: MOLECULAR BASIS OF PATHOGENESIS | 4 | 1 |
| CURRENT TRENDS IN PLANT PROTECTION | 4 | 1 |
| INNOVATION, VALORIZATION AND LEGAL ASPECTS OF PLANT BIOTECHNOLOGY | 4 | 2 |

| MASTER'S THESIS | ECTS | SEM |
|-----------------|------|-----------|
| Master's Thesis | 12 | Undefined |

Most of the teaching staff of this master's degree are professionally linked to the Centre for Plant Biotechnology and Genomics, CBGP (UPM-INIA/CSIC), granted with the 'Severo Ochoa Research Excellence Accreditation-2017/21 and 2022/26.'



Partners

