Hinc patriam sustinet

Instituto Superior de Agronomia
Universidade Técnica de Lisboa

Name of the subject: PLANT FUNCTIONAL GENOMICS (Lic. Biology, optional for Agronomy, 2nd cycle)

Coordenator: Maria da Gloria Esquível

Other Lecturers: Wanda Viegas, Sofia Pereira, M. Conceição Loureiro Dias, Margarida Oliveira (Prof. Invited), C. Pinto Ricardo (Prof. Invited)

Pre-required subjects: Genetics and Genomics; Plant Physiology

Number and type of classes: Lectures/workshops – 2 × 2.5 hours/week

Programme	**Duration (weeks)**	**Lectures**
Presentation of basic concepts. Organization of the genomes of plants and algae models (examples Arabidopsis thaliana, *Populus tremuloides, Oryza sativa, Synechocystis* sp.PCC6803 and *Chlamydomonas reinhartii*)..	1	M Glória Esquível,
Experimental methods of the functional genomics: Informatics and the computational biology tools (databases, bioinformatics). Transcriptomics (microarrays, ESTs,..). Proteomics (2D electrophoresis and its analysis) and metabolomics	4	Sofia Pereira Candido Pinto Ricardo (Prof. invited) Glória Esquível,
The epigenetics: mechanism of genomic imprinting, Evolution of epigenics systems, RNAinterference (RNAi), heterochromatin and epigenetic reprogramming; nuclear cloning, staminal cells and gamets	4	Wanda Viegas
Case-study in Plant Functional Genomics: 1- Use of Microarrays in studies of yeast metabolism (*Saccharomyces cerevisiae*. 2- Stress hidric response on *Lupinus albus,* a proteomics point of view. 3- Abiotic stress on plants, the role of transcription factors 4- Functional characterization of the photosynthetic apparatus.	4	M. Conceição Loureiro Dias Cândido Pinto Ricardo (Prof. invited) Margarida Oliveira (Prof. invited) Glória Esquível
Works presentations given by students.	1	M Glória Esquível