







KA2 STRATEGIC PARTNERSHIPS FOR HIGHER EDUCATION CALL 2015

Higher Education Innovation in PLAnt Diversity Flexible learning paths for emerging labour market HEI-PLADI











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Higher Education Innovation in PLAnt Diversity Flexible learning paths for emerging labour market September 2015-August 2018



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MAI CHANIA

HEI-PLADI Project







OBJECTIVES

GENERAL AIMS

- Contributing to the development of a European Area of Skills and Qualifications.
- Enhancing digital integration in learning, teaching, training and youth work at various levels.
- Supporting the implementation of reforms in line with the 2011 EU Modernisation Agenda's priority areas.

Provide more opportunities for students to gain additional skills in the field plant diversity.

SPECIFIC AIMS

- Contribute to higher education institutions reforms, responding to current and emerging green jobs labor market.
- Enhance lifelong learning, supporting the implementation of the 2013 Communication on Opening Up Education and strategic use of open educational resources.
- Stimulate the internationalization of European higher education systems.





HEI-PLADI IS A PROGRAM WHICH INTEGRATES ICT IN A BLENDED PATH OF VIRTUAL AND PHYSICAL MOBILITY.



FLEXIBLE LEARNING PATH OF A <u>VIRTUAL</u> AND <u>PHYSICAL MOBILITY</u> TO PROVIDE STUDENTS THE OPPORTUNITIES TO DEVELOP ADVANCED KNOWLEDGE AND TECHNICAL SKILLS TO APPROACH MULTITASKS PLANT DIVERSITY ISSUES.





Flexible learning paths

VIRTUAL MOBILITY

PHYSICAL MOBILITY

Five e-learning courses on a Moodle platform <u>Total 30 ECTS</u> Seven short-term mobility: field works, practical and laboratory activities focused on developing skills and deepen knowledge gained from the e-learning courses.

Total 30 ECTS

Courses of their curricula degree

Optional courses

Training activities

Certification in the Diploma Supplement





Flexible learning paths

VIRTUAL MOBILITY

- E-learning courses are organized as a set of Learning Objects, i.e., modular resources, Digital and web-based, that can be used and re-used to support learning activities for plant diversity.
- Contents of the proposed learning program are tailored to match the interests of students coming from a wide variety of backgrounds, including areas as biology, environmental and natural sciences, forestry and agricultural sciences and informatics

Students may follow the whole program or just courses of their specific interest







E-learning courses

Course of Plant taxonomy 8 ECTS

Course of Modern methods for Plant taxonomy 6 ECTS

Course of *in situ* and *ex situ* plant conservation 7 ECTS

Course of Plant management: botanic garden 5 ECTS

Course of Geographical Information Systems 4 ECTS





VIRTUAL MOBILITY



E-learning

Learning Object organisers: *Rocco Oliveto*, *Simone Scalabrino* Courses will be delivered as learning objects, on the Moodle platform.

Plant Taxonomy 8 ECTS

Course organizer: Paola Fortini (fortini@unimol.it)

Lecturers: Paola Fortini, Piera Di Marzio (UNIMOL), Anely Nedelcheva (UBG), Ana Isabel Correia (ULISBOA), Adam Kapler (PAN OB-CZRB), Joseph Buhagiar (UOM), Ilektra Remoundou (CIHEAM-MAICH)

OBJECTIVES

Students will achieve the ability to:

- Describe and identify a living plant using botanical terms
- Understand vascular plants classification systems
- Recognize large and common families of European and Mediterranean non flowering and flowering plants
- Identify the most common plant species using dichotomous analytical keys, interactive or traditional, based on macroscopic and microscopic morphology
- Exhibit basic knowledge in anatomical approaches applied to Systematics
- Prepare a representative collection of plant specimens

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- · Taxonomy, Plant taxonomy: introduction, need, aim and importance
- · "Taxonomy" and "Systematic"
- · Identification. Taxonomic characters
- Nomenclature. Taxa and their ranks. Typification. International Code of Nomenclature for algae, fungi, and plants (ICN)
- Classification. Classification systems. APG III system: molecular-based system of plant taxonomy
- Phylogeny

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- Pteridophyta: characteristics, morphology, ecology, life cycle and classification.
- Lycopodiopsida, Psilotopsida, Equisetopsida, Marattiopsida, Polypodiopsida (with special emphasis on families: Lycopodiaceae, Isoétaceae, Psilotaceae, Selaginellaceae, Ophioglossaceae, Equisetaceae, Osmun- daceae, Marsileaceae, Polypodiaceae)



Courses program details in the handbook published on HEI-PLADI webpage



- · Gimnosperms: characteristics, morphology, ecology, life cycle and classification.
- Cycadophyta, Ginkophyta, Gnetophyta, Coniferophyta (with special emphasis on Gymnosperms families: Pinaceae, Cupressaceae, Taxaceae, Ginkgoaceae, Ephedraceae, Gnetaceae, Welwitschiaceae).

3

- Angiosperms morphology: observing and describing variation in vegetative morphology using botanical terms
- · Identification of leaf and phyllotaxy types
- Dissecting flowers and inflorescences and describing floral forms and structures using terms, floral formulas, and flower diagrams
- · Identification of fruits, infrutescences and seeds

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- · Origin and diversity of Angiosperms (Eudicot and Monocot)
- Life cycle
- Characteristics, morphology, ecology, classification of the main Eudicots families: Apiaceae, Campanulaceae, Compositae (Asteraceae), Betulaceae, Boraginaceae, Brassicaceae, Caryophyllaceae, Ericaceae, Euphorbiaceae, Fabaceae

 Characteristics, morphology, ecology, classification of the main Eudicots families: Fagaceae, Lamiaceae, Oleaceae, Ranunculaceae, Rosaceae, Rubiaceae, Scrophulariaceae, Solanaceae

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 Monocots. Characteristics, morphology, ecology, classification of the main Monocots families: Alliaceae, Araceae, Arecaceae, Cyperaceae, Iridaceae, Liliaceae, Orchidaceae, Poaceae

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- Plant Identification: using and constructing botanical keys; anatomical methods in systematics
 - · Techniques in collecting and preserving plant specimens
 - · Collection of special groups of plants
 - · Analytical techniques: morphometric methods

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- · Field survey methodologies and techniques practical handbook
- · Herbarium collection, Herbaria, Index Herbariorum (IH)





PHYSICAL MOBILITY

Short-term physical mobility will be focused on field works, field visits, practical and laboratory activities for developing skills and deepening knowledge on topics treated in the e-learning courses.

For each short-term mobility, five students from each partner University will be selected to be financially supported by the project.

Calls for students selection will be published on HEI PLADI webpage

Main selection criteria:

- 1. Acquisition of ECTS on e-learning courses
- 2. English skills
- 3. Motivation letter





PHYSICAL MOBILITY

Practical Plant taxonomy 5 ECTS University of Molise (Italy) March 2017

Plant management: botanic garden: *4 ECTS* University of Sofia (Bulgaria) May 2017

Modern methods for plant taxonomy <u>4 ECTS</u> University of Lisboa (Portugal) June 2017

Ex situ plant conservation: 4 ECTS Polish Academy of Science (Poland) July 2017

Geographical Information Systems: *4 ECTS* Mediterranean Agronomic Institute of Chania (Greece) September 2017

Plant management: botanic garden: *4 ECTS* University Malta (Malta) April 2018

In situ and ex situ plant conservation: 5 ECTS University of Cagliari (Italy) May 2018





HEI PLADI WEB PAGE

https://dibt.unimol.it/HEI-PLADI/home

