

| Optional course – main information | |
|------------------------------------|---------------------------|
| Academic subject | Plant Molecular Phylogeny |
| ECTS credits (CFU) | 4 |
| Compulsory attendance | |
| Teaching language | Italian |
| Accademic Year | 2020/2021 |

| Professor/Lecturer | |
|--------------------|----------------------------|
| Name & SURNAME | Fabrizio Grassi |
| email | fabrizio.grassi@uniba.it |
| Tel. | |
| Tutorial time/day | Wednesday (by appointment) |

| Course details | Pass-fail exam/Exam with mark out of 30 | SSD code | Type of class |
|----------------|---|----------|------------------|
| | Exam with mark out of 30 | Bio/01 | Lecture/workshop |

| Teaching schedule | Semester | day and time | room |
|-------------------|----------|---|------|
| | I | Tuesday and Wednesday 15.00 -16.40 (to be defined with the students) | |

| Lesson type | CFU/ECTS | Lessons (hours) | CFU/ECTS lab | Lab hours | CFU/ECTS tutorial/workshop | Tutorial/workshop hours | CFU/ECTS field trip | Field trip Hours |
|-------------|----------|-----------------|--------------|-----------|----------------------------|-------------------------|---------------------|------------------|
| | 4 | 32 | | | | | | |

| Time management | Total hours | Teaching hours | Self-study hours |
|-----------------|-------------|----------------|------------------|
| | | 32 | |

| Academic Calendar | First lesson | Final lesson |
|-------------------|--------------|--------------|
| | 27/10/2020 | 23/12/2020 |

| Syllabus | |
|--|---|
| Course entry requirements | Fundamentals of plant biology |
| Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS) | |
| <i>Knowledge and understanding</i> | To acquire further knowledge in plant phylogeny and methods to construct phylogenetic trees |
| <i>Applying knowledge and understanding</i> | The student should be able to describe and apply the most suitable methods for the study of plant phylogeny |
| <i>Making informed judgements and choices</i> | Acquisition of autonomy in the evaluation and interpretation of the scientific literature |
| <i>Communicating knowledge and understanding</i> | To describe the phylogenetic relationships between the main taxonomic groups using a correct scientific terminology |
| <i>Capacities to continue learning</i> | Some scientific papers will be commented and critically analyzed to assess the progressive level of learning. |

| Syllabus | |
|----------------|--|
| Course content | Introduction to the plant phylogeny. The origins of the phylogeny and description of the main applications. Cladistics vs. Phenetics. Description of the main methods for the construction of phylogenetic trees. Description and use of the Maximum Parsimony method and probabilistic methods. Nuclear and plastid DNA, and genes of interest for the molecular phylogeny. Origin of Bryophytes, Tracheophytes and |

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| | Spermatophytes. Evolution of the morphological and molecular traits. Origin and diversification of Angiosperms. Morphological and molecular evidence to support the main monophyletic groups. Basal angiosperms and paleoherbs. The molecular clock. The use of fossils to define the times of speciation. Polyploidy in the evolution of plants. Domestication of plants. The use of molecular markers to distinguish related species and critical groups. Resolution of taxonomic problems through the analysis of morphological and molecular traits. Description of some software for phylogenetic analysis. |
| Course books/Bibliography | Judd, Plant Systematics: A Phylogenetic Approach, Sinauer Associate |
| Notes | During the course students will be provided with further bibliographical references. |
| Teaching methods | Lectures, Power Point, software and database |
| Assessment methods (indicate at least the type written, oral, other) | Oral examination. |
| Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are) | <ul style="list-style-type: none"> -Acquisition of phylogenetic concepts and description of relationships between principal taxonomic groups. - Ability to describe phylogenetic trees and correct use of scientific language. - Ability to describe and apply principal phylogenetic methods. - Capacity to resolve basic phylogenetic problems. |
| Further information | |