LOGO DELLA STRUTTURA PRIMARIA

COURSE: General and Forest Botany			
ACADEMIC YEAR: 2017-2018			
TYPE OF EDUCATIONAL ACTIVITY: Basic			
TEACHER: Prof.ssa Simonetta Fascetti			
e-mail: simonetta.fascetti@unibas.it		website:	
phone: 0971/205587		mobile (optional):	
Language: italian			
ECTS: 12 (8 L + 4 E)	n. of hours:) 120 (80 frontal lectures; 40 practice)	Campus: Potenza Dept./School: School of Agriculture, Forest, Food and Environmental Sciences Program: MSc in Forestry and Environmental Sciences	Term: 2 + 3

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

This is a basic course in General and Forest Botany including the very basic elements of Sistematic Botany. The main objective of the Course is to provide the Students with the basic knowledge of the principal characteristics of the Vegetal Organisms and the elementary concepts of the Vegetal Diversity. In particular, at the end of the Course, the Students should be able to recognize and to handle the most important sistematic groups of plants.

Knowledge and understanding: knowledge and understanding of the general principles governing, both at a qualitative and quantitative level, the macroscopic behaviour of the matter. In particular: bacis elements of citology, • knowledge about anatomy and organs of the plants, basic knowledge of Evolution, Systematic and Plants Taxonomy, basic knowledge of Vascular Flora in relation to Gymnospermae and Angiospermae and about the most important species of forestry interest.

Applying Knowledge and understanding: Ability to observe and recognize the main relationships between macroscopic and microscopic characteristics of plant organisms.

Making judgements: ability to select and apply the best procedure in solving simple stoichiometric problems; ability to make relationships between the salient macroscopic and microscopic properties of the matter; ability to discriminate the different macroscopic properties of the matter and to apply the correct microscopic interpretation; ability to predict the key physical properties and the differences in the reactivity of the studied classes of organic compounds

- **Communication skills**: ability to organize in a logical way and to communicate, using an appropriate and correct language and mathematical and graphical tools as well, the acquired knowledge.
- **Learning skills**: ability to collect and organize in a functional way the information coming from class lectures, suggested books, and literature data.

PRE-REQUIREMENTS Elements of "Physics" and "General and Organic Chemistry"; Basic knowledge of "General Biology" and "Genetics"

SYLLABUS

1. Brief history and evolution of life on Earth
2. Energy flow in ecosystems (4): 2.1: autotrophic and heterotrophic organisms. 2: Main Organic Molecules (Carbohydrates, Lipids, Proteins, Enzymes, Nucleic Acids)
3. Cytology (5): 3.1: prokaryotic cell. 3.2: Eucharistic Cell. 3.3: cell organ structure and functions. 3. 4: animal and vegetable cell
4. Structural organization of vascular plants (12): 4.1: vegetable histology: tissue systems (fundamental, conductive, tegumentary, secretory, meristematic). 4.2: anatomy and organography: primary and secondary structure of the root. 4.3 anatomy and organography of the stem. 4.4: anatomy and organography of the leaf. 4. 5: morpho-structural adaptations to the Earth's environment. 4.5: Primary and secondary growth in the stem and root
5. Metabolism (5): 5.1: Anabolism and Catabolism. 5.2: Cellular respiration. 5.3: Chlorophylline photosynthesis.
6. Concept of species. Classification, nomenclature and taxonomic ranks (2)
7. Reproduction in plants (6): 7.1: Mitosis and vegetative reproduction. 7.2: organs for vegetative reproduction in tallophytes and cormophytes. 7.3. Biological forms. 7.4: Meiosis and sexual reproduction. 7.5: Biological cycles and aplodiplobinous ontogenetic cycle
8. The evolution of terrestrial plants (4): 8.1: Algae, Bryophyta, Pteridophyta. 8.2: Gymnospermae,

Angiospermae aplodiplobionte

9. Spermatophyta: (2): 9.1 general characteristics and reproduction.9.2: the seed
10. Gymnospermae: General characteristics and species of forestry interest (16): 10.1: Reproduction, reproductive apparatus, leaves, wood. 10. 2 Gingkoaceae, Cycadaceae, Taxaceae. 10. 3: Pinaceae. 10. 4: Taxodiaceae, Cupressaceae
11. Angiospermae: General characteristics and species of forestry interest (20): 11.1 flower, pollination, fruit, reproduction, leaves, wood. 11.2: systematic dicotyledons and monocotyledons. 11.3: evolution and flower diversity. 11.4: Pollination and fertilization. 11. 5: Development and diversity of fruit, dissemination. 11.6: amentiferous (Juglandaceae, Fagaceae, Betulaceae, Corylaceae, Salicaceae,). 11.7: Characteristic species of application and forestry interest of the following families: Brassicaceae, Tiliaceae, Salicaceae, Rosaceae, Fabaceae, Myrtaceae, Aceraceae, Oleaceae, Labiatae, Asteraceae, Gramineae.

TEACHING METHODS

Theoretical lessons, Classroom tutorials.

Lecture format: lectures will be comprised of PowerPoint slides prepared by the Teacher supplemented with chalkboard presentations.

EVALUATION METHODS

Intermediate verification, Oral examination

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Reference textbook: **Biologia delle piante di Raven Evert Ray F., Eichhorn Susan E. , Ed. Zanichelli**

Botanica generale e biodiversità vegetale, Pasqua Gabriella;Abbate Giovanna;Forni Cinzia , ed. Piccin, Nuova Libreria

Botanica forestale vol.1 e 2, , Romano Gellini e paolo Grossoni, CEDAM ed.

INTERACTION WITH STUDENTS

Direct methods through reception in university office; distance communication via phone, e-mail and by appointment.

EXAMINATION SESSIONS (FORECAST)[1]

19/1/2018, 16/02/2018, 16/3/2018, 4/5/2018, 8/6/2018, 6/7/2018, 5/10/2018, 7/12/2018, 18/1/2019, 15/2/2019/, 15/3/2019.

EXAMINATION COMMITTEE

Prof.ssa Simonetta Fascetti (member, president), Dott. Leonardo Rosati (member), Dott. Carmine Colacino (additional member)

FURTHER INFORMATION

[1] Subject to possible changes: check the web site of the Teacher or the Department/School for updates.