

<b>Name of the subject:</b> EVOLUTION AND ANGIOSPERM PHYLOGENY		
<b>Teacher(s):</b> Dr. Goran Anačkov		
<b>Status of the subject:</b> elective		
<b>Number of ECTS points:</b> 15		
<b>Condition:</b> none		
<b>Goal of the subject</b> The highest level in the taxonomy of plants. Training students to recognize phylogenetic connections and relationships within Angiosperms.		
<b>Outcome of the subject</b> Formation of researchers in the field of plants taxonomy, with a developed philosophical thinking. Developing of thinking: analysis and synthesis. Versatility in plant taxonomy.		
<b>Content of the subject</b> <i>Theoretical lectures:</i> The evolutionary record and methods of reconstruction; Earliest forms of plants and the colonization of land; Formation and transformation of forest plant communities. Significant periods in the Plant evolution; Flowering plants origin and their development. Mass extinction and plants. Evolutionary alternations and ontogeny (prolongation, abbreviation, deviation, „neoteny“. Evolutionary trends in formation of vegetative organs, flowers (diversification) and inflorescences. Transformation of the pollengrains and megaspores. Evolution of fruits and seed. Mosaics and heterobaty of characters. Polyploidy, parallel and convergent evolution in plants, the evolution of plant genome size. Angiosperm phylogeny: ANA group, Magnoliids plants, monocots, early eudicots, central core of eudicots, rosids and asteriids. <i>Practical lectures:</i> On the exercise will be analyzed phylogenetic tree of some plant divisions. Based on the characters of fossil ancestors and now-days representatives, will be determined the common and differential features, and will be point out the importance of atavistic phenomena in the plant world. Will be given access to the basic principles of the Telome theory as a basis of the phylogeny of vascular plants. It will be also emphasize the importance of ancestral plant groups for the origin of some progressive features.		
<b>Recommended literature</b> Soltis D., Soltis P., Endress P., Chase M.W., Manchester S., Judd W., Majure L., Mavrodiev E. (2018): Phylogeny and Evolution of the Angiosperms: Revised and Updated Edition. University of Chicago Press, Chicago. Willis K.J., McElwain J.C. (2014) : The Evolution of Plants, sec.ed. Oxford University Press, Oxford. Judd, W.S., Campbell, C.S., Kellogg, E.A., Stevens, P.F., Donoghue, M.J. (2002): Plant Systematics: A Phylogenetic Approach. Sinauer Associates, USA. Krassilov V.A. (1997): Angiosperm Origins: Morphological and Ecological Aspects. Paleontological Institute of the Russian Academy of Sciences, Sofia. Takhtajan, A. (1991): Evolutionary Trends in Flowering Plants. Columbia University Press, New York. Takhtajan, A. (1959): Die evolution der Angiospermen. Veb Gustav Fischer Verlag, Jena – The Serbian translation professor Pal Boža PhD – internal script. Stojković B., Tucić N. (2012): From molecules to organisms, molecular and phenotypic evolution. Službeni glasnik, Belgrade – in serbian. Doctoral dissertations and masters theses in the field of molecular systematics of plants recommended by mentors, as well as scientific papers and websites with current issues in taxonomy and plant systematics.		
Number of active classes	Theory:5	Practice: 5
<b>Methods of delivering lectures</b> Lectures, individual consultations, lab work, seminar papers.		
<b>Evaluation of knowledge (maximum number of points 100)</b> Seminar paper1 30 points Seminar paper 2 10 points Oral exam 60 points		