Name of the subject: AEROBIOLOGY

Teacher(s): Dr. Predrag Radišić, Dr. Branko Šikoparija

Status of the subject: Elective

Number of ECTS points: 15

# Condition: no

# Goal of the subject

Introduction to aerobiology - a scientific discipline that studies biological particles suspended in atmosphere, their transport, emission, deposition and impact in ecosystems. Training on basic methods for sampling, analysis of samples and data analytics. Introduction to application of aerobiology results in medicine, agriculture, forestry, climate sciences and forensics.

# **Outcome of the subject**

Enables work in laboratories that study bioaerosols and their use in allergology, plant protection, occupational health and atmospheric sciences.

### Content of the subject

#### Theoretical lectures

Definition and history of aerobiology. Diversity of bioaerosols, sources, emission, transport and sedimentation mechanisms so as the impact on environment.

Introduction to common sampling methods and physical approaches to representative sampling including devices used in common practice. Notable attention is given to data analytics (i.e. forecasting for airborne pollen and fungal spores suspended in the atmosphere) and its application in medicine, plant protection, occupational health, agriculture, forestry, climatology and forensics.

#### Practical lectures

Training for using Rotorod, Durham, Andersen and Hirst type samplers. Work with samplers and analysis using optic microscope. Identification of the most important allergenic pollen (birch, grasses, mugworth, ragweed, olive). Identification of the most dominant airborne fungal spores (Cladosporium, Alternaria, Epicoccum).

# **Recommended literature**

# Шимић, С, Радишић, П., Шикопарија, Б. и Дулић, И. (2007): Палинологија. стр.1-93

Радишић, П. и Шикопарија, Б. (2012): О полену, У Игић, Р. (ед) Алергијске биљке. ПМФ Департман за биологију и екологију и "Врело" Друштво за исхрану и заштиту животне средине. 35-67.

Sofiev, M., Bergman, C-K (eds.) Allergenic Pollen: A Review of the Production, Release, Distribution and Health Impacts. Springer Verlag, 2013. pp272. ISBN978-94-007-4880-4

Cox, C.S. and Wathes, C. S. (1995): Bioaerosols handbook. Lewis Publishers. 1-621.

Number of active classes	Theory: 5	Practice: 5
Methods of delivering lectures		
Lectures, laboratory exercises, written essay and practical student project.		
Evaluation of knowledge (maximum number of points 100)		
Laboratory excercises 30 points; written essay on given topic 30: Practical student project: 40		