**Study program**: Faculty of Environmental protection

**Type and level of study**: Doctoral academic studies

**Course Title**: BIOTECHNOLOGY IN ENVIRONMENTAL PROTECTION 2

**Teacher(s): Dejana Panković**

**Status**: OBLIGATORY, II semester

**ECTS**: 15

**Prerequisite**: None

**The goal of the course:**
The main objective of this course is introduction and acquiring knowledge on the application of modern biotechnological methods in environmental protection, with special emphasis on methods for pollution detection.

**The outcome of the subject:**
Student training for the practical application of modern biotechnological methods and adoption of multi-disciplinary approach for solving the fundamental problems in environmental protection.

**Syllabus:**
*Theoretical study*
Biosensors in monitoring environmental pollution (definition, classification, history)
Bio receptors (tissues, microorganisms, cells, organelles, enzymes, antibodies)
The nucleic acid as biosensors (biosensors DNA, RNA Biosensor)
Application of molecular genetics techniques in conservation biology

**Literature:**
SAVIĆ Pavićević Dušanka, Matić Gordana (2011) Molekularna biologija 1, 364 str. NNK internacional, Beograd.
Mascini M., Palchetti I. (2011) Neucleic Acid Biosensors for Environmental Pollution Monitoring, Royal Society of Chemistry, Cambridge, CB4OWF, UK

| **Number of lectures:** | | | | Other Classes |
|---|---|---|---|---|
| Lectures: 2 | Practices: | Other forms of teaching: | Student research work:8 | |

**Teaching methods**:
Study process is interactive and multimedial, including power point presentations. Part of the teaching process are student seminar presentations, individual student work, lectures of national and interantional experts which leads to better understanding of problem comlexity. Practiacal part includes laboratory work, waching film material and consultations.

Score for grading (maximal 100 points)

| **Pre-commitments** | **Poens** | **The final exam** | Poens |
|---|---|---|---|
| Activity during lectures | 10 | Written exam | |
| Practical classes | | Oral examination | 40 |
| Colloquia | | | |
| Seminars | 50 | | |
| *Total* | 60 | | |