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| Course: | Мolecular mechanisms of plant resistance on stress |
| Course id:3МЗИ1И04 |
| Number of ECTS: 6 |
| Teacher: | Prof. dr Dubravka Štajner, Prof. dr Boris Popović |
| Course status | Elective |
| Number of active teaching classes (weekly) |
| Lectures: 2 | Practical classes: 2 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None/navesti ako ima |
| 1. Educational goal

The aim of the course is to achieve scientific skills and academic skills, develop creative abilities and mastering specific practical skills needed for future career development that are aligned with the directions of development of modern scientific disciplines in the world. |
| 1. Educational outcomes

Developing the ability of students to follow modern achievements in science and profession, developing the ability to solve problems using scientific methods and procedures in the process of plant growing and the production of healthy food as well as developing critical and creative thinking. |
| 1. Course content

Theoretical classes:Communication mechanisms of living organisms through chemical signals. The role of chemical signals in intercellular communication. Reactive forms of oxygen and nitrogen. Antioxidant systems of plants and oxidative stress. Molecular mechanisms of resistance of plants to abiotic stress (radiation, heat stress, water stress, drought, high salt, heavy metals and herbicides). The mechanisms of plant resistance to biotic stress. Hypersensitivity reactions and apoptosis. Systemic resistance. Genetic basis of plant resistance to stress. Induced plant resistance to stress.Research:Determination of antioxidant selected parameters and parameters of oxidative stress in plants. Determination of the activity of antioxidant enzymes. Determination of total antioxidant activity. Determination of malondialdehyde. Determination of reduced glutathione content of phenolic compounds and photosynthetic pigments. |
| 1. Teaching methods

Depending on the number of applicants, lectures and practical classes will be held or consultations and seminar |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam (izabrati) | Mandatory | Points |
| Lecture attendance | No |  | *Theoretical part of the exam/Oral part of the exam/Written part of the exam-tasks and theory* | Yes | 40 |
| Test | Yes | 30 |  |
| Exercise attendance | No |  |
| colloquium | Yes | 30 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Popović B.M., Štajner D., | Oxidative stress in plants | Faculty of Agriculture in Novi Sad | 2008 |
|  | Jacquot J.P. | Advances in botanical research-Oxidative stress and redox regulation in plants | Academic press, Elsevier | 2009 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationMASTER ACADEMIC STUDIES: SOIL SCIENCE AND PLANT NUTRITION |
| Table 5.2 Course specification |