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| Course: | *Plant Physiology* |
| Course id: | 3ORT3O11 |
| Number of ECTS: | 5 |
| Teacher: | Ivana V. MaksimovićMarina I. Putnik- Delić |
| Course status | Mandatory/Elective : Mandatory |
| Number of active teaching classes (weekly) |
| Lectures: 4x15=60 | Practical classes: 45 | Other teaching types  | Study research work: | Other classes: |
| Precondition courses | None |
| 1. Educational goal

The aim of the course is to provide students with knowledge about the functioning of the organism of higher plants, as well as on the impact of environmental factors on physiological processes. Also, students will learn how and to what extent certain physiological processes can be controlled, which is important for agricultural production. |
| 1. Educational outcomes

The outcome is knowledge about physiological processes in higher plants and abiotic and biotic factors affecting them, with the aim to apply this knowledge in practice.  |
| 1. Course content

LecturesPhysiology of plant cells: types, structure, compartimentality. Biomembranes. Organelles, microbodies, cytoskeleton. Chemical and physical properties of plant cells. Tissue culture or cells. Water regime: features, uptake, transport and transpiration. Factors affecting water regime. Plant water requirements, the impact of the lack of water, mineral nutrition: Content, classification and physiological role of essential and useful elements in plants. Mechanism of the uptake and transport of mineral nutrients and organic compounds. Mineral nutrition and yield. Photosynthesis: importance, photosynthetic pigments, absorption and transformation of light. Photophosphorilation. C3, C4 and CAM photosynthetic paths. Photorespiration. Transport of assimilates. Photosynthesis and yield. Respiration: Glycolysis, Krebs cycle, oxidative phosphorylation, energy balance. Alternative pathways and ecology of respiration, growth and differentiation: phytohormones, cell growth and development. Biological rhythms, differentiation, correlations, abscission, senescence and death. Seed physiology: Pollen, pollination, fertilization. Regulation of seed and fruit development. Seed germination and factors affecting it. Practical workContents of practical work accompanies lectures (Physiology of the cell, water regime, mineral nutrition, photosynthesis, respiration and enzymes, growth and development) |
| 1. Teaching methods: Lectures
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| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam (izabrati) | Mandatory | Points |
| Written entrance-exam | Yes | 20 | *Theoretical part of the exam/Oral part of the exam* | Yes | 40 |
| Test | No | 2x15 |  |
| Exercise attendance | Yes |  |
| *Term paper* | No | 10 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Kastori R, Maksimović I  | Ishrana biljaka | Vojvođanska akademija nauka | 2008 |
|  | Maksimović I, Pajević S.  | Praktikum iz fiziologija biljaka | Poljoprivredni fakultet i Prirodno-matematički fakultet, Novi Sad | 2002 |
|  | Lincoln Taiz and Eduardo Zeiger | Plant Physiology, Fifth Edition | Sinauer Associates | 2010 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationBACHELOR STUDIES OF FIELD AND VEGETABLE CROPS |