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| Name of course: **Physiology of cultivated plants** | **Credit value: 3** |
| **Course** **classification**: obligatory |
| **The proportion of the practical nature of the course, „educational character”: 50%** |
| **Type of course:** theoretical / practical, and the **total number: hours** in the given **semester.**Further (unique) means and properties of knowledge transfer: 28 lectures + 28 practices / semester |
| **Exam** type (colloquium / practical grade / **other** ): colloquiumFurther (unique) means of knowledge verification**:**  |
| The curricular **place of the course** (which semester): 1st semester |
| Prerequisites (if any): **-**  |

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| **Course description: a brief, but informative description of the knowledge to be acquired (14 weeks).** |
| In plant physiology lectures, the knowledge material is the life phenomena and life processes of plants. Students get acquainted with the plant biological evaluation of structure-function. Through the experiments performed in the practices, students gain insight into the design and methodology of plant physiology experiments and investigation methods. Experiments help to understand and master the theoretical material. Students will be competent in the knowledge of plant life to improve the effectiveness of applied crop production.

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| 1 | Basics in plant physiology, structure and funtion |
| 2 | Leaves, light absorption in photosyntheis |
| 3 | Carbon acquisition and fixation |
| 4 | Respiration (photo-, and dark) |
| 5 | Plant water relations: stomata, transpiration and plants in water-limited environments |
| 6 | Functions of nutrients in plant I. |
| 7 | Functions of nutrients in plant II. |
| 8. | Symbiotic relationships for nutrient capture, Nitrogen assimilation |
| 9. | Plant hormones – regulation of development and Plant hormones – environmental acclimation I. |
| 10. | Plant hormones – regulation of development and Plant hormones – environmental acclimation II. |
| 11. | Flowering |
| 12. | Fruit and seeds |
| 13. | Seed germination/dormancy  |
| 14. | Senescence |

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| **Required and recommended reading:** |
| **Required reading:**Lévai, L. Veres, Sz. (2013) Applied Plant Physiology. Digitális Tankönyvtár (https://regi.tankonyvtar.hu/hu/tartalom/tamop412A/2011\_0009\_Levai\_Laszlo\_Veres\_Szilvia-Applied\_Plant\_Physiology/index.html)Taiz, L., Zeiger, E. (2007) Plant Physiology. 4th ed. Sinauer Associates, Inc. ISBN 0-87893-823-0 or online version**Recommended reading:**Buchanan, B. B., Gruissem, W., Jones, R. L. (2015) Biochemistry and Molecular Biology of Plants. John Wiley & Sons, Inc. ISBN: 978-0-470-71421-8Lambers, H., Chapin, F. S. and Pons, T. L. (2011) Plant Physiological Ecology. Springer, New York. ISBN 0-387-98326-0 |
| **Competencies to be acquired, related to the course:** |
| **a) Knowledge:** * fundamental knowledge about several basic theories in plant physiology
* interaction between physiological processes
* how can the farmer modify, influence these processes

**b) Ability:*** critical thinking
* decision making

**c) Attitude:** * to be motivated to work hard

**d) Autonomy and responsibility:*** autonomy and responsibility in data discussion/presetation/evaluation
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| **Course leader** (name, post, academic degree): **Dr. Veres Szilvia, professor, PhD** |
| **Other lecturer(s) involved in teaching the course, if any** (name, post, academic degree): **-** |