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| Module name | **Methods of in vitro tissue culture** |
| Module code | B-BC.BE.220 |
| ISCED code | 0511: Biology |
| Study cycle | Iº |
| Semester | winter or summer semester |
| Responsible for this module  | mgr Kinga Lewtak, kinga.lewtak@gmail.com, +48 81 537 50 97 |
| Language of instruction | English |
| Website |  |
| Prerequisites | botany, plant physiology  |
| ECTS | 3,5 |
| ECTS points hour equivalents | Contact hours (work with an academic teacher) - 30 hrsTotal number of hours with an academic teacher – 45 hrsNumber of ECTS points with an academic teacher - 1,5Non-contact hours (students' own work) – 60 hrsTotal number of non-contact hours – 60 hrsNumber of ECTS points for non-contact hours – 2 **Total number of ECTS points for the module 3,5** |
| Educational outcomes verification methods | continuous assessment of laboratory  |
| Description | **The module covers the knowledge in the area of** Organization and equipment of the laboratory of plant cultures in vitro. Safety principles of work in sterile conditions. Stages of preparation of sterile media for plant propagation. Totipotency of plant cells, regeneration ability of plants from primary explants, processes of plant morphogenesis in vitro; hormonal orientation of development (direct and indirect organogenesis). Micropropagation methods. Introduction to basic plant in vitro tissue cultures (callus culture, plant organ and suspension cultures) and their use in plant biotechnology. |
| Reading list |  |
| Educational outcomes | **KNOWLEDGE*** Student knows the principles of directed culturing of plant cells and tissue using methods of in vitro culture;
* Student knows the principles of preparation of sterile media, proliferation of cell mass and carrying out different types of plant cultures in sterile conditions.

**SKILLS*** . Student has the ability of directed regeneration of plants from primary explants;
* Student is able to initiate and conduct cultures of plant organs, microspores, callus tissue, embryos;
* Student recognizes changes in plant tissue during in vitro culture.

**ATTITUDES*** Student understands the need of constant updating the knowledge and the possibility of its practical applications;
* Student sees social and ethical issues arising from the implementation of methods for plant tissue culture.
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| Practice |  |