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| **Title and Code** of the subject: **Environmental protection and ecotoxicology**  **Code: MTMNO7002A** | **ECTS Credit Points: 3** |
| **Type** of the subject: **compulsory** / optional | |
| **Ratio of theory and practice: 50/50** (credit%) | |
| **Type and number of classes per semester**: 14 hour(s) lecture and 14 hour(s) practice per **semester**  Number of teaching hours / week : 1+1 (lecture and practice) | |
| **Type of exam**: **oarl exam** / practical course mark | |
| **Subject in the curriculum:** semester 1. | |
| Preliminary requirements:- | |

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| **Summary of content – theory and practice**: |
| Course objectives:   1. Basics of toxicology, historical backgrounds, basic concepts. CSA 2. Global environmental problems. Role of pesticides in the contamination of soil, water and air and their effects to the living creatures. SZSZ 3. Bioaccumulation, biomagnification in organisms and biocoenosises. SZSZ 4. Usage of agrochemicals. CSA 5. Registration process of agrochemicals in the EU and Hungary. CSA 6. Categorization of pesticide active agens based on modes of action and their human toxicological problems. CSA 7. Acut toxicity. CSA 8. Chronic toxicity, toxins produced by phytopathogens. CSA 9. Basics of mutagenity, mutagenic pesticides SZSZ 10. Molecular fundaments of cancer developement, carcinogenic pesticides SZSZ 11. Basic concepts in teratology, teratogenic pesticides SZSZ 12. Hormone modulants. Basic concepts i immunology, immunemodulant pesticides. SZSZ 13. Genetically modified organisms in crop production. CSA 14. Ecotoxicological evaluation of GM organisms, their effects and hazards. CSA |
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| **Responsible lecturer: Dr. Erzsébet Karaffa** |

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| **Form of examination:** Oral examination |
| **Requirement(s) to get signature:** |
| The course will end with a presentation project work. This presentation must based on local ecotoxicological or human toxicological problems caused by the agribusiness. It needs to discuss possible solutions.  Means of preparation: notes from class and articles provided by the lecturer |