Academic course description

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| Bachelor**Ecology and Environmental Protection**3rd YEAR OF STUDY, 1ST SEMESTER |

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| **Course title** | **Ecological Monitoring** |
| Course code | B45 |
| Course type | full attendance |
| Course level | 1st cycle (bachelor) |
| Year of study, semester | 3rd year of study, 1st semester |
| Number of ECTS credits | 4 |
| Number of hours per week | 4 (2 lecture hours + 2 seminar hours) |
| Name of lecture holder | Mircea Nicoară |
| Name of seminar holder | Gabriel-Ionuț Plavan |
| Prerequisites | Advanced level of English  |
| A | **General and course-specific competences** |
|  | **General competences**:* Applying efficient and responsible work strategies, punctuality, seriousness and personal responsibility, based on the principles, norms and values of the code of professional ethics.
* Applying efficient work techniques in a multidisciplinary team on various hierarchical levels.
* Documentation for professional and personal development, through continuous training and efficient adaptation to new scientific discoveries
* **Course-specific competences**:
* Identify and use the main laws, notions and concepts specific to Ecology and environmental protection.
* Use of methods, instruments, apparatus and technologies for measurement and monitoring activities
* Identifying the optimal alternatives in order to properly characterize the environmental factors and develop measures to protect them.
* Use of specific applications for the processing, representation and storage of environmental data.
* Analysis and communication of scientific information.
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| B | **Learning outcomes** |
|  | * Ability to work with modern systems for collecting, storing and processing information about the quality of the natural environment and to provide the necessary scientific basis for developing forecasts of its evolution.
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| C | **Lecture content** |
|  | The environmentEnvironmental information managementThe object of environmental monitoringClassification of environmental monitoring activitiesInternational ecological monitoring programsIntegrated environmental quality monitoring system in Romania (S.M.I.R.)Monitoring of biosphere reserves (background level)Ecological riskModeling ecological systemsRegulating the quality of the natural environment |
| D | **Recommended reading for lectures** |
|  | 1. Anjaneyulu Y., Manickam V., 2007 – *Environmental Impact Assessment Methodologies*. Second Edition, BS Publications
2. Ciolpan O., 2005 – *Monitoringul integrat al sistemelor ecologice*, Ed. Ars Docendi, Bucureşti
3. Hill D., Fasham M., Tucher G., Shewry M., Shaw P., 2005 – Handbook of Biodiversity Methods. Survey, Evaluation and Monitoring, Cambridge University Press
4. Nicoară M., 2009 – *Monitoring ecologic*, Editura Tehnopress, Iaşi
5. Rapport D., Lasley W., Rolston D., Nielsen O.N., Qualset C.O., Damania A.B., 2003 – Managing for Healthy Ecosystems, Lewis Publisher
6. Spellerberg I.F., 2005 – Monitoring Ecological Change. Second Edition, Cambridge University Press
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| E | **Seminar content** |
|  | Environmental information managementEcological monitoring systems and techniquesUse of predictive and environmental quality control modelsMatrix modelingComputer aided imitation modelingApplied ecological monitoring ("target" ecosystem) |
| F | **Recommended reading for seminars** |
|  | 1. Ciolpan O., 2005 – *Monitoringul integrat al sistemelor ecologice*, Ed. Ars Docendi, Bucureşti
2. Hill D., Fasham M., Tucher G., Shewry M., Shaw P., 2005 – Handbook of Biodiversity Methods. Survey, Evaluation and Monitoring, Cambridge University Press
3. Nicoară M., 2009 – *Monitoring ecologic*, Editura Tehnopress, Iaşi
4. Nicoară M., Bomher E., 2004 - *Ghidul ariilor protejate din judeţul Iaşi*, S.C. Tipografia Moldova, Iaşi
5. Spellerberg I.F., 2005 – Monitoring Ecological Change. Second Edition, Cambridge University Press
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| G | **Education style** |
| learning and teaching methods | systematic exposure; conversation; didactic demonstration |
| assessment methods | Exam |
| Language of instruction | English |