

1.3. Module/ course form

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| To be completed by Course Team | Module name : Environmental Management and Ecology | | | | | Module code: | |
| | Course name: Environmental Management and Ecology | | | | | Course code: | |
| | Faculty: Institute of Technology | | | | | | |
| | Field of study: Mechanics and Machine Technology | | | | | | |
| | Mode of study : stationary | | Learning profile: practical | | | Speciality: | |
| | Year/ semester: | | Module/ course status: | | | Module/ course language: English | |
| | Type of classes | lecture | lessons | lab | project | tutorial | other (please specify) |
| | Course load | 15 | 15 | | | | |

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| Module/ course coordinator | Dr Agata Rychter |
| Lecturer | Dr Agata Rychter |
| Module/ course objectives | <p>The course introduces students to:</p> <ul style="list-style-type: none"> • basic ecology; • get to know the biological basis of environmental management and protection; • gather knowledge of legal, organizational, and social considerations of environmental protection, in agreement with the State Environmental Policy and the European Commission guidelines; • learn new, “green chemistry” technologies; • gather knowledge about business benefits of adopting a formalized environmental management system (EMS) include more efficient use of resources, lower risk of pollution and other liabilities, and better customer relations. |
| Entry requirements | |

| LEARNING OUTCOME | | |
|------------------|--|----------------------------|
| Nr | LEARNING OUTCOME DESCRIPTION | Learning outcome reference |
| 01 | Student understands the fundamental phenomenon and processes disturbing ecosystems which are the key ecosystem for the biosphere. | K_W01 |
| 02 | Student knows critical moments of the interaction between human civilization - development - natural conservation for future generations | K_W05 |

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| 03 | Student knows about environmental management system (EMS) and requirements of ISO 14001. | K_W08 |
| 04 | Student knows legal regulations and organizations | K_W11 |
| 05 | Student can apply the appropriate concepts from the scope of environmental management system (EMS) | K_U19 |
| 06 | Student takes into account the effects of human activity on biospheres during the planning of protected areas and responsibility for his decisions | K_K05 |

CURRICULUM CONTENTS

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| Lecture |
| <p>Life processes, interactions, and adaptations. The movement of materials and energy through living communities. The successional development of ecosystems. The abundance and distribution of organisms and biodiversity in the context of the environment. Diversity of ecosystems. The main ecosystems for the stable biosphere. Influences of human activity on the nature and the intensity of changes.</p> <p>The fundamental problems of habitat loss and fragmentation, habitat disturbance and the non-sustainable exploitation of species in both aquatic and terrestrial ecosystems.</p> <p>Specific environmental aspect, such as the use of energy or natural resources in institutions.</p> <p>Institutions benefits of environmental management system (EMS) implementation.</p> <p>Requirements of ISO 14001, implementation and benefits.</p> |
| Lessons I |
| <p>Project preparations on International Standard to implement an environmental management system (EMS) for small- /medium-sized enterprises. The rules of creating an enterprise's environmental policy.</p> |

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| Basic literature | <p>Pullin A., 2012, Conservation biology, Cambridge University Press</p> <p>ISO 14050:2009, Environmental management — Vocabulary</p> <p>BS 8555:2016, Environmental management systems — Phased implementation — Guide</p> <p>ISO 14031:2013, Environmental management — Environmental performance evaluation — Guidelines</p> <p>ISO Guide 72:2001, Guidelines for the justification and development of management system standards</p> |
| Additional literature | https://www.iso.org/obp/ui/#iso:std:iso:14005:dis:ed-2:v1:en |

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| Teaching methods | Lecture, presentation, student's debates, case studies, discussion. | |
| | Assessment method | Learning outcome number |
| | Assessment of presentation | 01,03, 06 |
| | Debat results | 02, 03, 05 |
| | Case analyses | 02, 05 |
| | Exam | 01, 04, 05 |
| Form and terms of an exam | Written exam | |

STUDENT WORKLOAD

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| | Number of hours |
| Participation in lectures | 15 |
| Independent study of lecture topics | 5 |

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| Participation in tutorials, labs, projects and seminars | 15 |
| Independent preparation for tutorials* | - |
| Preparation of projects/essays/etc.* | 10 |
| Preparation/ independent study for exams | 8 |
| Participation during consultation hours | 2 |
| Other | - |
| TOTAL student workload in hours | 55 |
| Number of ECTS credit per course unit | 2 |
| Number of ECTS credit associated with practical classes | 0,6 |
| Number of ECTS for classes that require direct participation of professors | 1,2 |