## 1.3. Module/ course form

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| To be completed by Course Team | Module name :  **THE BALTIC SEA ENVIRONMENT** | | | | | | Module code: | | |
| Course name:  **THE BALTIC SEA ENVIRONMENT** | | | | | | Course code: | | |
| Faculty:  **Institute of Technology** | | | | | | | | |
| Field of study:  **Environment Protection** | | | | | | | | |
| Mode of study :  stationary | | | Learning profile:  practical | | | Speciality:  Ecological Engineering | | |
| 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 | The course conveys general knowledge of the Baltic Sea environment, with a focus on the Baltic Sea itself, from the Bay of Bothnia in the north, over the Baltic proper to Kattegatt, and its drainage area. The focus is on the means and strategies for positive changes. It will give an overview of topics which are important for the understanding and improvement of the environmental situation of the Baltic Sea. It prepares the student to place environmental problems in their appropriate social context. It includes a background of the Baltic Sea region and its geography; the major environmental threats in the region; some aspects of environmental policy; Environmental management, especially water and solid waste management. It also presents a systematic, multidisciplinary study of the environmental situation in the Baltic Sea region with a focus on the Baltic Sea itself. |
| Entry requirements |  |

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| **LEARNING OUTCOME** | | |
| Nr | LEARNING OUTCOME DESCRIPTION | Learning outcome reference |
| 1 | Student knows the environmental situation in the Baltic Seas region, its threats in global and regional aspects with a focus on the Baltic Sea itself. | K\_W08 |
| 2 | Student knows some international documents of environmental protection and some aspects of environmental policy. | K\_W11 |
| 3 | Student uses English sufficiently to communicate, also in matters of professional and technical, can prepar and make a short presentation on the environmental tasks | K\_U05 |
| 4 | Students understands the need for life long learning | K\_K01 |

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| **CURRICULUM CONTENTS** |
| **Lecture** |
| How the world work geology and ecology – introducing the environmental studies / ternover the matter and energy / ecology and ecosystems  The course gives an interdisciplinary overwiev of the environmental situation in the area of the Baltic Sea, its physical and biological resources, human impacts, and management for the future.   * The Baltic Sea – nature, history, economy * Environmental impacts 1 -– eutofication and eir pollution (nitrogen and phosphorus - eutrophication / sulfhur and nitrogen – acidification / carbon – atmospheric change). * Environmental impacts 2 – chemical pollutions and toxic effects (chemical pollution – heavy metals and POP / tocsicology – impact of chemicals on life / eco-toxicology – how ecosystems are effected). * Policy instruments for protecting the Baltic Sea environmental – environmental low / international cooperation on the BS / behavior and ethics. * Strategies ad technologies for managing the Baltic Sea environment – technologies – wastewater treatment and waste management / environmental management tools |
| Tutorial |
| The students are given the tasks of making small presentation. These presentations can be made using the material in the book *Environmental science* |

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| Basic literature | Ryden L., Migula P., Andersson M.,2003, Environmental science , the Baltic University Press, Uppsala, ISBN 91-970017-0-8.  The following chapters of the textbook Environmental Science are included in the basic Reading list: The Baltic Sea region (Chapter 4); The Baltic Sea (Chapter 5); Life in the Baltic Sea (Chapter 6); Eutrophication (Chapter 9); Atmospheric changes and Air pollution (parts of Chapter 10 and Chapter 11); Metal flows and Industrial pollutants (parts of Chapter 12 and Chapter 13); Toxicology (Chapter 14); Distribution, interaction and longevity of environmental impast (Chapter 15). Ecological economics (parts of Chapter 19); Environmental Law (Chapter 20); and International cooperation (parts of Chapter 23). Water and solid waste management (Chapter 17 and parts of Chapter 18) and Environmental management (parts of Chapter 24). |
| Additional literature | 10 booklets about The Baltic Sea Environment – an earlier, shorter version of the textbook. |

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| Teaching methods | | Lectures, active participation in seminars where literature and internet material are analysed. | |
| Assessment method | | | Learning outcome number |
| Assessment of the presentation | | | K\_U05, K\_K01 |
| Written exam | | | K\_W08, K\_W11 |
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| Form and terms of an exam | Written exam.  The students will be awarded an international diploma issued by the Baltic University Programme Secretariat at Uppsala University, Sweden. | | |

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| **STUDENT WORKLOAD** | |
|  | Number of hours |
| Participation in lectures | 15 |
| Independent study of lecture topics | 20 |
| Participation in tutorials, labs, projects and seminars | 15 |
| Independent preparation for tutorials\* | 20 |
| Preparation of projects/essays/etc. \* |  |
| Preparation/ independent study for exams | 22 |
| Participation during consultation hours | 2 |
| Other |  |
| **TOTAL student workload in hours** | 94 |
| **Number of ECTS credit per course unit** | **4** |
| Number of ECTS credit associated with practical classes | **1,4** |
| Number of ECTS for classes that require direct participation of professors | **1,3** |