**COURSE GUIDE – short form**

Academic year 2014-2015

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| Course name[[1]](#endnote-1) | **ENERGY AUDITS** | | | | | Course code | | | IM.414.DO.DS-2 | |
| Course type[[2]](#endnote-2) | DS | Category[[3]](#endnote-3) | DO | Year of study | 4 | Semester | 7 | Number of credit points | | 4 |

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| Faculty | Mechanical Engineering | Number of teaching and learning hours[[4]](#endnote-4) | | | | | |
| Field | Mechanical Engineering | Total | L | T | LB | P | IS |
| Specialization | Mechanical Engineering | 42 | 28 | - | - | 14 | 14 |

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| Pre-requisites from the curriculum[[5]](#endnote-5) | Compulsory | Engineering Thermodynamics and Thermal Equipment |
| Recommended | Heat Transfer |

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| General objective [[6]](#endnote-6) | Students should acquire knowledge regarding thermal phenomena and shold learn how to apply this knowledge when performing energy audits upon thermal systems and equipment . |
| Specific objectives[[7]](#endnote-7) | * cquire knowledge regarding thermal systems analysis in terms of energy interactions and performance;4) familiarize students to perform energy balances and audits on the basis of available data acquired from usual thermal systems and heat engines. * create basic abilities in performing energy balance and in data interpretation; * acquire knowledge regarding:   - energy balance methods;  - energy saving and implementing energy saving methods  - ways to improve thermodynamic efficiency of machines and thermal equipment and systems. |
| Course description[[8]](#endnote-8) | 1. Basics  Forms of energy. Energy generation and use. Energy efficiency. Energy audit and energy balance: definitions. Energy management. The National Authority for Energy Regulation.  2. Energy balance  Basics. Definitions. Main types of energy balances. General principles of energy balance performing. Assessment of the energy efficiency of energy-consuming processes.  3. Energy strategies  Basics. Organization structure. Energy policies.Planning.  4. Energy audit  Basics. Energy audits types. Preliminary audit. Phases of the complete energy audit and its flowchart. Tools used in energy audits. The audit report. |

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| Assessment | | | Schedule[[9]](#endnote-9) | Percentage of the final grade (minimum grade)[[10]](#endnote-10) |
| Continuous assessment | Class tests along the semester | |  | % |
| Activity during tutorials/laboratory works/projects/practical work | |  | 50% |
| Assignments | |  | % |
| Final assessment | Final assessment form[[11]](#endnote-11) | Colloquium | Week 14 | 50% |
| Examination procedures and conditions:  1. ; Subject development ; written ; 50 %  2. ; Subject development ; written ; 50 % | | |

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| Course organizer | Professor Bogdan Horbaniuc |  |
| Teaching assistants | Assistant professor Marius Atanasiu |  |

1. Course name from the curriculum [↑](#endnote-ref-1)
2. DF – fundamental, DID – in the field, DS – specialty, DC – complementary (from the curriculum) [↑](#endnote-ref-2)
3. DI – imposed, DO –optional, DL – facultative (from the curriculum) [↑](#endnote-ref-3)
4. Points 3.8, 3.5, 3.6a,b,c, 3.7 from the Course guide – extended form (L-lecture, T-tutorial, LB-laboratory works, P-project, IS-individual study) [↑](#endnote-ref-4)
5. According to 4.1 – Pre-requisites - from the Course guide – extended form [↑](#endnote-ref-5)
6. According to 7.1 from the Course guide – extended form [↑](#endnote-ref-6)
7. According to 7.2 from the Course guide – extended form [↑](#endnote-ref-7)
8. Short description of the course, according to point 8 from the Course guide – extended form [↑](#endnote-ref-8)
9. For continuous assessment: weeks 1 – 14, for final assessment – colloquium: week 14, for final assessment-exam: exam period [↑](#endnote-ref-9)
10. A minimum grade might be imposed for some assessment stages [↑](#endnote-ref-10)
11. Exam or colloquium [↑](#endnote-ref-11)