**Course Syllabus**

Academic year: 2020-2021

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| Institution | University of Petroşani |
| Faculty | Mechanical and Electrical Engineering |
| Field of study | Mechanical Engineering |
| Level | Master |
| Program of study | Computer Aided Design and Manufacturing |

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| Course | **Computer-Assisted Experimental Research** |
| Code | 2CFACXS13 |
| Year of study (semester) | II (III) |
| Number of hours | 84 |
| Number of credits | 7 |
| Professor | Assoc. Prof., Ph.D. DOSA Ion |

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| **No.** | **Topic** |
|  | Getting started. Industrial processes. Types of representation for industrial processes. |
|  | Description of some industrial processes. Energy efficiency indicators. Indicators of economic efficiency. |
|  | Industrial process modeling using software for engineering calculations. Input data. Output data. Characteristics of energy efficiency. |
|  | Experimental research of industrial processes in industrial furnaces. |
|  | Experimental research of industrial processes in blowers, compressors and vacuum pumps. |
|  | Experimental research of industrial processes in pumps and fans. |
|  | Experimental research of industrial processes in hot water and steam boilers |
|  | Experimental research of processes within the air conditioning installations. |
|  | Experimental research of industrial processes in air cooling installations. |
|  | Experimental research of industrial processes in heat treatment enclosures. |
|  | Experimental research of industrial processes within district heating installations and network components. |
|  | Experimental research of the processes within the autoclaved aerated concrete production installations (Autoclave). |
|  | Experimental research of processes within the internal combustion engines using software for engineering calculations. |
|  | Representation and simulation of energy processes using software for engineering calculations. |