**Course Syllabus**

Academic year: 2020-2021

|  |  |
| --- | --- |
| Institution | University of Petroşani |
| Faculty | Mechanical and Electric Engineering  |
| Field of study | Electrical Engineering |
| Level | Master |
| Program of study | Electromechanical Systems |

|  |  |
| --- | --- |
| Course | **Numerical Methods in Electrical Engineering and Computer Aided Design with Finite Element in Electromechanical Systems** |
| Code | 2MSEOS02  |
| Year of study (semester) | I (I) |
| Number of hours | 84 |
| Number of credits | 7 |
| Professor | Professor Dr. Letitia-Susana ARAD |

|  |  |
| --- | --- |
| **No.** | **Topic** |
|  | Solving systems of nonlinear equations. |
|  | Numerical approximation of functions |
|  | Solving differential equations with initial conditions and systems of differential equations. |
|  | Solving the Laplace equation with the finite difference method and the finite element method |
|  | Numerical methods and algorithms for solving the integral and differential mathematical model of the electromagnetic field |
|  | Modeling of electromechanical system with finite elements using dedicated software |
|  | Applications using Visual Electromagnetics for MathCad v1.0 and QuickField or Flux2D software. |