**Course Syllabus**

Academic year: 2020-2021

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| Institution | University of Petroşani |
| Faculty | Mechanical and Electric Engineering  |
| Field of study | Electrical Engineering |
| Level | Master |
| Program of study | Operation of Industrial Electrical Installations |

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| Course | **Reliability and Controllability of Distribution Grid** |
| Code | 2MEIEIAD14 |
| Year of study (semester) | II(I) |
| Number of hours | 70 |
| Number of credits | 6 |
| Professor | Professor Ph.D. Ion FOTĂU |

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| **No.** | **Topic** |
|  | Definitions of controllability and reliability. The importance of reliability studies in electrical systems. The relationship between cost and reliability. The general way of ensuring reliability. |
|  | Quality indicators of electricity (voltage variations, frequency variations, current and voltage wave distortion, asymmetry of three-phase voltage and current systems, service continuity), their effects on consumers, means of control. |
|  | The condition of an electrical element, system or scheme; reliability indicators; the law of large numbers; Marcov-type stochastic processes; calculation of safety indicators for the simple repairable element; reliability of systems with series and parallel elements; reliability of electrical diagrams with spare elements and without spare elements; number and duration of interruptions; equivalent failure and repair intensities; calculation of safety indicators by the binomial method; the link between reliability and economic efficiency. |