**Course Syllabus**

Academic year: 2020-2021

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| Institution | University of Petroşani |
| Faculty | Mechanical and Electrical Engineering |
| Field of study | Systems Engineering |
| Level | Bachelor |
| Program of study | Automation and Applied Informatics |

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| Course | **Electrical Machines and Drives**  |
| Code | 2SA2OD09 |
| Year of study (semester) | I (II) |
| Number of hours | 70 |
| Number of credits | 5 |
| Professor | Assoc. Prof., Ph.D. UȚU Ilie |

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| **No.** | **Topic** |
|  | Construction and nominal data of the transformer. Principle of operation and phase transformer equations; The blank, short-circuit and discharge operation load. Transformer secondary voltage variation; |
|  | Three phase Transformers (construction, connections, wiring diagrams and groups). Coupling and parallel operation of transformers; |
|  | Architectural data nominal machine current. Principle of operation. The electromagnetic torque developed by the DC machine; Starting, braking and speed control of DC motors; |
|  | Architectural nominal machine current data asynchronously. Principle of operation. Asynchronous machine developed electromagnetic torque and mechanical characteristics; Starting, speed control and braking asynchronous motors |
|  | Element, nominal data and operating principle of the synchronous machine. Power and electromagnetic torque |
|  | Coupling and Parallel operation of synchronous generators, distribution of powers. |
|  | Operating characteristics and methods of starting synchronous motor. Synchronous compensator. |