**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 | **Data Transmission** |
| Code | 2SA8OS56 |
| Year of study (semester) | IV (II) |
| Number of hours | 56 |
| Number of credits | 4 |
| Professor | Lecturer, Ph.D. Riurean Simona |

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| **No.** | **Topic** |
| 1 | Introduction and Overview  |
| 2 | Data encoding and transmission concepts.  |
| 3 | Digital data transmission over digital signal. NRZ encoding; Multilevel binary encodings; Biphase encodings; Scrambling techniques |
| 4 | Digital data transmission over analog signal. Public telephone system; Amplitude Shift Keying (ASK); Frequency Shift Keying (FSK); Phase Shift Keying (PSK); Performance of digital to analog modulation schemes; Quadrature Amplitude Modulation (QAM) |
| 5 | Analog data transmission over digital signal. Digitization; Pulse Code Modulation; Non-linear encoding; Delta modulation |
| 6 | Analog data transmission over analog signal. Asynchronous transmission o Synchronous transmission o Ethernet link layer frame example |
| 7 | Recap and exam preparation |