| FACULTY: | Faculty of Electronics and Computer Science |
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| FIELD OF STUDY: | Electronics and Telecommunications |
| ERASMUS COORDINATOR OF THE FACULTY: | Marcin Walczak, PhD (Electronics)  Robert Wirski, PhD (Computer Science) |
| E-MAIL ADDRESS OF THE COORDINATOR: | marcin.walczak@tu.koszalin.pl  robert.wirski@tu.koszalin.pl |
| COURSE TITLE: | Fundamentals of Telecommunication |
| LECTURER’S NAME: | Katarzyna Jagodzińska, PhD |
| E-MAIL ADDRESS OF THE LECTURER: | katarzyna.jagodzinska@tu.koszalin.pl |
| ECTS POINTS FOR THE COURSE: | 4 |
| COURSE CODE (USOS): | 0711>0400-PT |
| ACADEMIC YEAR: | 2022/2023 |
| SEMESTER:  (W – winter, S – summer) | S |
| HOURS IN SEMESTER: | 45 |
| LEVEL OF THE COURSE:  (1st cycle, 2nd cycle, 3rd cycle) | 1st cycle |
| TEACHING METHOD:  (lecture, laboratory, group tutorials, seminar, other-what type?) | Lecture – 30h  group tutorials – 15h |
| LANGUAGE OF INSTRUCTION: | English\* |
| ASSESSMENT METHOD:  (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?) | Group tutorials: continuous assessment  Lecture: on-line test |
| COURSE CONTENT: | 1. The concept of signal and methods of analysis -definition and types of signals 2. The concept of modulation and detection  * the purpose and the reason of modulation * modulation process and modulation types * detection process * concept of analytical signal * mathematical model of a narrowband signal  1. Amplitude Modulation   • the AM concept  • modulation factor and percentage of modulation  • the power of AM modulation   * Analysis of AM wave - carrier wave and sideband frequencies, equation of AM wave * Frequency-Domain representation of AM   • AM signal generation  • signal demodulation AM  • single-sideband modulation and demodulation of amplitude (SSB, SSB-SC)  • modulation with partially attenuated sideband (VSB)   * limitations of AM  1. Frequency Modulation  * equation of FM wave * modulation index and bandwidth of modulated signal * FM signal generation * FM receiver  1. Digital modulation  * Converting analog signal to digital signal * Nyquist theorem * ASK, FSK, PSK modulation * BASK, BFSK, BPSK modulation * Quadrature modulation   PCM modulation |
| ADDITIONAL INFORMATION: | Requirements: complex number, integration and differentiation |

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\*kurs dostępny wyłącznie w języku angielskim