



Subject card

| | | | | | | | |
|---|--|---|----------|-------------------------------------|---|------------|-----|
| Subject name and code | Circuits and Signals - laboratory, PG_00047566 | | | | | | |
| Field of study | Automatic Control, Cybernetics and Robotics | | | | | | |
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | | | 2022/2023 | | |
| Education level | first-cycle studies | Subject group | | | Obligatory subject group in the field of study | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 2 | Language of instruction | | | Polish | | |
| Semester of study | 3 | ECTS credits | | | 1.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Department of Marine Electronic Systems -> Faculty of Electronics, Telecommunications and Informatics | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Czesław Stefański | | | | | |
| | Teachers | dr inż. Czesław Stefański | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 0.0 | 15.0 | 0.0 | 0.0 | 15 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 15 | | 1.0 | | 9.0 | 25 |
| Subject objectives | Equipping a student with knowledge and skills acquired in studying the basics of analogue circuits and signals. The knowledge is sought to be useful in further professional studies and practice. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [K6_W05] Knows and understands, to an advanced extent, methods of supporting processes and functions, specific to the field of study | Student - measures parameters of electrical components and circuits, - uses Fourier series to analyze circuits stimulated by periodic waveforms, - uses computer programs to analyze circuits | | | [SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects | | |
| | [K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices | Student - designs simple systems (dividers, attenuators, filters, inverting and non-inverting amplifiers, etc.), - linearizes non-linear elements, - uses computer programs for circuit analysis and design | | | [SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects | | |
| Subject contents | Periodic signal spectrum. Spectrum modification by passing a periodic signal through a linear and nonlinear circuit. Transmission long delay-line. Attenuator. Resonant circuit. Nonlinear circuit. Passive lowpass Butterworth, Chebyshev and Bessel filters, and active filters. Time-domain and frequency domain characteristics. | | | | | | |
| Prerequisites and co-requisites | No requirements | | | | | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | | | Percentage of the final grade | | |
| | Reports | 51.0% | | | 60.0% | | |
| | Midterm short tests | 51.0% | | | 40.0% | | |
| Recommended reading | Basic literature | J. Osiowski i J. Szabat: Podstawy teorii obwodów, tomy I-III. WNT Warszawa 1993 (tom I i tom II) i 1995 (tom III) i wydania kolejne. | | | | | |
| | Supplementary literature | No requirements | | | | | |
| | eResources addresses | Adresy na platformie eNauczenie: | | | | | |

| | |
|--|----------------|
| Example issues/ example questions/ tasks being completed | |
| Work placement | Not applicable |