



Subject card

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|---|---|--|---|-------------------------------------|--|------------|-----|
| Subject name and code | , PG_00056312 | | | | | | |
| Field of study | Ocean Engineering | | | | | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | | | 2024/2025 | | |
| Education level | first-cycle studies | Subject group | | | | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 3 | Language of instruction | | | Polish | | |
| Semester of study | 5 | ECTS credits | | | 4.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. inż. Marek Dzida | | | | |
| | Teachers | | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 30.0 | 15.0 | 0.0 | 0.0 | 0.0 | 45 |
| | 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 | 45 | | 6.0 | | 49.0 | 100 |
| Subject objectives | The objective is to learn the fundamentals of control theory and the structures and elements of basic automation systems, as well as general information about control system design. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | [K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of ocean technology objects and systems | | Able to formulate a simple task, and its specification engineering of automation of technological process | | [SU3] Assessment of ability to use knowledge gained from the subject | | |
| | [K6_W04] has a basic knowledge in IT, electronics, automation and control, computer graphics useful to understand the possibilities of their application in ocean technology | | The student has the knowledge of methods and tools applied for design of control system | | [SW1] Assessment of factual knowledge | | |
| | [K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems | | The student is able to assess usefulness of typical methods and tools applied in engineering to select the proper method and tool for solving the simple problems | | [SW3] Assessment of knowledge contained in written work and projects | | |

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| Subject contents | 1. Introduction and basic concepts 2. Classification of control systems 3. Modeling of dynamic systems and description of elements of automatic control systems 4. Types of mathematical models of dynamic systems: differential equation, transmittance, block diagram, linearization 5. Transition function and time characteristics 6. Feedback 7. Analysis of time-domain and frequency-domain control systems 8. Stability of linear control systems 9. Controls | | |
| Prerequisites and co-requisites | Pre-requisite subjects: 1. Mathematics 2. Physics | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | Colloquium for credit from exercises | 50.0% | 40.0% |
| | Colloquium for credit from lecture | 50.0% | 60.0% |
| Recommended reading | Basic literature | 1. Raven, F. H., Automatic control engineering, McGraw Hill Co., 1986. 2. Nise N. S., Control system engineering, John Wiley & Sons Inc., 2000. 3. Friedland B., Control System Design, McGraw Hill Co., 1986. | |
| | Supplementary literature | 1.. Ogata K., Modern Control Engineering, 4th edition, Prentice Hall, 2002. | |
| | eResources addresses | Adresy na platformie eNauczanie: | |
| Example issues/ example questions/ tasks being completed | | | |
| Work placement | Not applicable | | |