



Subject card

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| Subject name and code | , PG_00056084 | | | | | | |
| Field of study | Mechanical and Medical Engineering | | | | | | |
| Date of commencement of studies | October 2023 | Academic year of realisation of subject | | | 2025/2026 | | |
| 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 | | | 1.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. inż. Marek Galewski | | | | |
| | Teachers | | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 10.0 | 0.0 | 5.0 | 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 | | 0.0 | | 0.0 | 15 |
| Subject objectives | Presenting students essential information about applications of microprocessors in medicine | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [K6_U08] he/she is able to assess whether proposed methods and tools can be used in practice to solve simple engineering task related to machine design, manufacturing and utilization | Student selects elements needed to develop a simple embedded system for medical applications | | | [SU5] Assessment of ability to present the results of task | | |
| | [K6_U06] he/she has skills to work in industry and follow the rules of safety regulations, he/she is able to analyze basic economics problems to delineate the direction of solution by using engineering methods | Student understands requirements and constraints applied on medical electronic systems | | | [SU3] Assessment of ability to use knowledge gained from the subject | | |
| | [K6_W07] he/she is able to design, manufacture and utilize machine parts and technical devices, he/she can prepare a technical documentation | Student describes the process of design and manufacturing of embedded system | | | [SW1] Assessment of factual knowledge | | |
| | [K6_W13] he/she has knowledge related to application of engineering approaches in medicine or application of medical devices and rehabilitation devices | Student describes selected elements of the architecture of MCU based embedded systems | | | [SW1] Assessment of factual knowledge | | |
| Subject contents | principles of operation of processors - microcontroller units; essentials elements of microprocessor systems embedded systems (with special accent on it's medical applications); design and manufacturing of embedded systems | | | | | | |

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| Prerequisites and co-requisites | | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | Written test | 55.0% | 60.0% |
| | Performing exercises during laboratory classes | 55.0% | 40.0% |
| Recommended reading | Basic literature | Galewski M. STM32. Aplikacje i ćwiczenia w języku C z biblioteką HAL, BTC, Legionowo, 2019 | |
| | Supplementary literature | Kurczyk A. Mikrokontrolery STM32 dla początkujących. BTC, Legionowo 2019 | |
| | eResources addresses | Adresy na platformie eNauczanie: | |
| Example issues/ example questions/ tasks being completed | List of exemplary questions will be presented before the end of the semester - at least 4 weeks ahead of the final test | | |
| Work placement | Not applicable | | |