



Subject card

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|---|--|---|----------|-------------------------------------|---|--|-----|
| Subject name and code | Mobile applications programming , PG_00060230 | | | | | | |
| Field of study | Technical Physics | | | | | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | | | | 2028/2029 | |
| Education level | first-cycle studies | Subject group | | | | Optional subject group Subject group related to scientific research in the field of study | |
| Mode of study | Full-time studies | Mode of delivery | | | | at the university | |
| Year of study | 3 | Language of instruction | | | | Polish | |
| Semester of study | 6 | ECTS credits | | | | 3.0 | |
| Learning profile | general academic profile | Assessment form | | | | assessment | |
| Conducting unit | Department of Theoretical Physics and Quantum Computing -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Paweł Syty | | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 30.0 | 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 | | 5.0 | | 25.0 | 75 |
| Subject objectives | The aim of the course is to acquaint students with methods of creating mobile applications for Android system. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [K6_W05] has knowledge of programming methodologies and techniques, as well as the use of selected IT tools in physics and engineering. | The student has knowledge related to methods, tools, and languages for programming mobile applications and is able to apply them in practice. | | | [SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects | | |
| | [K6_U05] is able, individually or in a team, to design and construct simple devices, measuring instruments or technical systems using appropriately selected methods, techniques, tools and materials. | The student is able to set up their own working environment, create a technical design and implement a mobile application. | | | [SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools | | |
| | [K6_U02] is able to analyse and solve complex and non-standard scientific and technical problems using appropriate analytical, computational, numerical, simulation or experimental methods. | The student is able to apply their knowledge to develop a mobile application on a chosen topic, particularly one related to a specific technical issue. | | | [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment | | |

| Subject contents | <p>Course content – lecture</p> <ol style="list-style-type: none"> 1. Preliminary issues. Overview of operating systems (Android, iOS, Windows Phone/10, Symbian), intended for mobile devices. 2. General overview and presentation system. System architecture. The Kotlin programming language. 3. The development environment. Emulator system. ADB. 9. The process of application development. The first application. 4. Anatomy of applications. The use of the manifesto. 5. Resource management applications. Preparing applications in different languages and for different hardware configurations (tablets, smartphones, etc.). 6. User interface design. 7. Working with the SQLite database. 8. The use of notification, sound and vibration. Creating widgets. 9. Dissemination applications. 10. Discussion of sample applications. <p>Course content – laboratory</p> <p>Familiarization with the programming environment (Android Studio). Selection of applications for implementation. Application design. Application implementation. Testing and evaluation of applications. Presentation of the code and functionality of the completed application.</p> | | | | | | | | | | | |
|--|---|-------------------------------|--|--------------------------|--|-------------------------------|---|---|-------|-----------------------------|-------|-------|
| Prerequisites and co-requisites | The ability to object-oriented programming. | | | | | | | | | | | |
| Assessment methods and criteria | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Subject passing criteria</th> <th style="width: 30%;">Passing threshold</th> <th style="width: 30%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Evaluation of the work in the classroom</td> <td>50.0%</td> <td>50.0%</td> </tr> <tr> <td>Evaluation of final project</td> <td>50.0%</td> <td>50.0%</td> </tr> </tbody> </table> | | | Subject passing criteria | Passing threshold | Percentage of the final grade | Evaluation of the work in the classroom | 50.0% | 50.0% | Evaluation of final project | 50.0% | 50.0% |
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| Evaluation of the work in the classroom | 50.0% | 50.0% | | | | | | | | | | |
| Evaluation of final project | 50.0% | 50.0% | | | | | | | | | | |
| Recommended reading | <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 40%;">Basic literature</td> <td colspan="2" data-bbox="799 710 1487 792">Myles Bennett, Scalable Android Applications in Kotlin, BPB Publications 2024 Mounir Boussetta, Building Kotlin Applications, BPB Publications 2023</td> </tr> <tr> <td>Supplementary literature</td> <td colspan="2" data-bbox="799 799 1487 824">J. Horton, "Learning JAVA by Building Android Games", PACKT, 2015</td> </tr> <tr> <td>eResources addresses</td> <td colspan="2" data-bbox="799 831 1487 860"></td> </tr> </tbody> </table> | | | Basic literature | Myles Bennett, Scalable Android Applications in Kotlin, BPB Publications 2024 Mounir Boussetta, Building Kotlin Applications, BPB Publications 2023 | | Supplementary literature | J. Horton, "Learning JAVA by Building Android Games", PACKT, 2015 | | eResources addresses | | |
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| Example issues/ example questions/ tasks being completed | <p>Lecture: Discuss the notification system in mobile applications.</p> <p>Laboratory: Create a mobile application that performs simple mathematical/simulation/technical tasks.</p> | | | | | | | | | | | |
| Practical activities within the subject | Not applicable | | | | | | | | | | | |

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