



## Subject card

|   |  |  |   |                                     |  |            |     |
|---|--|--|---|-------------------------------------|--|------------|-----|
| Subject name and code                       | Multimedia Technology, PG_00047919   |  |   |                                     |  |            |     |
| Field of study                              | Electronics and Telecommunications   |  |   |                                     |  |            |     |
| Date of commencement of studies             | October 2025   |  | Academic year of realisation of subject   |                                     | 2026/2027  |            |     |
| Education level                             | first-cycle studies  |  | Subject group   |                                     | Obligatory subject group in the field of study<br>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                               | 2  |  | Language of instruction   |                                     | Polish   |            |     |
| Semester of study                           | 4  |  | ECTS credits  |                                     | 3.0  |            |     |
| Learning profile                            | general academic profile   |  | Assessment form   |                                     | assessment   |            |     |
| Conducting unit                             | Department Of Multimedia Systems -> Faculty Of Electronics Telecommunications And Informatics -> Wydział Politechniki Gdańskiej  |  |   |                                     |  |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor   |  | dr inż. Piotr Ody   |                                     |  |            |     |
|   | Teachers   |  | dr inż. Piotr Ody   |                                     |  |            |     |
| Lesson types and methods of instruction     | 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   |   | 3.0                                 |  | 27.0       | 75  |
| Subject objectives                          | The aim is to familiarize students with the multimedia data procesing and transmission.  |  |   |                                     |  |            |     |
| Learning outcomes                           | Course outcome   |  | Subject outcome   |                                     | Method of verification   |            |     |
|   | [K6_W03] knows and understands, to an advanced extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum   |  | The student can propose solutions for multimodal interfaces.<br>The student describes stages of image, sound and video compression. |                                     | [SW1] Assessment of factual knowledge<br>[SW3] Assessment of knowledge contained in written work and projects        |            |     |
| Subject contents                            | 1. Introduction. History of multimedia communication development.<br>2. Multimedia content types and elements.<br>3. Computer graphics fundamentals raster and vector images<br>4. Audio, video, and multimedia content formats<br>5. Fundamentals of audio, image & video compression<br>6. Multimedia transport protocols. Multimedia services.<br>7. Multimedia content distribution.<br>8. Multimedia studio and broadcasting center.<br>9. Multimedia databases. Querying, navigating, browsing of multimedia database content<br>10. Image rendering<br>11. Animation of computer graphic<br>12. Multimodal interfaces<br>13. Stereoscopy, holography, Virtual Reality<br>14. Future development trends.<br>15. Lecture recapitulation and students' progress checking |  |   |                                     |  |            |     |
| Prerequisites and co-requisites             | No requirements  |  |   |                                     |  |            |     |
| Assessment methods and criteria             | Subject passing criteria   |  | Passing threshold   |                                     | Percentage of the final grade  |            |     |
|   | Practical exercise   |  | 51.0%   |                                     | 50.0%  |            |     |
|   | Final test   |  | 51.0%   |                                     | 50.0%  |            |     |

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| Recommended reading  | Basic literature         | Alicja Wieczorkowska: Multimedia. Podstawy teoretyczne i zastosowania praktyczne., PJWSTK, ISBN: 978-83-89244-67-3, 2008, Kategorie: Informatyka, Multimedia, 336 stron<br>Anna Korzyńska, Małgorzata Przytułska: Przetwarzanie obrazów. Ćwiczenia., PJWSTK, 2006, ISBN: 978-83-89244-37-6, Kategorie: Informatyka, Multimedia, Zawiera CD, 110 stron<br>Andrzej Czyżewski: Dźwięk cyfrowy. Wybrane zagadnienia teoretyczne, technologia, zastosowania., Exit, 2001, ISBN: 978-83-87674-08-3, Kategorie: Informatyka, Multimedia, Dźwięk cyfrowy, 552 strony, format B5<br>Jean-Philippe Thiran, Ferran Marques, Harve Boulard, Multimodal Signal Processing, Academic Press, 2010.<br>Nigel Chapman, Jenny Chapman, Digital Multimedia, Wiley, 2009.<br>Parag Havaladar, Gerard Medioni, Multimedia Systems, Course Technology, 2010. |
|  | Supplementary literature | No requirements  |
|  | eResources addresses     | Adresy na platformie eNauczanie:   |
| Example issues/<br>example questions/<br>tasks being completed |                          |  |
| Work placement   | Not applicable           |  |

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