# GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

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| **Subject name and code** | Telecommunication Services Design, PG_00048155 |
| **Field of study** | Electronics and Telecommunications |

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| **Date of commencement of studies** | October 2022 | **Academic year of realisation of subject** | 2025/2026 |
| **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** | 4 | **Language of instruction** | Polish |
| **Semester of study** | 7 | **ECTS credits** | 2.0 |
| **Learning profile** | general academic profile | **Assessment form** | assessment |

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| **Conducting unit** | Department of Teleinformation Networks -> Faculty of Electronics, Telecommunications and Informatics |

| **Name and surname of lecturer (lecturers)** | Subject supervisor | dr inż. Marcin Narloch |
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| | Teachers | dr inż. Marcin Narloch |

| **Lesson types and methods of instruction** | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 15.0 | 0.0 | 0.0 | 15.0 | 0.0 | 30 |
| | 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 | 30 | 2.0 | 18.0 | 50 |

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| **Subject objectives** | The goal of the subject is to provide students knowledge about design of telecommunication services. |

| **Learning outcomes** | Course outcome | Subject outcome | Method of verification |
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| | [K6_W35] Knows the concepts of the technique of signal transmission, operation of telecommunications networks and multimedia services and the rules for providing them | Student describe possibilities of new service creation with the aid of information and telecommunication technologies for converged networks. Student masters the creation of information services with the aid of various APIs. Student learns usage of tools for the creation of information services. | [SW1] Assessment of factual knowledge |
| | [K6_U31] can identify telecommunications network architectures, differentiates their areas and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements | Student makes exemplary application presenting obtained knowledge and skills regarding creation of information services. | [SU4] Assessment of ability to use methods and tools |

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| **Subject contents** | 1. Creation of new services in terms of network, technology, information and telecommunication services convergence 2. Intelligent network services 3. Realization of teleservices as an applications in the context of pro-gramming interfaces standardization 4. Client-server model for design of services in information networks 5. Programming of network communication with socket interface 6. Standards of Application Programming Interface (API) for telecommu-nication services design 7. Common ISDN API (CAPI) for designing services in ISDN network 8. Telephony Application Programming Interface (TAPI) in MS Windows as an universal interface for designing services 9. TAPI architecture 10. Basic interfaces and functions offered by TAPI objects 11. Realization of TAPI application with structural C API 12. Realization of TAPI application with Component Object Model (COM) API 13. Realization of TAPI application with Java language (Java TAPI) 14. Multimedia services – cooperation of TAPI and Media API 15. Interaction of TAPI with voice and video group conference applications 16. Real-time Communications (RTC) Client API in MS Windows as an interface for IP communication services design 17. Extension of service capabilities by inclusion of text messages – Mail API (MAPI), voice – Speech API (SAPI) 18. Realization of Interactive Voice Response (IVR) and Voice Mail services 19. Realization of Call Centers 20. Exemplary TAPI application |
| **Prerequisites and co-requisites** | No requirements |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
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| | Midterm colloquium | 50.0% | 50.0% |
| | Project | 50.0% | 50.0% |

| Recommended reading | Basic literature | Material prepared by the lecturer in the form of xeroxcopy. |
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| | Supplementary literature | 1. Amundsen M. C., MAPI, SAPI and TAPI Developers Guide, Sams Publishing, 1996. 2. Chris Sells, Windows Telephony Programming: A Developer"s Guide To Tapi, Addison-wesley Professional, 1999. 3. Roberts S., Essential JTAPI: Java Telephony API. Design Telecom Projects with Java, Prentice Hall PTR, 1999. |
| | eResources addresses | Adresy na platformie eNauczanie: |

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

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