

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                            |                                                          |                                         |                                     |                                                                                                                      |            |     |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Sustainable Computerization of Businesses, PG_00156485                                                                                                                                                                                                                                                                                     |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Field of study                              | Informatics and Econometrics                                                                                                                                                                                                                                                                                                               |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Date of commencement of studies             | October 2024                                                                                                                                                                                                                                                                                                                               |                                                          | Academic year of realisation of subject |                                     | 2024/2025                                                                                                            |            |     |
| Education level                             | Master's 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                               | 1                                                                                                                                                                                                                                                                                                                                          |                                                          | Language of instruction                 |                                     | Polish<br>polish                                                                                                     |            |     |
| Semester of study                           | 1                                                                                                                                                                                                                                                                                                                                          |                                                          | ECTS credits                            |                                     | 5.0                                                                                                                  |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                                                                   |                                                          | Assessment form                         |                                     | credit                                                                                                               |            |     |
| Conducting unit                             |                                                                                                                                                                                                                                                                                                                                            |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                         |                                                          | dr hab. inż. Bartłomiej Gawin           |                                     |                                                                                                                      |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                   |                                                          | dr hab. inż. Bartłomiej Gawin           |                                     |                                                                                                                      |            |     |
| 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                                                       |                                         | 20.0                                |                                                                                                                      | 60.0       | 125 |
| Subject objectives                          | Mastering skills supporting the management of IT projects, as well as the implementation of tasks in projects related to the implementation of applications and IT systems in correlation with the company's business goals and processes and taking into account the architectural order and sustainable development of the organization. |                                                          |                                         |                                     |                                                                                                                      |            |     |

| Learning outcomes | Course outcome                                                                                                                                                                                                                                                                                                                                                      | Subject outcome                                                                                                                                                                                                                                               | Method of verification                  |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|                   | [liEMU2_U07] The student is able to build advanced formal models of complex economic phenomena and processes, estimate them, carry out their verification and apply them to modeling, forecasting and optimization of resources of economic institutions of varying degrees of complexity, their structure and the course of processes in them.                     | Is able to build advanced formal models of complex economic phenomena and processes, estimate them, verify them and use them for modeling, forecasting and optimizing the resources of economic institutions.                                                 | [SU2] presentation/project/paper/report |
|                   | [liEMU2_K03] The student is able to communicate freely with the public inside and outside the workplace, transfer his knowledge and share his skills through various media.                                                                                                                                                                                         | Is able to communicate freely with the environment in the workplace and outside of it, and to share his/her knowledge in the field of computerization of enterprises.                                                                                         | [SK2] presentation/project/paper/report |
|                   | [liEMU2_W05] The student has an in-depth knowledge of socio-economic data sources, their databases and how to create them.                                                                                                                                                                                                                                          | Has in-depth knowledge of the sources of socio-economic data, their databases and the method of their creation in the computerization processes of enterprises.                                                                                               | [SW2] presentation/project/paper/report |
|                   | [liEMU2_K06] The student knows the need for ethical, sustainable and socially responsible behavior in professional and social life. Initiates and organises activities for the social environment and public interest.                                                                                                                                              | Is aware of the need for ethical, balanced and socially responsible behaviour in professional and social life.                                                                                                                                                | [SK2] presentation/project/paper/report |
|                   | [liEMU2_K05] The student can think and act in an entrepreneurial manner and flexibly adapt to changing environmental conditions. Thinks creatively and can go beyond the usual patterns.                                                                                                                                                                            | Is able to think and act in an entrepreneurial manner and flexibly adapt to changing environmental conditions.                                                                                                                                                | [SK2] presentation/project/paper/report |
|                   | [liEMU2_K01] The student understands the need for continuous completion and deepening of acquired knowledge. The student inspires and organizes others' learning processes.                                                                                                                                                                                         | Understands the need to continually supplement and deepen the acquired knowledge regarding the computerization of enterprises.                                                                                                                                | [SK2] presentation/project/paper/report |
|                   | [liEMU2_U02] The student is able to proficiently acquire detailed information about economic processes and phenomena through direct observation, planned experimentation or database queries, as well as collect and process it using modern information technology tools.                                                                                          | Is able to efficiently obtain detailed information about economic processes and phenomena through direct observation, planned experiment or database query, and collect and process it using modern IT tools in the computerization processes of enterprises. | [SU2] presentation/project/paper/report |
|                   | [liEMU2_K04] The student can work in a team, co-create it, effectively manage and supervise it; efficiently adapts his behavior and conduct to his role in it; is ready to take responsibility for the team and bear the consequences; understands the necessity of systematicity and consistency in action; is open to other team members and critical of himself. | Is able to work in a team, co-create it, effectively manage it and supervise it; efficiently adapts his/her behaviour and manner of conduct to the role played in it; is ready to take responsibility for the team and face the consequences.                 | [SK2] presentation/project/paper/report |
|                   | [liEMU2_K02] The student can communicate freely with the public on specialised topics in the field of computer science and econometrics in and outside the workplace, communicate his knowledge and share his skills through various media. Culturally participates in discussions, is not afraid to ask questions and knows how to give constructive criticism.    | Is able to communicate freely with the environment on specialist topics related to the computerization of enterprises in the workplace and outside it, convey his/her knowledge and share his/her skills using various media.                                 | [SK2] presentation/project/paper/report |

|                                                                                                                                                                                                                                                                                                                                                                                                  | <table><tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr><tr><td>[liEMU2_W07] The student has an extended and established knowledge of ethical norms applicable to business, good practices for its conduct and legal regulations for the protection of intellectual property. The student has an extended knowledge of the risks and responsibilities associated with the computerization of business processes. The student knows the principles of netiquette.</td><td>Has extensive and well-established knowledge of ethical standards in business, good business practices and legal regulations regarding the protection of intellectual property.</td><td>[SW2] presentation/project/paper/report</td></tr></table>                                                                                                                                                                                                  | Course outcome                          | Subject outcome                                                                                                                                                                                                                                   | Method of verification        | [liEMU2_W07] The student has an extended and established knowledge of ethical norms applicable to business, good practices for its conduct and legal regulations for the protection of intellectual property. The student has an extended knowledge of the risks and responsibilities associated with the computerization of business processes. The student knows the principles of netiquette. | Has extensive and well-established knowledge of ethical standards in business, good business practices and legal regulations regarding the protection of intellectual property. | [SW2] presentation/project/paper/report |
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| Subject contents                                                                                                                                                                                                                                                                                                                                                                                 | <p>A. Lecture topics</p> <p>Discussion of the definition, principles and architectural framework of enterprise architecture</p> <p>Discussion of tools for managing the enterprise architecture of an organization</p> <p>Discussion of the TOGAF methodology for managing enterprise architecture</p> <p>Discussion of the issues of sustainable development and digitalization of an organization</p> <p>Discussion of issues regarding processes and tools supporting the management of energy efficiency of an enterprise Discussion of issues regarding the design of IT systems in UML notation</p> <p>B. Exercise topics</p> <p>Practical presentation and application of the ADOit tool in exercises</p> <p>Practical presentation and application of the EA tool in exercises</p> <p>Practical presentation and application of methodologies and tools for designing IT systems supporting the sustainable development of an enterprise in exercises</p> |                                         |                                                                                                                                                                                                                                                   |                               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                 |                                         |
| Prerequisites and co-requisites                                                                                                                                                                                                                                                                                                                                                                  | Basic knowledge of mathematics and computer science.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                         |                                                                                                                                                                                                                                                   |                               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                 |                                         |
| Assessment methods and criteria                                                                                                                                                                                                                                                                                                                                                                  | <table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>project work</td><td>50.0%</td><td>100.0%</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Subject passing criteria                | Passing threshold                                                                                                                                                                                                                                 | Percentage of the final grade | project work                                                                                                                                                                                                                                                                                                                                                                                     | 50.0%                                                                                                                                                                           | 100.0%                                  |
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| project work                                                                                                                                                                                                                                                                                                                                                                                     | 50.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100.0%                                  |                                                                                                                                                                                                                                                   |                               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                 |                                         |
| Recommended reading                                                                                                                                                                                                                                                                                                                                                                              | <table><tr><td>Basic literature</td><td>Gawin B., Systemy informatyczne w zarządzaniu procesami workflow, PWN 2015<br/>Sobczak A., Architektura korporacyjna. Aspekty teoretyczne i wybrane zastosowania praktyczne, Ośrodek studiów nad cyfrowym państwem 2013<br/><br/>BOC: EA IT in ADOit</td></tr><tr><td>Supplementary literature</td><td>Informatyka ekonomiczna, pod red. S. Wrycza., J. Maślankowski, Wydawnictwo Naukowe PWN, Warszawa 2019</td></tr><tr><td>eResources addresses</td><td></td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                             | Basic literature                        | Gawin B., Systemy informatyczne w zarządzaniu procesami workflow, PWN 2015<br>Sobczak A., Architektura korporacyjna. Aspekty teoretyczne i wybrane zastosowania praktyczne, Ośrodek studiów nad cyfrowym państwem 2013<br><br>BOC: EA IT in ADOit | Supplementary literature      | Informatyka ekonomiczna, pod red. S. Wrycza., J. Maślankowski, Wydawnictwo Naukowe PWN, Warszawa 2019                                                                                                                                                                                                                                                                                            | eResources addresses                                                                                                                                                            |                                         |
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| eResources addresses                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |                                                                                                                                                                                                                                                   |                               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                 |                                         |
| Example issues/<br>example questions/<br>tasks being completed                                                                                                                                                                                                                                                                                                                                   | Design an enterprise IT architecture model for the selected enterprise in the ADOIT tool.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |                                                                                                                                                                                                                                                   |                               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                 |                                         |
| Work placement                                                                                                                                                                                                                                                                                                                                                                                   | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                         |                                                                                                                                                                                                                                                   |                               |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                 |                                         |

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