



## Subject card

|                                             |                                                                                                                                                                                                                                                                    |                                                                                                  |                                     |            |                                                                                              |         |     |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------|------------|----------------------------------------------------------------------------------------------|---------|-----|
| Subject name and code                       | Informatization strategies, PG_00045371                                                                                                                                                                                                                            |                                                                                                  |                                     |            |                                                                                              |         |     |
| Field of study                              | Data Engineering                                                                                                                                                                                                                                                   |                                                                                                  |                                     |            |                                                                                              |         |     |
| Date of commencement of studies             | October 2021                                                                                                                                                                                                                                                       | Academic year of realisation of subject                                                          |                                     |            | 2023/2024                                                                                    |         |     |
| Education level                             | first-cycle studies                                                                                                                                                                                                                                                | Subject group                                                                                    |                                     |            | Optional subject group<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                               | 3                                                                                                                                                                                                                                                                  | Language of instruction                                                                          |                                     |            | English                                                                                      |         |     |
| Semester of study                           | 5                                                                                                                                                                                                                                                                  | ECTS credits                                                                                     |                                     |            | 3.0                                                                                          |         |     |
| Learning profile                            | general academic profile                                                                                                                                                                                                                                           | Assessment form                                                                                  |                                     |            | assessment                                                                                   |         |     |
| Conducting unit                             | Department of Informatics in Management -> Faculty of Management and Economics                                                                                                                                                                                     |                                                                                                  |                                     |            |                                                                                              |         |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                 |                                                                                                  | dr Grażyna Musiatowicz-Podbiał      |            |                                                                                              |         |     |
|                                             | Teachers                                                                                                                                                                                                                                                           |                                                                                                  | dr Grażyna Musiatowicz-Podbiał      |            |                                                                                              |         |     |
| Lesson types and methods of instruction     | Lesson type                                                                                                                                                                                                                                                        | Lecture                                                                                          | Tutorial                            | Laboratory | Project                                                                                      | Seminar | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                              | 15.0                                                                                             | 0.0                                 | 15.0       | 0.0                                                                                          | 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                                                                                               | 4.0                                 |            | 41.0                                                                                         | 75      |     |
| Subject objectives                          | The aim of the course is to prepare students for developing enterprise informatization strategies, including definition of the current state and future state, and activities to realize strategic goals for a given process.                                      |                                                                                                  |                                     |            |                                                                                              |         |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                                                                     | Subject outcome                                                                                  |                                     |            | Method of verification                                                                       |         |     |
|                                             | [K6_U03] analyses problems and creates appropriate models, data structures and algorithms (including heuristic and numerical ones), assesses their computational complexity, estimates errors of the received solutions                                            |                                                                                                  |                                     |            |                                                                                              |         |     |
|                                             | [K6_K01] is aware of quickly changing trends and the resulting need for further education and self-improvement in the area of the performed profession of an engineer with IT and economic-financial skills.                                                       | A student is able to select the informatization strategy to the tasks performed in an enterprise |                                     |            | [SK5] Assessment of ability to solve problems that arise in practice                         |         |     |
|                                             | [K6_W02] Knows and understands the standards of network management, architecture, technologies and services of telecommunications networks. Knows the main protocols of packet networks, understands the operation of local networks and network connection rules. |                                                                                                  |                                     |            |                                                                                              |         |     |

| Subject contents                | <p>LECTURES:</p> <ul style="list-style-type: none"> <li>• New organizational forms in business and information technology</li> <li>• Information technology and business effectiveness – Return on Investment (ROI)</li> <li>• Balanced Score Card (BSC)</li> <li>• Enterprise Architecture</li> <li>• TOGAF - Enterprise Architecture development method</li> <li>• Integrated information systems</li> <li>• Structural design methods for system integration (SI)</li> <li>• Object-oriented approach</li> <li>• Object-oriented design methods, such as UML</li> <li>• Business project planning for SI – phases</li> <li>• Management of SI project – determining effectiveness</li> <li>• Safety organization</li> </ul> <p>EXERCISES:</p> <ul style="list-style-type: none"> <li>• BSC modelling and Enterprise Architecture guidelines</li> <li>• Object model for selected process</li> <li>• Analyzing effectiveness of the informatized process</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                          |                                                                                                                                                                                                                                                                                                                                                                 |       |                      |       |       |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------|-------|-------|
| Prerequisites and co-requisites | Foundations of informatics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                          |                                                                                                                                                                                                                                                                                                                                                                 |       |                      |       |       |
| Assessment methods and criteria | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Subject passing criteria</th> <th style="width: 33%;">Passing threshold</th> <th style="width: 34%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Exam</td> <td>50.0%</td> <td>60.0%</td> </tr> <tr> <td>Report</td> <td>50.0%</td> <td>40.0%</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |  | Subject passing criteria | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Percentage of the final grade | Exam                     | 50.0%                                                                                                                                                                                                                                                                                                                                                           | 60.0% | Report               | 50.0% | 40.0% |
| Subject passing criteria        | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Percentage of the final grade |  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                          |                                                                                                                                                                                                                                                                                                                                                                 |       |                      |       |       |
| Exam                            | 50.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 60.0%                         |  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                          |                                                                                                                                                                                                                                                                                                                                                                 |       |                      |       |       |
| Report                          | 50.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 40.0%                         |  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                          |                                                                                                                                                                                                                                                                                                                                                                 |       |                      |       |       |
| Recommended reading             | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;">Basic literature</td> <td colspan="2" data-bbox="799 853 1477 1451"> <p>Robert Kaplan, David Norton; Wdrażanie strategii dla osiągnięcia przewagi konkurencyjnej; PWN W-wa 2010</p> <p>TOGAF - materiały</p> <p>Jeanne Ross, Peter Weill, David Robertson; Architektura korporacyjna jako strategia; Studio Emka W-wa 2010</p> <p>Krzysztof Sacha; Inżynieria oprogramowania; PWN W-wa 2010</p> <p>Janusz Górski (red.); Inżynieria oprogramowania w projekcie informatycznym"; Mikom W-wa</p> <p>Rafał Cegiela, Andrzej Zalewski; Racjonalne zarządzanie przedsiębiorstwami informatycznymi i systemami komputerowymi; Nakom Poznań 2000</p> </td> </tr> <tr> <td style="vertical-align: top;">Supplementary literature</td> <td colspan="2" data-bbox="799 1458 1477 1765"> <p>Stanisław Wrycza, Bartosz Marcinkowski, Krzysztof Wyrzykowski; Język UML 2.0 w modelowaniu systemów informatycznych"; Helion 2005</p> <p>Patrick Graessle, Henriette Baumann, Philippe Bauman; UML 2.0 w akcji. Przewodnik oparty na projektach; Helion 2006</p> <p>Zenon Biniek; Wybrane elementy zarządzania projektem informatycznym; Vizja w-wa 2010</p> </td> </tr> <tr> <td style="vertical-align: top;">eResources addresses</td> <td colspan="2" data-bbox="799 1771 1477 1798"></td> </tr> </table> |                               |  | Basic literature         | <p>Robert Kaplan, David Norton; Wdrażanie strategii dla osiągnięcia przewagi konkurencyjnej; PWN W-wa 2010</p> <p>TOGAF - materiały</p> <p>Jeanne Ross, Peter Weill, David Robertson; Architektura korporacyjna jako strategia; Studio Emka W-wa 2010</p> <p>Krzysztof Sacha; Inżynieria oprogramowania; PWN W-wa 2010</p> <p>Janusz Górski (red.); Inżynieria oprogramowania w projekcie informatycznym"; Mikom W-wa</p> <p>Rafał Cegiela, Andrzej Zalewski; Racjonalne zarządzanie przedsiębiorstwami informatycznymi i systemami komputerowymi; Nakom Poznań 2000</p> |                               | Supplementary literature | <p>Stanisław Wrycza, Bartosz Marcinkowski, Krzysztof Wyrzykowski; Język UML 2.0 w modelowaniu systemów informatycznych"; Helion 2005</p> <p>Patrick Graessle, Henriette Baumann, Philippe Bauman; UML 2.0 w akcji. Przewodnik oparty na projektach; Helion 2006</p> <p>Zenon Biniek; Wybrane elementy zarządzania projektem informatycznym; Vizja w-wa 2010</p> |       | eResources addresses |       |       |
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| eResources addresses            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |  |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                          |                                                                                                                                                                                                                                                                                                                                                                 |       |                      |       |       |

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| Example issues/<br>example questions/<br>tasks being completed | Calculating return-on-investment and analysis of the impact of informatization on the effectiveness of an enterprise<br><br>BSC project accounting for informatization processes – vision<br><br>Requirements analysis for selected process<br><br>Effectiveness analysis of informatization project |
| Work placement                                                 | Not applicable                                                                                                                                                                                                                                                                                       |