#### card of course

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| Subject name | Production management |

1. The placement of the subject in the study system

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| 1.1. Field of study | Management |
| 1.2. Form and path of study | Full-time/Part-time |
| 1.3. Level of education | First-cycle studies |
| 1.4. Study profile | Practical |

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| 1. 5. Specialty | Company management |
| 1.6. Subject Coordinator | Dr inż. Tomasz Żminda |

2. General characteristics of the subject

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| 2.1. Belonging to a subject group | Optional/practical |
| 2.2. Number of ECTS | 6 |
| 2.3. Language of lectures | Polish |
| 2.4. Semesters in which the subject is taught | III |
| 2.5.Criteria for selecting course participants | For the specialization: Company management |

1. Learning outcomes and course delivery
	1. Subject Objectives

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| No. | Subject Objectives |
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| C1 | Familiarizing students with the elements of the production process structure and the relationships between these elements |
| C2 | Familiarizing students with product development methods |
| C3 | Presentation of methods and tools used in the design and analysis of production systems and acquisition of skills in their selection. |
| C4 | Familiarizing students with modern concepts of production management |
| C5 | Acquiring skills in analyzing the course of the production process in the enterprise and in analyzing and evaluating production. |

* 1. Subject-specific learning outcomes, divided into knowledge , skills and competences , with reference to the directional learning outcomes

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| --- | --- | --- | --- |
| No. | Description of subject learning outcomes | Reference to directional effectslearning (symbols) | Method of implementation (mark "X") |
| ST | NST |
| Classes at the University | Activities on the platform | Classes at the University | Activities on the platform |
| After passing the course, the student knows and understands **the knowledge** |
| W1 | Elements of the production process and the relationships between them | Z1\_W04Z1\_W05 | X |  |  | X |
| W2 | Selected product shaping methods | X |  |  | X |
| W3 | Methods and tools used in the design and analysis of production systems | X |  |  | X |
| W4 | Understands the impact of the organization's economic environment on the production processes in the enterprise |  | X |  |  | X |
| After passing the course, the student is **able** to: |
| U1 | To adapt the appropriate standards and method and use it to forecast the demand for a given company's products in order to determine the production program | Z1\_U02Z1\_U04Z1\_U06Z1\_U11 | X |  | X |  |
| U2 | Adapt the method and use it to determine the company's production program | X |  | X |  |
| U3 | Interpret, describe and analyze the course of the production process in the enterprise | X |  | X |  |
| U4 | Analyze and evaluate production (including in terms of volume, assortment, quality, rhythm of production and factors shaping its volume/value) | X |  | X |  |
| U5 | Use production management terminology and prepare oral presentations relating to the sources and basic theoretical concepts used in production management | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** |
| K1 | Critically evaluate your knowledge of production organization and management | Z1\_K01 | X |  | X |  |

3.3. Forms of teaching and their number of hours - Full-time studies (ST), Part-time studies (NST)

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| Path | Lecture | Exercises | Design | Workshop | Laboratory | Seminar | Lecturer | Classes conducted using distance learning methods and techniques in the form of a lecture | Other | **ECTS points** |
| **ST** | 15 |  | 30 |  |  |  |  |  |  | 6 |
| **NST** |  |  | 15 |  |  |  |  | 10 |  | 6 |

3.4. Content of education (separately for each form of classes: (W, ĆW, PROJ, WAR, LAB, LEK, OTHER). It should be marked (X) how the given content will be implemented (classes at the university or classes on the e-learning platform conducted using distance learning methods and techniques)

TYPE OF CLASS: LECTURE

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| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") |
| ST | NST |
| **Classes at the University** | **Activities on the platform** | **Classes at the University** | **Activities on the platform** |
| 1. | Introduction to production management. The essence of production management, basic concepts, production management and enterprise management. | W1 | X |  |  | X |
| 2. | Elements of the production process structure on a macro-organizational scale. Preparatory process, basic process, service processes, auxiliary processes, production control processes | W1 | X |  |  | X |
| 3. | Production planning and methods of forecasting demand for products in the context of determining the production program | W3 | X |  |  | X |
| 4. | Product shaping | W2, W3 | X |  |  | X |
| 5. | Structural preparation of production | W1, W2, W3 | X |  |  | X |
| 6. | Technological preparation of production | W1, | X |  |  | X |
| 7. | Production analysis | W3, K1 | X |  |  | X |
| 8. | Summary of classes and discussion of grades |  | X |  |  | X |

TYPE OF CLASS: PROJECT

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| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") |
| ST | NST |
| **Classes at the University** | **Activities on the platform** | **Classes at the University** | **Activities on the platform** |
| 1. | Forecasting demand for company products for the purpose of determining the production program (short-term forecasts) | U1 | X |  | X |  |
| 2. | Forecasting demand for company products for the purpose of determining the production program (linear and nonlinear regression methods) | U1 | X |  | X |  |
| 3. | Determining the production program using the graph-analytical method | U2 | X |  | X |  |
| 4. | Determining the production program using matrix algebra | U2 | x |  | x |  |
| 5. | Determining the production batch size | U2, U3 | X |  | X |  |
| 6. | Analytical determination of work-in-progress inventories | U3, U4, U5 | X |  | X |  |
| 7. | Graphical determination of work-in-progress stocks | U3, U4, U5 | X |  | X |  |
| 8. | Production analysis (analysis of production volume, level of production plan implementation, maintenance of production structure) | U4 | X |  | X |  |
| 9. | Production analysis cont. (analysis of production rhythm, production quality, factors shaping production in terms of size/value) | U4 | X |  | X |  |
| 10. | Conventional and modern production systems | U5 | X |  | X |  |
| 11. | Summary of classes and discussion of grades |  | X |  | X |  |

3.5. Methods of verifying learning outcomes (indication and description of methods of conducting classes and verification of achievement of learning outcomes and method of documentation)

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| Subject Effects | Teaching methods | Methods of verifying learning outcomes | Documentation methods |
| KNOWLEDGE |
| W1-W3 | Informative lecture, Lecture with multimedia presentation | Exam (test) | Completed and graded exam paper |
| SKILLS |
| U1-U5 | Design tasksWorking on the project | Design tasks:1. Project of demand forecast for the company's products (10% of the assessment)2. Project of determining the production program using the graph-analytical method (5% of the mark)3. Project of determining the production program using the matrix algebra method (5% of the grade)4. Production evaluation project (5% of the evaluation)5. Final project in the form of a presentation (75%) | Graded final project work (presentation) |
| SOCIAL COMPETENCES |
| K1 | Design tasksWorking on the project | Design tasks:1. Project of demand forecast for the company's products (10% of the assessment)2. Project of determining the production program using the graph-analytical method (5% of the mark)3. Project of determining the production program using the matrix algebra method (5% of the grade)4. Production evaluation project (5% of the evaluation)5. Final project in the form of a presentation (75%)) | Graded final project work (presentation) |

3.6. Assessment criteria for the achieved learning outcomes

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| Learning effect | For a grade of 3 or "pass."the student knows and understands/is able to/is ready to | For a grade of 3.5, the student knows and understands/is able to/is ready to | For a grade of 4, the student knows and understands/is able to/is ready to | For a grade of 4.5, the student knows and understands/is able to/is ready to | For a grade of 5, the student knows and understands/is able to/is ready to |
| W | 51-60% of knowledge indicated in learning outcomes | 61-70% of knowledge indicated in learning outcomes | 71-80% of knowledge indicated in learning outcomes | 81-90% of knowledge indicated in learning outcomes | 91-100% of knowledge indicated in learning outcomes |
| U | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |
| K | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |

3.7. Literature

**Basic**

* Świć Antoni ; Lipski Jerzy (red.), Management and control of manufacturing processes, Lubelskie Towarzystwo Naukowe, Lublin 2011.
* Pająk E., Zarządzanie produkcją. Produkt, technologia, organizacja, Wydawnictwo Naukowe PWN, Warszawa 2019.
* Rogowski A., Podstawy organizacji i zarządzania produkcją w przedsiębiorstwie, CeDeWu, Warszawa, 2023

**Supplementary**

* Pająk E., Klimkiewicz M., Kosieradzka A., Zarządzanie produkcją i usługami, Polskie Wydawnictwo Ekonomiczne, Warszawa 2014.
* Jerzemowska M. (red.), Analiza ekonomiczna w przedsiębiorstwie, PWE, Warszawa, 2018

4. Student workload - ECTS points balance

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| **Types of student activity** | **Student Load** |
| **ST** | **NST** |
| **Classes requiring direct contact between the student and the academic teacher at the university premises** | **45** | **25** |
| Classes included in the study plan | 45 | 25 |
| **Student's own work** | **105** | **125** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 50 | 60 |
| Preparation for passing classes | 55 | 65 |
| **TOTAL STUDENT HOURLY LOAD** | **150** | **150** |
| **Number of ECTS points** | **6** | **6** |

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| Last change date | 30/09/2024 |
| The changes were introduced | ZAZ Education Quality Team |
| The changes were approved | Mgr Anna Bielak |