STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Design of Production Systems		**1011101271011100219**

Field of study	Profile of study (general academic, practical)	Year /Semester
Engineering Management - Full-time studies -	**(brak)**	**4 / 7**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**elective**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours					No. of credits
Lecture: **15**	Classes: **-**	Laboratory: **-**	Project/seminars: **15**		**2**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)

Responsible for subject / lecturer:

dr inż. Agnieszka Grzelczak
email: agnieszka.grzelczak@put.poznan.pl
tel. 61 665 33 69
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Responsible for subject / lecturer:

dr inż. Ireneusz Gania
email: ireneusz.gania@put.poznan.pl
tel. 616653385
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The student has a basic knowledge of managing production and services
2	**Skills**	The student understands and can apply the tools and techniques for the design of the production units of the first level of complexity
3	**Social competencies**	The student understands and is prepared to design the organization of production systems, especially in terms of production structures

Assumptions and objectives of the course:

-Understanding the theoretical and practical issues related to the design of production systems and the basic methods and techniques used in the process

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. He has a basic knowledge of the management of production and its use in the design of production systems - [[K1A_W04,K1A_W07]]
2. He has extensive knowledge of the structures and processes of production changes in this area and change management - [[K1A_W08,K1A_W10]]
3. He knows the design methods and tools of production structures - [[K1A_W13,K1A_W14]]

Skills:

1. Able to formulate the task design (engineering) in the field of industrial organization, and choose the appropriate tools and methods to solve the problem - [[K1A_U04,K1A_U12]]
2. Able to assess the economic terms of the specific problem area manufacturing system design - [[K1A_U13,K1A_U14]]
3. Can design the structure of production, including the organization of production units higher degrees of sophistication, departments, establishments and auxiliary processes - [[K1A_U15]]
4. Able to prepare and present in Polish or foreign to discuss the problem of the design of production systems - [[K1A_U16]]

Social competencies:

1. He is responsible for proper identification and settlement of dilemmas associated with the practice in the design of production systems - [[K1A_K02,K1A_K03]]
2. Understands the need and knows the possibilities of continuous training - [[K1A_K04,K1A_K05]]
3. Able to pass on the knowledge to the members of the project team is aware of the responsibility for their own work and willingness to comply with the principles of teamwork - [[K1A_K06, KInz_W05]]

Assessment methods of study outcomes

Formative assessment:

a) For the project: on the basis of progress in the implementation stages of the project, and knowledge of the issues necessary to carry b) for the lecture: on the basis of answers to questions about the topics covered in previous lectures

Recapitulative assessment:

a) For the project: on the basis of (1) the quality of the project (2) answers to questions about the project b) for the lecture: on the basis of colloquium - written work on the issues discussed during the lecture. The exam can be applied after obtaining the ratings of the project . The exam is passed, after giving the correct answers to most questions

Course description

-Basis of design production systems. The company as a system. The term project situation (upgrading or developing new systems). Product realization process. Algorithm design and technical assumptions - economic production preparation products. The problem of design: the structure of production systems, production start, the spatial organization of manufacturing processes. Project documentation. The master plan, the location of the company. Project evaluation system. New directions and trends in the design of production systems.

Teaching methods

Information lecture (conventional) (information transfer in a systematic way) monographic (specialist).

- Project method (individual or team implementation of large, multi-stage

cognitive or practical task resulting in the creation of a work).

Basic bibliography:

1. Brzeziński M. (red.), Organizacja i sterowanie produkcją, AW Placet, Warszawa, 2002.
2. Lewandowski J., Skołud B., Plinta D., Organizacja systemów produkcyjnych, PWE, Warszawa 2014.
3. Gawlik J., Plichta J., Świć A., Procesy produkcyjne, PWE, Warszawa 2013.
4. Mazurczak J., Projektowanie struktur systemów produkcyjnych, WPP, Poznań, 2001.
5. Lis S., Organizacja i ekonomika procesów produkcyjnych w przemyśle maszynowym, PWN, Warszawa 1984.
6. Jackowicz R., Lis S, Podstawy projektowania struktur przedsiębiorstw przemysłowych, WPW, Warszawa 1987.
7. Mazurczak, J., Gania, I., 2008. Kryteria klasyfikacji warunków organizowania systemów produkcyjnych, [red.] Fertsch Marek, Grzybowska Katarzyna, Stachowiak Agnieszka, Poznań, Politechnika Poznańska, Instytut Inżynierii Zarządzania, str. 175 ? 186

Additional bibliography:

1. Pająk E., Klimkiewicz M., Kosieradzka A., Zarządzanie produkcją i usługami, PWE, Warszawa 2014.
2. Muhlemann A., Oakland J., Lockyer K, Zarządzanie. Produkcja i usługi, PWN, Warszawa 2001.
3. Pająk E., Zarządzania produkcją, Wydawnictwo Naukowe PWN, Warszawa 2017.

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	15
2. Participation in project activities	15
3. Consulting project	15
4. Exam preparation	13
5. Exam	2

Student's workload

Source of workload	hours	ECTS
Total workload	60	2
Contact hours	45	1
Practical activities	15	1