University of Gdańsk

Subject card

Subject name and code	Chemical business design, PG_00080784		
Field of study	Chemical Business		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish Polish
Semester of study	5	ECTS credits	1.0
Learning profile	academic	Assessment form	exam
Conducting unit	Laboratory of Photocatalysis -> Department of Environmental Technology -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Anna Gołąbiewska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	2.0	8.0	25

Subject objectives

- Acquainting with the principles of designing of small production enterprises;
- Acquainting with with the elements of process design
- Acquainting with the principles of economical analysis / determining the profitability of a new production installation

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BCHINŻ_W05] Describes the life cycle of devices, facilities and technical systems as well as modern environment-friendly technical solutions.	It proposes modern, pro-environmental technical solutions	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[BCHINŻ_U06] Proposes and makes simple devices, operations or unit processes related to the implementation of the technological process used in the chemical industry, taking into account material and energy balances.	Prepares a process design: chemical and technological concept	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[BCHINŻ_U07] Performs a preliminary economic analysis of designed and implemented engineering tasks.	Przygotowuje biznes plan przedsiębiorstwa Identyfikuje i rozpoznaje potrzeby rynku Projektuje małe instalacje produkcyjne oraz określa ich rentowność	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[BCHINŻ_W07] Describes the construction and operating principles of basic scientific, technological and control-measuring apparatus.	Correctly presents the technological diagram of the selected process	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[BCHINŻ_U09] Using the acquired knowledge, skills and various sources of scientific information independently prepares written papers and oral presentations.	Distinguishes the patentability of products/ technologies	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[BCHINŻ_W09] Describes the principles of creating and developing forms of individual entrepreneurship using knowledge of economics.	Prepares the business plan for the small company	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[BCHINŻ_K05] Is convinced of the importance of behaving in a professional manner in every situation, taking full responsibility in the field of engineering activities and their impact on the natural environment and compliance with the principles of professional ethics.	Evaluates the technology readiness level The ability to choose a chemical and technological concept	[SK2] presentation/project/paper/ report [SK4] test/exam - oral or written [SK5] implementation of a problem task
[BCHINŻ_U01] On the basis of the acquired knowledge, identifies, analyses and solves engineering tasks and problems in broadly understood chemistry.	Prepares a process design: chemical and technological concept	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU5] implementation of a problem task

Subject contents

- Designing enterprise organization.
- Designing innovative technologies.
- Managerial roles and activities.
- Elements of process design - mass balance.
- Energy balance of the technological process.
- Analysis of the energy balance of the process unit.
- Corrosion issues and material selection. Process quality control. Measurements and automation. Sewage, waste and gases. Security issues.
- Financial plan of the enterprise.
- The effectiveness of a business venture and justification of its purposefulness
- Enterprise operational plan
- Selection of technological devices - technological diagram.
- Enterprise marketing plan

Prerequisites and co-requisites

Prerequisites:

Basic knowledge of English, Basics of chemical technology.Basics of general chemistry, Start-up design

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
oral exam	51.0%	100.0%

Recommended reading	Basic literature	1. S. Bretsznajder, Podstawy ogolne technologii Chemicznej, WNT Warszawa 1973. 2. K.Schmidt-Szałowski, M.Szafran, E. Bobryk, J. Sentek, Technologia Chemiczna przemysł nieorganiczny, PWN, Warszawa 2013. 3. L. Synoradzki, J.Wasilewski, Projektowanie procesow technologicznych. Od laboratorium do instalacji przemysłowej. OWPW, Warszawa 2006. 4. L. Synoradzki, J.Wasilewski, Projektowanie procesow technologicznych bezpieczenstwo procesow chemicznych. OWPW, Warszawa 2012. 5. E.Pawłowski, K. Pawłowski, J. Trzcielinska, S. Trzcielinski, Projektowanie biznesu i ocena przedsiewziec inwestycyjnych, Wydawnictwo Politechniki Poznanskiej 6. Modele biznesowe budowy i rozwoju firm spin off na podbudowie szkoły wyzszej, praca zbiorowa pod redakcja: Mieczysława Baka i Przemysława Kulawczuka, IBnDiPP, Warszawa 2010
	Supplementary literature	brak
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Discuss the forms of mass balance presentation2. Elements of the technological diagram.	
Work placement	Not applicable	

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