

## Detailed course description (SUBJECT CARD)

**Course title: Economics and Managements**

**Course code:**

**Affiliation to a course group:**

**Course type:**

core

obligatory

**Field of study:**

Industrial and Engineering Chemistry

**Level of study:**

second-cycle programme

**Study profile:**

general academic

**Mode of study:**

full-time programme

**Specialty (specialisation):** all specialisations

**Year of study:** first

**Semester:** first

**Teaching modes and teaching hours:**

lectures – 15

tutorials – 30

**Language/s of instruction:** English

**Number of ECTS credits (according to the study programme):** 4

1. Course objectives: the aim of the course is to familiarize students with the process of knowledge commercialization and the process of technology transfer from science and research institutes to industry.
2. Relating the field-specific learning outcomes to teaching modes, verification methods and assessment of student's learning outcomes:

symbol	assumed learning outcomes <i>a student who completed the course:</i>	teaching modes	verification methods and learning outcome assessment
Knowledge: a student knows and understands			
K2A_W10	Student has knowledge of investing in the chemical industry, management, including quality management, running a business, technology transfer and copyright. He can use patent information resources.	Lecture/tutorial	Observation/Presentation/ answer questions
Skills: a student can			
K2A_U02	Student has the ability to teamwork and manage the team.	Lecture/tutorial	Observation
K2A_U05	Student can independently determine the directions of further education and pursue self-study.	Lecture/tutorial	Observation/Presentation
K2A_U06	Student has the ability to present research results in the form of a report, dissertation or presentation.	Lecture/tutorial	Observation/Presentation
Social competences: a student is able to			
K2A_K04	Student behaves in a professional manner with compliance with the rules of professional ethics.	Lecture/tutorial	Observation

3. Study programme contents ensuring the learning outcomes (*according to the study programme*):
  - Technology transfer from scientific research units to industry; investing in the chemical industry; management and copyright, intellectual property
  - Economic analysis of the chemical process
  - The latest achievements in chemical technology - economic analysis
  - Professional ethics
  - Presenting the results of economic analysis in the form of a report, dissertation or presentation
4. Description of methods to determine the ECTS credits:

Type of activity	Number of hours / ECTS credits
Number of course hours regardless of a teaching mode	45 / 2
Student workload 1* Getting and developing information on the indicated technology	45 / 1
Student workload 2* Preparation of the preliminary business plan	30 / 1
Student workload n*	-
Other**	-
<b>Total hours:</b>	<b>120</b>
<b>Number of ECTS credits allocated for a course</b>	<b>4</b>

Description:

\* – student workload, types of activities need to be provided, e.g. preparation for the course, interpretation of results, preparation of a course report, preparation for the examination, getting familiar with the literature, preparation of a project, presentation, written work, report, etc.

\*\* – other e.g. additional course hours

5. Summary indicators:
  - number of course hours and ECTS credits at the course with a direct participation of academic teachers or other persons teaching the course and students: 45 / 2
  - number of course hours and ECTS credits at the course related to the scientific activity conducted at the Silesian University of Technology in a discipline or in disciplines to which a field of study is assigned- in the case of studies with a general academic profile: 0
  - number of course hours and ECTS credits at the course shaping practical skills- in the case of practical studies: 0
  - number of course hours conducted by academic teachers employed by the Silesian University of Technology as their primary workplace: 45
6. Persons conducting particular types of courses (name, surname, academic degree or degree in arts, title of professor, business e-mail address):
 

Dr inż. Adam Marek, e-mail: adam.a.marek@polsl.pl
7. Detailed description of teaching modes:
  - 1) lectures:
    - detailed programme contents:
      - Introduction to technology commercialization
      - Technology Assessment (Quicklook)
      - Preliminary Business Plan
      - Center of Advanced Technologies
      - Office of Technology Licensing
      - Case study of effective technology transfer
    - Case study teaching methods, including distant learning:
 

lecture
    - form and criteria for successful semester completion, including retakes, as well as the conditions for admission to the examination:
 

not applicable
    - course organisation and rules of participation in the course, with an indication whether a student 's attendance is obligatory
 

course organization according to the lecturer's schedule, student attendance is obligatory
  - 2) description of other teaching methods:
 

Tutorials:

    - detailed programme contents:
 

During the seminar, students will be introduced to the basics of technology assessment and its commercialization, and the preparation of preliminary business plans
    - Case study teaching methods, including distant learning:
 

seminars, student's presentation, conversation
    - form and criteria for successful semester completion, including retakes, as well as the conditions for admission to the examination:
 

not applicable
    - course organisation and rules of participation in the course, with an indication whether a student 's attendance is obligatory
 

course organization according to the lecturer's schedule, student attendance is obligatory
8. Description of the method to determine the final grade (rules and criteria for evaluation, as well as a calculation method for the evaluation in the case of a course which includes more than one teaching mode, including all teaching modes and all examination and credit dates including retake examinations):
 

Two positive grades from seminar classes and grade from activity, calculated in a ratio of 45:45:10.....
9. Method and procedure for filling up arrears resulting from:
  - student's absence from the course,
  - differences in study programmes for persons changing a field of study, changing university or resuming studies at the Silesian University of Technology,

not applicable
10. Prerequisites and additional requirements, taking into account the course sequence:

not applicable

11. Recommended sources and teaching aids:

1. Green, S. and Warren, P., Technology Transfer in Practice, Sue Horwood Publishing Limited, Storrington, West Sussex, UK, 2002.
2. Beak, D.H., Sul, W., Hong, K., and Kim, H., A technology valuation model to support technology transfer negotiations, R&D Management, 37, 123, 2007.
3. Glavan B., Coordination Failures, Cluster Theory and Entrepreneurship: A Critical View, MPRA Paper No. 6033, May 2007

12. Description of teacher's competences ( e.g. publications, professional experience, certificates, trainings etc. related to the programme contents implemented as part of the course):

Training course 'Science for the Economy - effective management of scientific research and commercialization of research results.

Training course "Method of technology valuation"

Participation in the elaboration, sale and implementation of own technologies

Numerous Polish patents

13. Other information:

none