STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Introduction to Engineering	**1011101111011120150**

Field of study	Profile of study (general academic, practical)	Year /Semester
Safety Engineering - Full-time studies - First-	**(brak)**	**1 / 1**
Elective path/specialty	**Subject offered in:**	**Course (compulsory, elective)**
-	**Polish**	**obligatory**

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

No. of hours	No. of credits
Lecture: **30** Classes: **15** Laboratory: **-** Project/seminars: **-**	**5**

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 %)
technical sciences	**1 100%**
Technical sciences	**1 100%**

Responsible for subject / lecturer:

prof. dr hab. inż. Edwin Tytyk
email: edwin.tytyk@put.poznan.pl
tel. 61-665-33-77; 61-665-33-74
Faculty of Engineering Management
60-965 Poznań, ul. Strzelecka 11

Responsible for subject / lecturer:

mgr Katarzyna Szwedzka
email: katarzyna.szwedzka@put.poznan.pl
tel. 61-665-34-08; 61-665-33-74
Faculty of Engineering Management
60-965 Poznań, ul. Strzelecka 11

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of secondary school.
2	**Skills**	ability to solve simple tasks
3	**Social competencies**	group work, interest in science

Assumptions and objectives of the course:

-Students should obtain the knowledge of the main problems connected with technology development. They ought to recognize of the logic of changes in production techniques and conjunction of human with the technology and environment. The systemic character of that conjunction is accented. Letting know of students with the contemporary trends in technology development is important for their ability to recognize, evaluation and describing of existing technical means in production and work conditions.

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

Knowledge:

1. has orderly, theoretically supported general knowledge of technical security - [[K1A_W08]]
2. has basic knowledge of products, equipment, technical systems - [[K1A_W19]]
3. knows elementary notions connected with reliability and security in maintaining technical equipment, objects and technical systems - [[K1A_W20]]
4. knows basic methods and techniques of work organisation - [[K1A_W22]]
5. . knows basic methods, techniques, tools and materials used in technology, that are designed to improve quality - [[K1A_W23]]
6. knows basic methods, techniques, tools and materials used in dealing with simple engineering tasks - [[K1A_W25]]

Skills:

1. can acquire, integrate, interpret data from literature, database or other properly matched sources, both in English or other foreign language accepted as an international language of communication within Security Engineering, as well as to draw conclusions, formulate and justify opinions - [[K1A_U01]]

2. has self-study ability and comprehends it - [[K1A_U05]]

3. can make use of analytic, simulation and experimental methods to formulate and solve engineering problems - [[K1A_U09]]

4. can, while formulating and solving engineering tasks, discern their systemic and non-technical aspects and also socio-technical, organisational and economic approach - [[K1A_U10]]

5. can conduct a critical analysis of the ways in which technical solutions function and assess, by means of Security Engineering, the existing technical solutions, in particular machines, equipment, objects, systems, services and processes - [[K1A_U13]]

6. can identify and formulate the specification of simple engineering tasks, that are of practical nature, typical of Security Engineering - [[K1A_U14]]

Social competencies:

1. understands the need and knows means how to self-study (first, second and third cycle studies, postgraduate studies, qualification courses)- improving professional, personal and social competence; can argument the need to learn for the whole life - [[K1A_K01]]

2. is aware of the relevance of the study and understands non-technical aspect as well as the consequences of engineering activity, including its impact on environment and taken responsibility of his decisions - [K1A_K02]]

Assessment methods of study outcomes

-Written and oral exam, written test

Formative assessment:

In regards to practicals - current check of the acquired knowledge and skills learnt during maths and graphics exercises

Collective assessment:

In respect to practicals - final exam on skills learnt during maths and graphics exercises

Considering a lecture, a test based exam within exam session

Course description

-Chosen elements of the history of technology on a background of human evolution and social development. Technological methods concerning materials (e.g. plastic working, founding, machining, heat- and thermo-chemical treatment), energy and information and their technical equipment. Technology in different areas in human activity. Technology and human work. The main problems of the contemporary civilization. Ethical problems of users and creators of technology means and technical devices.

Basic bibliography:

1. Wprowadzenie do techniki (Introduction to technology)- Tytyk Edwin, Butlewski Marcin, Wyd. Politechniki Poznańskiej, Poznań, 2009

2. Wprowadzenie do techniki - materiały do ćwiczeń i wykładów (Introduction to technology- materials for lectures and practice), Tomaszewski Zbigniew, Wyd. Politechniki Poznańskiej, Poznań, 2005

3. Encyklopedia technik wytwarzania stosowanych w przemyśle maszynowym (Encyclopaedia of production techniques in industry) , tom I, Erbel Jerzy, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2001

4. Encyklopedia technik wytwarzania stosowanych w przemyśle maszynowym (Encyclopaedia of production techniques in industry), Tom II, Erbel Jerzy, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2001

Additional bibliography:

1. Technologia maszyn (Technology of machines), Okoniewski Stefan, WSiP, Warszawa, 1999

2. Dawne wynalazki (Past inventions), James Peter, Thorpe Nick, Świat Książki, Warszawa, 1997

3. Powszechna historia techniki (Contemporary history of technology), Bolesław Orłowski, Oficyna Wydawnicza "Mówią Wieki", Warszawa, 2010

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	30
2. Attendance and active participation in practical classes	15
3. Preparation for the final credits	15
4. Preparation for the final exam	10

Student's workload

Source of workload	hours	ECTS
Total workload	100	5
Contact hours	45	4
Practical activities	15	1