# STUDY MODULE DESCRIPTION FORM

| Name of the module/subject | | Code |
|---|---|---|
| **Ergonomics of products** | | **1011104351011120247** |
| Field of study | Profile of study (general academic, practical) | Year /Semester |
| **Management - Part-time studies - First-cycle** | **(brak)** | **3 / 5** |
| Elective path/specialty | Subject offered in: | Course (compulsory, elective) |
| **-** | **Polish** | **elective** |
| Cycle of study: | Form of study (full-time,part-time) | |
| **First-cycle studies** | **part-time** | |
| No. of hours | | No. of credits |
| Lecture: **12** Classes: **12** Laboratory: **-** Project/seminars: **-** | | **4** |
| 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** | | **4 100%** |
| **Technical sciences** | | **4 100%** |

## Responsible for subject / lecturer:

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## Prerequisites in terms of knowledge, skills and social competencies:

| | | |
|---|---|---|
| 1 | **Knowledge** | Student has basic knowledge about a workplace in the realm of ergonomics and macroergonomics. |
| 2 | **Skills** | Student can discern their system, socio-technical, organizational, economic and non-technical aspects of the human-technical object system. |
| 3 | **Social competencies** | Student is aware of the need to shape products including physical, psychological features and capabilities of an individual. |

## Assumptions and objectives of the course:

Developing an understanding for theoretical aspects and practical skills of ergonomic product development.

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

### Knowledge:

1. Student has basic knowledge of products? lifecycle - [K02-InzA_W01]
2. Student knows fundamental methods, techniques, tools and materials that are applied in solving simple engineering tasks relating building and machines? utilization - [K04-InzA_W02]
3. Student has rudimental knowledge which is indispensable to comprehend non-technical conditions of engineering activity; knows basic health and safety procedures - [K05-InzA_W03]
4. Student knows some typical industrial technologies and has an extensive knowledge of building technologies and machines? utilization - [K07-InzA_W05]

### Skills:

1. Student can make use of analytic, simulation and experimental methods to formulate and deal with engineering tasks - [K01-InzA_U2]
2. Student can discern its systemic, socio-technical, organizational, economic and non-technical aspects - [K01-InzA_U3]
3. Student can make a preliminary economic analysis in taking up engineering activities - [K01-InzA_U4]
4. Student can make an identification of project activities and solve simple project tasks within the area of product - [K01-InzA_U6]

### Social competencies:

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1. Student is conscious of the relevance and understands non-technical aspects and consequences of engineering activity, including an impact on a human being, and connected with it , responsibility for undertaken decisions - [K01-InzA_K1]
2. Student is aware of the fact, that creating the product which fulfils the user?s needs, requires system approach - [K01-InzA_K2]

## Assessment methods of study outcomes

Formative assessment:

Classes: current/ongoing evaluation (2-5) of assigned tasks;

Lectures: evaluations based on questions relating to the presented materials during the previous lectures.

Collective assessment:

Classes: average of partial exercises; credits given after achieving at least 3.0;

Lectures: written test (3 open questions with content presented during the lectures); each question is scored 2-5 points; final result is an average of partial grades; the final test pass equals at least 3.0.

## Course description

The notion of ergonomics of products. Ergonomic quality of the product as a user?s need. Consumer?s criteria of product evaluation. Consumer (user) and his psycho-physiological needs. Methods of user?s profile identification and his needs. Functions of product from the user?s point of view. Product?s usability. Economic design. System: user-product. Product in a task based concept. Regarding the anthropometric factor. Ergonomic quality of information transfer. Physical and chemical environment. Rudiments of methodology in respect to ergonomic product design. Rules for ergonomic product design. Tools for ergonomic shaping of the product (schemes, models, mock-ups, prototypes, QFD). Research methods and evaluation of product ergonomic quality as well as its packaging. Legal regulations and norms in ergonomic design. Ergonomics and design. Structure and the product?s form. Outward appearance. Elements of form and means of expression. Selected examples of ergonomic product shaping.

## Basic bibliography:

1. Jabłoński J. (red.), Ergonomia produktu. Ergonomiczne zasady projektowania produktów (Product ergonomics. Ergonomic rules for product design), Wyd. Politechniki Poznańskiej, Poznań, 2006
2. Tjalve E., Projektowanie form wyrobów przemysłowych (The design of industrial product forms), Arkady, Warszawa, 1984

## Additional bibliography:

1. Tytyk E., Projektowanie ergonomiczne (Ergonomic design), Wydawnictwo Naukowe PWN, Warszawa, 2001.

## Result of average student's workload

| Activity | Time (working hours) |
|---|---|
| 1. lecture | 15 |
| 2. preparation for lecture credit | 20 |
| 3. classes | 15 |
| 4. preparation for classes | 30 |
| 5. consultation | 18 |
| 6. credits | 3 |

## Student’s workload

| Source of workload | hours | ECTS |
|---|---|---|
| Total workload | 100 | 4 |
| Contact hours | 50 | 2 |
| Practical activities | 15 | 1 |

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