

COURSE DESCRIPTION CARD			
The name of the course/module THEORY AND PRINCIPLES OF DESIGNING WORKPLACES ARCHITECTURAL DESIGN OF WORKPLACES 1			Code A_K_1.7_001
Main field of study ARCHITECTURE		Educational profile (general academic, practical) general academic	Year / term IV/7
Specjalization -		Language of course: Polish, English	Course (core, elective) core
Hours Lectures: 15 Classes: 45 Laboratory classes: - Projects / seminars: -			Number of points 1 + 5 = 6
Level of qualification: I	Form of studies (full-time studies/part-time studies) Full-time studie part-time studies	Educational area(s) Technical Sciences	ECTS distribution (number and %) 6 100%
Course status in the studies' program (basic, directional, other) directional		(general academic, from a different major) general academic	
Lecturer responsible for the course: prof. dr hab. inż. arch. Wojciech Bonenberg e-mail: wojciech.bonenberg@put.poznan.pl Faculty of Architecture ul. Nieszawska 13C, 61-021 Poznań tel. 61 665 32 60		Lecturer: dr inż. arch. Piotr Zierke e-mail: piotr.zierke@put.poznan.pl Faculty of Architecture ul. Nieszawska 13C, 61-021 Poznań tel. 61 665 32 60	
Prerequisites defined in terms of knowledge, skills, social competences:			
1	Knowledge:	<ul style="list-style-type: none"> ▪ student has explicit, theoretically based knowledge including the key issues of designing workplaces architecture, ▪ student has general knowledge of development trends in the scope of designing workplaces architecture, ▪ student has knowledge required for the understanding of social, economic, legal and other determinants outside the engineering field of designing workplaces architecture, 	
2	Skills:	<ul style="list-style-type: none"> ▪ student can acquire information from publications, data bases and other Polish and English sources, can interpret the said information and draw conclusions as well as voice and justify opinions, ▪ student can carry out critical analysis of the manner of operation and assess the existing solutions, systems and processes, ▪ can communicate using different techniques in the professional environment and in other environments. 	
3	Social competences:	<ul style="list-style-type: none"> ▪ student understands the need for lifelong learning; can inspire and organize process of learning other people, ▪ student is aware of the importance of non-technical aspects and effects of design activities, in this impact upon the cultural environment and liability for environment affecting decisions , ▪ can work and cooperate in a team, assuming a number of different roles therein, ▪ is aware of social role of architectural studies graduate, especially understands the needs of formulation and communication to the public, especially by mass media, information and opinions related to the achievements of technique and other aspects of engineering activity; makes efforts to provide such information and opinion in commonly understood manner. 	
Objective of the course:			
<ul style="list-style-type: none"> • get the ability to designing the complex architectural structures, • acquire experiences in the issues of architectural designing workplaces supported by relevant theoretical knowledge, • knowledge of modern methods of searching innovative design solutions with using the conceptual 			

modeling, CAAD, analyses of functional connections, • get the ability to designing the work premises (especially office premises), hygienic and sanitary premises and gastronomic premises in workplace.		
Learning outcomes		
Knowledge:		
W01	student has knowledge in the theory of architectural designing	AU1_W12
W02	knows the issues of designing work places	AU1_W16
Skills:		
U01	can communicate using different IT tools in the professional environment and in other environments	AU1_U05
U02	can carry out critical analysis of the manner of operation and assess the existing solutions as regards the engineering and structural issues in architectural designing	AU1_U12
Social competences:		
K01	observes the principles of professional ethics; is responsible for the reliability of the obtained results of his/her work and their interpretation	AU1_K02
K02	can think and act in an entrepreneurial and creative manner	AU1_K07
The evaluation methods:		
Credit conditions <ul style="list-style-type: none"> ▪ Regularity and punctuality of studying. Implementation of existing design tasks. ▪ Attention is given to effective using hours of design classes provided in the program for real project work during classes in the university, under protection of employees of Division of Work Places and Recreation (Z1). ▪ Participation in classes (related to both lectures and classes). No active attendance in more than one third of classes prevents completion of the course (even in the case of giving semester work). This condition is related to impossibility of systematic control over independent implementation of project by student in the case of absence at classes. Formative assessment: <ul style="list-style-type: none"> ▪ assessment of knowledge and presentation in the forum of group, joint analysis and discussion, ▪ assessment of delivered report with conclusions to discussion, ▪ presentation on CD with detailed draft and detailed bibliography, ▪ participation in discussions and formulation of final conclusions. Grading scale: 2,0, 3,0; 3,5; 4,0; 4,5; 5,0 Summative assessment: <ul style="list-style-type: none"> ▪ an average of partial grades (knowledge and drawing skills) Final grading scale: 2,0, 3,0; 3,5; 4,0; 4,5; 5,0 Positive grade for module depends on achieved by student all learning outcomes specified in the syllabus.		
Course contents		
Lecture: (7 two-hour lectures in winter semester + 1 one-hour lecture intended for the test of acquired knowledge). Lectures have monographic character and relate to the classes, partly expand the issues of classes. In particular concern the following issues: Specific issues: <ul style="list-style-type: none"> ▪ <u>Lecture 1. Hygienic and sanitary premises.</u> Review of existing regulations. Types of sanitary and hygienic premises. Architectural requirements related to sanitary and hygienic premises. ▪ <u>Lecture 2. Cloak-rooms and working lavatories.</u> The degree of employees soiling in technological process. Basic types of cloak-rooms and working lavatories. Functional systems. Calculation principles of number of sanitary facilities and superficial demand. Examples of architectural solutions. ▪ <u>Lecture 3. Architecture of office buildings.</u> Technology of office work. Places of office work. Process of office work. Spatial interpretation of office technology. Basic spatial and functional layouts of offices. Office building. Division of surfaces. Flexibility and multifunctionality. Structural and installation specifics. Management of office building. Ergonomics of office work. Office landscape. ▪ <u>Lecture 4. Gastronomy.</u> Technological and sanitary requirements. Dependent and independent canteens (with full production cycle). Technology of processing and food serving. Functional schemas. Examples of design solutions. 		

General issues:

- Lecture 5. Industry in the city.
Strategies of workplaces location in spatial and functional structure of urbanized areas. Production and urbanization. Workplaces, places of recreation and places of residence in the city. Transportation needs on line work – leisure – flat. Development of motorization – spatial effects.
- Lecture 6. Dynamics of industry.
Characteristic periods of development. Industrialization. Spatial expansion. Social transformations. Impact on the city infrastructure. The downfall of traditional interests of industry. Transport „work – house” as a main problem of spatial development of the city. Outside the city strategies of modern industry location. Degradation of old brownfield. Suburbanization phenomena, depopulation of city centers. Depreciation of downtown buildings in connection with downfall of traditional interests of industry. New “industries of culture” as a chance for revitalization of downtown areas.
- Lecture 7. Architecture of industry.
Methods of searching the innovative design solutions. Principles of designing. Modularity. Zoning. Repeatability. Flexibility. Multifunctionality. Mobility. Compositional order. The investment process in industry. Stages of preparation and realization of industrial plant project.

Design classes: Development of conceptual design of plant of creative industry.

Stage 1. Analysis:

2-week stage of studies of design task, enabling the start of conceptual work.

Includes:

- to study and discuss the received set of information about the topic.
- selection of technology (type of creative industry). Preliminary calculation of superficial demand on the basis of functional and usable program and adopted number of employees
- function study, implementation of schemas of functional and technological connections (variants). Estimation of surface and shape of the needed parcel, accounting for the land reserve for future extension.
- preliminary sketches of variants of land management (1:500).
- preliminary concepts of architectural form executed in the form of simple working models (e.g. texture, foamed polystyrene). During classes student should have tools (scissors, glue, scotch tape, texture, foamed polystyrene) to work with model in the class. May be useful digital camera to recording emerging ideas.

Stage 2. Conception:

3-week stage of creative work on design conception, setting the architectural and urban vision of creative industry plant. Architectural and urban conception of plant on selected parcel includes:

- preliminary development of 3 different variants of land management using working models. Variants should differ with the composition, intensity of buildings (number of storeys), the degree of plant blocking.
- study sketches.
- selection of the best variant to further development.

Stage 3. Development of conception:

6-week stage of creative work on selected design variant in the functional, technical and compositional scope.

Stage includes development of architectural design conception of plant of creative industry:

- master plan of selected variant (1:500). Plan should include: buildings, car roads, park lots for employees, park lots for customers, maneuverable squares (delivery and exportation of goods), pavements for walkers, high and low greenery, location of “small architecture”.
- schemas of movement (the flow of people and materials) on the master plan. The analysis of collision points.
- profiles of designing plant included in landscape context (1:500).
- development of architectural design of selected fragment (or the whole) of plant (1:200) with participation of classes leading. In the case of development of fragment, design work should include hygienic and sanitary subsidiaries for employees, administrative and office part and gastronomy.

The accuracy and scope of development should be close to the stage “architectural conception” (according to The Association of Polish Architects standards).

Stage 4. Graphical development (architectural marketing):

4-week stage of works on a graphical presentation of design. Includes:

- graphical development of boards „on a purely” (50x70 cm format). Development is a result of existing creative achievements and is important element of student work promotion. Has an important impact on final assessment. Should in attractive graphical form present the whole cycle of designing: preliminary compositional variants, selection of the best variant, Master Plan and architectural conception of selected variant. In assessing the emphasis will be put on correctness of functional solutions, innovation and creativity of proposed architecture and also the ability to presentation of the most important advantages of design.

Basic bibliography:

1. Bonenberg W. Przemysł w Mieście. Ekologiczna metoda modernizacji zakładów przemysłowych zlokalizowanych na obszarach intensywnie zurbanizowanych. Zeszyty Naukowe Politechniki Śląskiej. Gliwice 1985,
2. Charytonowicz J. Zasady Kształtowania laboratoryjnych stanowisk pracy. Oficyna Wydawnicza Politechniki Wrocławskiej. Wrocław. 1994.
3. Neufert E. Podręcznik projektowania architektoniczno-budowlanego. Arkady. Warszawa. 1995.
4. ROZPORZĄDZENIA MINISTRA INFRASTRUKTURY z 12 kwietnia 2002 r. w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie (Dz.U. 2002 r., Nr 75, poz. 690).
5. ROZPORZĄDZENIA MINISTRA PRACY I POLITYKI SOCJALNEJ z 26 września 1997 r. w sprawie ogólnych przepisów bezpieczeństwa i higieny pracy (Dz.U. 1997 r. Nr 129, poz. 844).
6. Werner W.A. Proces inwestycyjny dla architektów. Oficyna Wydawnicza Politechniki Warszawskiej. Warszawa. 1994.

Supplementary bibliography:

1. Małecki Z. (red). Problemy socjologiczne aglomeracji miejsko-przemysłowych. Komitet Inżynierii Środowiska PAN. Kraków. 1995.
2. Smoleń M. Przemysły kultury. Wpływ na rozwój miast. Wydawnictwo Uniwersytetu Jagiellońskiego. Kraków. 2003.
3. Szparkowski Z. Architektura współczesnej fabryki. Wydawnictwo OWPW. Warszawa. 1999.

The student workload

Form of activity	Hours	ECTS
Overall expenditure	124	6
Classes requiring an individual contact with teacher	70	3
Practical classes	54	3

Balance the workload of the average student

Form of activity	Number of hours
participation in lectures	15 h
participation in classes/ laboratory classes (projects)	45 h
preparation for classes/ laboratory classes	13 x 3 h = 39 h
preparation to colloquium/final review	15 h
participation in consultation related to realization of learning process	5 x 2 h = 10 h
preparation to the exam	0 h
attendance at exam	0 h

Overall expenditure of student:**6 ECTS credits****124 h**

As part of this specified student workload:

- activities that require direct participation of teachers:

$$15h + 45 h + 10 h = 70 h$$

3 ECTS credits