



KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI



UNIWERSYTET
JAGIELLOŃSKI
W KRAKOWIE

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SOCIETY – ENVIRONMENT - TECHNOLOGY

Course description form

2012/2013

Course title: „New Trends in Technology and Management”

Course language: ENGLISH

Course type: facultative

Year of study, semester: II/IV

Name of co-ordinator(s): Professor Maria Nowakowska

Collective point

Type of course :

Lectures – tutors: Professor Marek Szymoński, Professor Józef Dulak, Professor Ryszard Markiewicz, Professor Armen Edigarian, Professor Bogusław Kamys, Professor January Weiner.....

Number of hours: ...10.....semester: IV

Method of evaluation: **evaluation will be performed for the course as a whole**

Condition of credits:

Classes – tutor:.....

Number of hours:semester:

Method of evaluation:

Condition of credits:

Laboratory - tutor:



Number of hours:semester:

Method of evaluation:

Condition of credits:

Tutorials – tutor:

Number of hours:semester:

Method of evaluation:

Condition of credits:

Seminar – tutor: Professor Maria Nowakowska

Number of hours: ...6.....semester: **IV**

Method of evaluation: **Active participation at two levels – presentation and participation in discussion**

Condition of credits:

Exercise classes – tutor:

Number of hours:semester:

Method of evaluation:

Condition of credits:

Industrial placement – tutor:

Number of hours:semester:

Method of evaluation:

Condition of credits:



Additional information about method and condition of credits: Each student will have an evaluation sheet at which the participation at lectures and seminars will be marked together with the activity evaluation during seminars.

Pass requirements: level of attendance at the lectures - not less than 70% and attendance at all seminars. The presence at each of these activities gives 1 point, participation in discussion at each seminar 0-2 points, presentation 0-10 points. Minimal requirements – 20 points.

Prerequisites: (look instruction) Basic knowledge in natural and social sciences at high school level.

Objective of the course / expected learning outcomes:

Knowledge: Students gain an interdisciplinary knowledge on the basics of natural and social sciences. They have a view on the most important current technological and societal problems. Students appreciate the recent trends in development of disciplines under consideration. They understand the basic methodologies applied in the sciences.

Abilities: Students understand basic concepts in natural and social sciences. They are able to prepare and present the oral presentation based on the original and review papers, monographs and information gathered during the lectures given within the course. They are able to integrate the knowledge from various disciplines.

Attitude: Interest in analysis of the changes, new trends and approaches in development of science, technology and society.

Teaching methods:

Lectures and seminars. Students will participate in interdisciplinary lectures given by carefully selected top specialists in the emerging areas of science and management. They will be also suggested additional reading to broaden the knowledge on a subject presented at the lecture. Additionally, the subjects presented during the lectures will be discussed at the seminars at which students will give their presentations. The presentations will be accompanied by the general discussion.

Full description of the course / course contents:

The most important issues related to the emerging areas of science and management will be discussed. The lecture “ Atomic scale technologies for electronics of the future” will present a new approach to advanced materials for nanotechnology. In the lecture "New trends in medical biotechnology" the recent achievements in medical biotechnology will be briefly reviewed with the particular emphasis on gene transfer techniques and its application in gene therapy, stem cell biology and its stem cell therapy and tissue engineering. The lecture “Energy budget of the biosphere: human needs and renewable resource use” will discuss the issues related to energy requirements by human individuals and populations, the energy balance of the biosphere, as well as limits to biomass production and estimates of biomass production for energy. Finally it will indicate the alternatives and future prospects for use of natural resources. That will be complemented by the lecture: "Thermonuclear reactions in nature and energetics”. The reflection on data management, the new trends and strategies in information technology and future of copyright law will be discussed during the lectures: "Risk measurement and extremal value theory" and "The Future of Copyright Law". The issues presented during the lectures will be further discussed during the seminars.

Short description of the course:

New trends in nanotechnology, medical biotechnology, data management and copyright law will be presented. Novel approach to energy saving and energy budget of biosphere; human needs and renewable resource use will be taught.

Recommended reading: This point may evolve until September.