

**Teaching Program for the students of the Faculty of Medicine and Dentistry  
5-year English Program at the Pomeranian Medical University in Szczecin  
Course: "BIOLOGY"**

**Name and Address of Department:**

Department of Biology and Medical Parasitology  
al. Powstańców Wlkp. 72  
70-111 Szczecin  
phone. 0-91 466 16 72  
Fax. 0-91 466 16 71

**Head of the Department:**

Prof. dr hab. Elżbieta Kalisińska

**Person responsible for teaching the course:**

Prof. dr hab. Elżbieta Kalisińska

**Total hours:**

**45 hours total** *including*: 20 h of seminars and 25 h of practical classes

**ECTS points: 7**

**Aims of the course:**

(Expected skills and knowledge acquired during the course)

- Knowledge of basics of ecology, genetics, cell biology
- Knowledge of environmental and behavioural conditions influencing human health
- Knowledge of parasite biology, pathogenicity, epidemiology and infection pathways, knowledge of diagnostic techniques in parasitology and prophylaxis of parasitic diseases
- Ability of linking the details included in the patient's interview with the morphology of individual developmental stages of different parasite species and their location in human organism.

**Teaching Program:**

Topics of seminars:

- 1) Biology and ecology and medicine (development of biological sciences and their typology; diversity of organisms; scientific terminology; levels of organismal structure; levels of biosphere structure)
- 2) Parameters characterising human populations and its diversity. Demographic explosion
- 3) Indispensable elements (macro-, micro-, and ultra-elements) as well as toxic elements with particular emphasis on fluorine, mercury, lead, and cadmium
- 4) Xenobiotics: the environmental factors, the tolerance range, the bioaccumulation, biotransformation, biomagnification
- 5) Human immune system and parasitic diseases
- 6) Inter- and intraspecific relations with particular emphasis on parasitism
- 7) Selected environmental factors affecting human development and its health status
- 8) Developmental biology and ontogenetic development of *Homo sapiens*. Reproduction and the reproductive procedure. Sex determination in humans and other mammals (including the role of SRY gene)
- 9) Length of human life; organism aging and selected diseases and disorders of old age

10) Human Genome Project. Selected issues of genetic diagnostics and genetic therapy. The most important human genetic disorders and their detection.

Topics of practical classes:

- 1) Meiosis—human gametogenesis
- 2) Chromosome structure in prokaryotes and eukaryotes
- 3) Cytogenetic diagnostic methods
- 4) Inheritance patterns in humans. Blood types/blood groups
- 5) Basic concepts of population genetics. Hardy-Weinberg Law
- 6) Morphology, biology, and epidemiology of parasites: Protista (part 1)
- 7) Morphology, biology, and epidemiology of parasites: Protista (part 2)
- 8) Morphology, biology, and epidemiology of parasites: flatworms: Digeneans (Trematoda) and tapeworms (Cestoda)
- 9) Morphology, biology, and epidemiology of parasites: Roundworms: Nematodes
- 10) Morphology, biology, and epidemiology of parasites: Arthropods (ticks and mites)
- 11) Foundations of parasitological diagnostics.

**Forms of activities:** Theoretical genetic exercises. Examination of microscopic slides using microscopes. Power-Point presentation

**Evaluation:**


There will be four tests during the semester: three theoretical and one practical (parasite identification on a microscopic slide). The course will end with an exam. The exam will be in the form of a single-choice test (the passing limit is 60% of correct answers). It will cover the material presented on lectures, seminars and classes. Students who will get a grade average of at least 4.5 (all class tests) will have the exam covering only lecture material.

**Obligatory booklist:**

- Farabee M.J. 2006 On-Line Biology Book  
<http://www.emc.maricopa.edu/faculty/farabee/biobk/biobooktoc.html>
- Bogitsh B.J., Cheng T.C. 1999 Human Parasitology. Academic Press.
- Despommier D.D., Gwadz R.W., Hotez P.J., Knirsch C.A. "Parasitic diseases". Fifth edition. Apple Tree Productions.

**Optional booklist:**

- Connor M. and Ferguson-Smith M. 1997. Essential Medical Genetics. 5th ed. Blackwell Science
- Alicja Buczek (editor) 2006. "Parasitology for Medical Students". Koliber Publ., Lublin
- Dwivedi, S.C. 2007. Toxicology: The Science of Poisons. Jaipur, Raj. (India), Aavishkar Publishers, Distributors (eBook)

**K I E R O W N I K**  
Katedry i Zakładu Biologii  
i Parazytologii Medycznej  
  
prof. dr hab. n. biol. Elżbieta Kalisińska

.....  
Head of Department  
*Signature*

**Rules and Regulations of the Department of Biology and Medical  
Parasitology  
The course of BIOLOGY**

- 1) The course covers 45 hours including 20 hours of seminars and 25 hours of practical classes.
- 2) Both seminars and practical classes are obligatory. Only a single absence (with a documented reason) will be allowed.
- 3) There will be four partial tests during the semester: three theoretical (single choice) and one practical (parasite identification on a microscopic slide). First two theoretical tests will consist of 10 questions each (10 min each), while the third test—will include 20 questions (20 min). The dates of tests will be posted on the board next to the door of the Department and on the web page of the Department.
- 4) Students (in small teams) will prepare and present one work on a selected subject (PowerPoint and typed forms).
- 5) The course will end with an exam. The exam will be in the form of a single-choice test (the passing limit is 60% of correct answers). It will cover the material presented on lectures, seminars, and classes.
- 6) Students who will get a grade average of at least 4.5 (all class tests) will have the exam covering only lecture and seminar material. In such case the final exam grade will be determined as the average of the three: the class tests average (CT=30%), presentation (P=10%), and the exam grade (EG=60%).

Responsible for English speaking students didactics are:

Prof. Elżbieta Kalisińska

Dr. Natalia Łanocha e-mail: [nlanocha@o2.pl](mailto:nlanocha@o2.pl)

**K I E R O W N I K**

Katedry i Zakładu Biologii  
i Parazytologii Medycznej

*E. Kalisińska*

prof. dr hab. n. biol. Elżbieta Kalisińska

.....  
Head of Department

*signature*

**WE WISH YOU ALL THE BEST. DO NOT BE AFRAID.  
THIS IS A STUDENT – FRIENDLY DEPARTMENT ☺**