UNIWERSYTET GDAŃSKI

Course title
Podstawy biologii komórki eukariotycznej / Introduction to eukaryotic cell biology

ECTS code
13.3.0467

Name of unit administrating study
Faculty of Chemistry

Studies

Field of study	Type	Form	
Chemistry	Bachelor	Full-time studies	

Teaching staff
Dr hab. Agnieszka Żylicz-Stachula, prof. nadzw.

Forms of classes, the realization and number of hours

A. Forms of classes, in accordance with the UG Rector's regulations
lecture

B. The realization of activities
in-class learning

C. Number of hours
30 h lecture

ECTS credits 2

classes - 30 h
tutorial classes – 5 h
student's own work – 15 h

Total: 50 h - 2 ECTS

The academic cycle
2019/20 summer semester

Type of course
obligatory

Language of instruction
Polish

Teaching methods

Lecture with multimedia presentation
Problem-based Learning
Group work and discussion

Form and method of assessment and basic criteria for evaluation or examination requirements

A. Final evaluation, in accordance with the UG study regulations
course completion (with a grade)

B. Assessment methods
written test

C. The basic criteria for evaluation or exam requirements

- Assessment with final grade:
  final written test (single-choice test questions),
  and active participation in the scientific debate
- essay or presentation, assessed for advanced ability to locate and evaluate Web-based information
- final grade according to the scale of grades given in the Study Regulations
- supplementary oral or written evaluation for students who did not obtain the required 51% in the first term

Required courses and introductory requirements
general chemistry, organic chemistry, biochemistry
proper use of the chemical/biological terminology and nomenclature,
knowledge of nucleic acids and protein structure

Aims of education

1. acquainting students with all issues mentioned in the lecture's program content;
2. acquainting students with the basics of biology and physiology of the eukaryotic cell;
3. acquainting students with cellular DNA repair mechanisms;
4. acquainting students with the causes and factors leading to malignant transformation;
5. acquainting students with contemporary methods used in oncological diagnostics;
6. acquainting students with actual methods of treatment and future trends in modern oncology;

Course contents

structure of a cell; basics of biology and physiology of eukaryotic cell; DNA repair mechanisms; mechanisms and regulation of eukaryotic cell division; stem cells; oncogenes and suppressor genes (definitions, examples); basic properties of the cancer cell; cancer classification (TNM staging system); angiogenesis; genetic and environmental factors leading to malignant transformation; selected diagnostic methods in oncology; selected anticancer therapies, history of cancer research; personalization of medicine;

Bibliography of literature

A. Literature required to pass the course

Alberts, B., Bray, D., Hopkin, K., Johnson, A., Lewis, J., Raff, M., Roberts, K., Walter, P. Podstawy biologii komórki PWN, 2009

B. Extracurricular readings

1. Buckingham, M.L., Flaws, L.: Molecular diagnostics: Fundamentals, Methods and Clinical Applications 2007
2. Alberts, B., Bray, D., Hopkin, K., Johnson, A. Essentials of cell biology 3 edition, 2009
3. Elsersawi, A.: Chemistry, biology and cancer: the bond 2009
4. Alberts, B., Johnson, A., Lewis, J., Raff, M.: Molecular Biology of the Cell 2007
5. R.A. Weinberg The biology of cancer. 2014
6. L. Pecorino Molecular biology of cancer. 2012
7. R.E. LaFond Cancer. The outlaw cell 2012

Knowledge

1. describes eukaryotic cell structure,
2. describes selected DNA repair mechanisms,
3. understands and describes mechanisms of neoplastic transformation,
4. lists and discusses the characteristics of a cancer cell,
5. lists and characterizes biological, chemical, physical and genetic factors leading to neoplastic transformation,
6. lists, characterizes and understands selected methods used in oncological diagnostics,
7. understands and describes the classification of cancers
8. lists and describes phases of clinical trials of new anticancer drugs

Skills

Social competence

1. understands the need for further education,
2. is cautious and critical when expressing opinions,
3. acquires the skill of scientific discussion