

Kamila Misiakiewicz, MD

## **English Program**

### **Biology – preparatory course. Syllabus 2011/2012**

1. Cell structures and functions.
2. Membrane structure and function (membrane transport).
3. An introduction to metabolism (forms of energy, ATP, enzymes).
4. Cellular respiration (glycolysis, citric acid cycle, electron transport, chemiosmosis).
5. Cell division: mitosis.
6. Cell division: meiosis.
7. On the trial of heredity (the law of segregation, Mendel's model, phenotype vs. genotype, recessively inherited disorders)
8. Genes and chromosomes (sex-linked genes, genetic disorders).
9. The molecular basis of genetics (Structural model of DNA, replication, transcription, translation).
10. Regulation of gene expression.

### Recommended literature:

1. Neil A. Campbell, Jane B. Reece: "Biology", Pearsons Benjamin Cummings, 8<sup>th</sup> ed. 2008
2. Alberts B., Johnson A., Lewis., J.: "Molecular Biology of the Cell", 4<sup>th</sup> ed. 2002
3. William S. Klug, Michael R. Cummings, Charlotte A. Spencer: "Essentials of Genetics", 7<sup>th</sup> ed. 2010