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|  | **UNIVERSITY OF BANJA LUKa**Faculty of Medicine Deparmtent of Human genetics |  |

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| **School year** | **Course**  | **Study program**  | **Cycle study** | **Year of study** | **Semester** | **Number of students** | **Number of practical groups**  |
| 2024/2025. | Biology of cell and human genetics  | Medicine  | First | First | I |  | 3 |

**PLAN AND PROGRAM OF LECTURES**

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| **Week I** | **Lecture** | **Tematic unit**  | **Day** | **Date**  | **Time**  | **Place**  | **No.of classes**  | **Professor**  |
| I | 1 | Introduction to Cell Biology. research methods in Cell biology  | Thursday  | 3.10.2024. | 12:30-14:00 | Amphitheater  | 2 | Dr. Vanja Vidović, assisstant professor  |
| II | 2 | Evolution of the cell | Thursday | 10.10.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović. assisstant professor |
| III | 3 | Chemical components of the cell: water, ions, elements, carbohydrates, lipids, nucleic acids and proteins. | Thursday | 17.10.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| IV | 4 | Structure of acellular forms of life (viruses, prions and viroids). | Thursday | 24.10.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| V | 5 | Organization of the prokaryotic cell (bacteria and cyanobacteria). | Thursday | 31.10.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| VI | 6 | Organization of the eukaryotic cell (animal and plant). | Thursday | 7.11. 2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| VII | 7 | Structure and role of membranes and membrane transport  | Thursday | 14.11. 2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| VIII | 8 | Structures and roles of cytoskeleton , centrioles , cilia and flagella, endoplasmic reticulum, Golgi complex | Thursday | 21.11. 2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| IX | 9 | Structure and role of lysosomes , peroxisomes | Thursday | 28.11. 2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| X | 10 | Glycolysis, cellular respiration, enzymes  | Thursday | 5.12.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| XI | 11 | Structure and role of ribosomes and nucleus  | Thursday | 12.12. 2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| XII | 12 | Chromosomes, DNA, RNA | Thursday | 19.12.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| XIII | 13 | Cell cycle. Apoptosis  | Thursday | 26.12.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| XIV | 14 | Medical cytology | Thursday | 16.1.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |
| XV | 15 | Test I | Thursday | 23.1.2024. | 12:30-14:00 | Amphitheater | 2 | Dr. Vanja Vidović, assisstant professor |

**PLAN OF EXERCISES**

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| **Week** | **Exercise**  | **Thematic unit** |
| I | E1 | Microscope and usage of microscope. Methods in cellular research. |
| II | E2 | Microscopic specimen production. Methods of cell cultures *in vitro*.  |
| III | E3 | Acellular form of life- viruses, prions and viroids.  |
| IV | E4 | Prokaryotic cell- bacteria and cyanobacteria  |
| V | E5 | Eukaryotic cell- algae and fungi |
| VI | E6 | Plant cell- cell wall, cytoplasm, plastids |
| VII | E7 | Animal cell- cell membrane and transport |
| VIII | E8 | Animal cell- endoplasmic reticulum, Golgi complex, lysosomes and peroxisomes |
| IX | E9 | Animal cell- mitochondria, cytoskeleton, centrioles, cilia and flagella |
| X | E10 | Animal cell- nucleus and nucleolus |
| XI | E11 | Mitosis and meiosis, gametogenesis |
| XII | E12 | Techniques of chromosome analysis  |
| XIII | E13 | Apoptosis . |
| XIV | E14 | Medical cytology |
| XV | E15 | Colloquium 1 |