

## Syllabus of Zoo-109

- **Macromolecules:**
  - Carbohydrates
  - Lipids
  - Proteins
  - Nucleic acids
- **Viruses**
- **Prokaryotes**
  - Bacteria & Archaea
- **Eukaryotes (Basics of cell Biology):**
  - Cell types (plant & animal cell).
  - Cell organelles (animal cell)
- **Cellular transport (active & passive)**
- **Enzymes and metabolic control**
- **Cellular respiration (production of ATP)**
- **Cell division (cell cycle)**
  - Mitotic division
  - Meiotic division (and sexual life cycle)
- **Molecular Biology (information codes and genes):**
  - DNA and DNA-replication
  - RNA and RNA-transcription
  - From gene to protein (RNA translation)
- **Mendel and the gene idea:**
  - First law of Mendel
  - Second law of Mendel
  - The genetic diseases, sex-linked disorders and mutations
  - The chromosomal bases of inheritance
- **Chemical signals in animals (endocrine system and hormonal regulation).**

### **Main book**

**Campbell, N. A. and Reece, J. B. (2011). Biology (9<sup>th</sup> edition).  
Pearson Education. Inc. USA.**