Biology

Brief Preparation Instructions

- The cell nucleus – chromosome and chromosome structure
- Basic genetic mechanisms – DNA replication, transcription, translation
- Organelles and their functions
- Mitosis and meiosis
- Respiratory chain, photosynthesis
- Physiological functions in plants
- Physiological functions in animals
- Taxonomy and nomenclature
- Systematic biology and evolution

Ecology

Brief Preparation Instructions

- Adaptations to the environment
- Population ecology: distribution and abundance, population dynamics, life histories
- Species interactions
- Nutrient cycling and retention
- Community ecology, succession and stability
- Ecosystems

Botany

Brief Preparation Instructions

- Classification, evolution, modern systems
- Diversity, morphology and biology of important groups of prokaryotes, fungi, lichens, mosses, gymnosperms and angiosperms

Zoology

Brief Preparation Instructions

- Ground plans, basal overview of higher classification of animals
- Classification, morphology and biology of important groups of invertebrates and vertebrates

Recommended Resources

Books

Raven P.H., Jonson G.B., Mason K.A., Losos J. & Duncan T. 2022: Biology, 13th Ed. McGraw Hill, ISBN-13: 978-1265128845

Sher A. & Molles M. 2021: Ecology: Concepts and Applications, 9th Ed. McGraw Hill, ISBN-13: 978-1260722208

Mauseth J.D. 2021: Botany: An Introduction To Plant Biology, 7th Edition. Jones & Bartlett, ISBN-13: 978-1284157352

I'Anson H., Hickman C., Keen S., Eisenhour D.J. & Larson A. 2023: Integrated Principles of Zoology, 19th Ed. McGraw Hill, ISBN-13: 978-1266263293

Online resources

Clark M.A., Douglas M. & Choi J. 2018: Biology 2e.
https://openstax.org/details/books/biology-2e/ ISBN-13: 978-1-947172-52-4