Textbook and Resources:

2) The course material including lectures is available on Moodle
3) McGraw-Hill Higher Education website: review course material, watch animations and videos online, practice sample questions
   http://highered.mcgraw-hill.com/sites/0073383074/student_view0/
4) Connect–McGraw Hill: access ebook, practice exam questions online, watch videos/animations and more!

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<tr>
<th>Instructor</th>
<th>Teaching assistant</th>
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<tbody>
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<td>Noël Ghanem, PhD</td>
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<td>AUB Extension: x 3915</td>
<td>x 3903</td>
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<td>Office hours: by appointment only</td>
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Course syllabus

Unit 1: Molecular Basis of the life, Cell Structure and Membranes
Chapters 1 (20 and 21): The science of Biology / Evolution
Chapter 3: The chemical buildings of life
Chapter 4: Cell structure
Chapter 5: Membranes

Unit 2: Cell metabolism, Photosynthesis and Cell communication
Chapter 6: Energy and metabolism
Chapter 7: How cells harvest energy
Chapter 8: Photosynthesis
Chapter 9: Cell communication

Unit 3: Reproduction, Cell cycle control, Chromosome mapping
Chapter 10: how cells divide
Chapters 11: Sexual reproduction and meiosis
Chapter 12: Patterns of inheritance
Chapter 13: Chromosomes, mapping and the meiosis-inheritance connection

Unit 4: DNA replication and transcription and Protein Translation
Chapter 14: DNA: the genetic material
Chapter 15: Genes and how they work

Unit 5: The Tree of life, Viruses and Bacteria
Chapters 23 and 26: The Tree of life
Chapter 27: Viruses
Chapter 28: Prokaryotes
Protists, Fungi and the animal kingdom (Invertebrates) covered in the laboratory

Exam Schedule

Midterm 1 (20%): Wednesday, October 9, 2013
Midterm 2 (20%): Wednesday, November 6, 2013
Final Exam (35%): To be determined
Laboratory reports and final exam (25%)
Learning outcomes

The students will be able to:

1. understand the role of biology and the relevance of different biological processes to our daily life (PLOs 2 and 3a-3c)
2. use the microscope and learn the basic skills of light microscopy (PLOs 5c-5e)
3. describe the structure of the cell and learn the function of its different components (PLOs 2b, 2e and 3b)
4. compare a prokaryotic and a eukaryotic cell and highlight their differences (PLOs 2b, 2h-2j and 3b)
5. learn the basic concepts in cell metabolism and photosynthesis (PLO 4b)
6. study the processes of cell division and sexual reproduction (PLOa 2c and 2j)
7. learn the principles of genetics and solve genetic problems (PLO 2c)
8. study the molecular characteristics of nucleic acids (DNA and RNA) and how nucleic acids and protein synthesis are interrelated (PLOs 3a and 4a)
9. acquire an overview of the theory of evolution, the origin and the biodiversity of life (PLOs 2h-2j)
10. acquire an overview of the classification of living organisms and their major characteristics (PLOs 2j and 3c)
11. Test hypotheses, run simple experiments and interpret the data inside the laboratory (PLOs 5c-5e).
12. Learn how to work in a safe and efficient environment inside the laboratory (PLOs 6a-6c)