



- **Course Instructors**

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- **Course Coordinator**

Prof. Zuhair Amr and Dr. Nisreen Al-Quraan

- **Course References:**

**Biology**, 11<sup>th</sup> Edition 2018 by Campell NA, Urry LA, Cain ML, Wasserman SA, Minorsky PV and Reece JB

- **Course Description**

General Biology (BT103) is devoted to the study of the cellular and molecular basis of life. Students are expected to develop an understanding of certain core concepts of biology including cell structure and physiology, information flow, metabolism, cellular reproduction, Mendelian genetics, mammalian systems & protective mechanisms.

- **Course learning Outcomes:** Upon completion of the course, the students should be able to:

Outcome	Weight (%)	Mapped Program Outcome and Level
1- Describe the structure, characteristics and functions of carbohydrates, lipids, proteins and nucleic acids.	10	1A
2- Become familiar with basic unit of life, how prokaryotes and eukaryotes are different and identify organelles and structures in animal and plant cells and how they differ from each other.	10	1A
3- Analyze and explain the processes associated with and the role of the cell membrane in the processes of osmosis, diffusion and transport.	10	1A
4- Explain how metabolic pathways are performed in plants and animals in the form of cellular respiration.	10	1A
5- Describe the molecular bases of cell cycle and how mitosis and meiosis are differentiated in addition to their goals and outcomes.	20	1A
6- Define and apply the principles of Mendelian genetics and its modern extensions to the unity and diversity of life	15	1A
7- Understand the molecular and chromosomal basis of heredity	10	1A
8- Describe the anatomical structure and physiological functions of tissues and organ systems of the human body	15	1A

• **Course Content:**

Week	Topics & Concepts	Chapter in Reference (Pages)
1+2	<b>Biological Macromolecules and Lipids</b> Concepts 5.1, 5.2, 5.3, 5.4, 5.5 & 5.6	5 (114-139)
3+4	<b>Cell Structure and Function</b> Concepts 7.1, 7.2, 7.3, 7.4, 7.5, 7.6 & 7.7	7 (163-190)
5	<b>Cell Membranes</b> Concepts 8.1, 8.2, 8.3, 8.4 & 8.5	8 (196-212)
6	<b>Cell Respiration</b> Concepts 10.1, 10.2, 10.3, 10.4 & 10.5	10 (236-254)
7	<b>Mitosis</b> Concepts 12.1, 12.2 & 12.3	12 (284-302)
8	<b>Sexual Life Cycles and Meiosis</b> Concepts 13.1, 13.2, 13.3 & 13.4	13 (304-318)
9	<b>Mendelian Genetics</b> Concepts 14.1, 14.2 & 14.3	14 (319-333)
10	<b>Nucleic Acids and Inheritance</b> Concepts 16.1 & 16.2	16 (364-379)
11	<b>Animal Defenses Against Infection</b> Concepts 47.1, 47.2 & 47.3	47 (1098-1116)
12+13	<b>Animal Transport Systems [Mammal Concepts 43.2, 43.3, 43.4]</b> 43.5 ( <u>Lungs only</u> ) 43.6 ( <u>How mammal breathes only</u> ) 43.7 ( <u>Adaptation</u> )	43 (1000-1013) (1016-1018) (1019-1020) (1021-1023)
14	<b>Animal Digestive Systems [Mammalian]</b> Concepts 42.3 & 42.5	42 (979-985) (988-992)

• **Course Evaluation:**

Assessment Type	Weight (%)
First Exam (TBD)	25
Second Exam (TBD)	25
Final Exam (TBD)	50
<b>Total</b>	<b>100</b>

• **First Exam Material:**

**Ch.5** (Biological Macromolecules and Lipids), **Ch.7** (Cell Structure and Function) and **Ch.8** (Cell Membranes)

• **Second Exam Material:**

**Ch. 10** (Cell Respiration), **Ch. 12** (Mitosis) and **Ch.13** (Sexual Life Cycles and Meiosis)

• **Final Exam Material:**

**Ch. 14** (Mendelian Genetics), **Ch. 16** (Nucleic Acids and Inheritance) and **Ch.42** (Animal Digestive Systems [Mammalian]), **Ch. 43** (Animal Transport Systems [Mammalian]) and **Ch.47** (Animal Defenses against Infection)

**Course Policies:**

1. Your class attendance is mandatory. Absences in excess of 20% of the total lecture hours will result in your being dropped from the course with a failing grade.
2. Make-up exam appeals should be filed within two days of the missed exam.
3. Cell phones are prohibited during examinations and must be turned off during lecture. No incoming or outgoing calls or text messages are allowed.
4. Unethical conduct, including cheating during examinations, will result in punishment by the university administration.