Hashemite University
School of Physical Education and Sport Sciences
COURSE SYLLABUS
Sport Biochemistry (110601228)
3 Credit Hours (3 contact hours)
Fall 2020 Semester
Section 1

Instructor: Mo'ath Bataineh, PhD

Class times: Sunday, Tuesday, Thursday 10:00-10:50am. Online

Office Hours: Sunday, Tuesday 12:15-11:15pm. Other times by appointment.

Email: mfmbataineh@hu.edu.jo

Required Text:

- Donald MacLaren, and James Morton 2011, **Biochemistry for Sport and Exercise Metabolism**, 1st Edition, Wiley.

Suggested Reading:

- Houston, M.E. 2006, *Biochemistry Primer for Exercise Science*, 3rd Edition, Champaign IL: Human Kinetics.
- Houston, M.E. 2001, *Biochemistry Primer for Exercise Science*, 2nd Edition, Champaign IL: Human Kinetics.
- Mougios, Vassilis. 2006, *Exercise biochemistry*, Champaign IL: Human Kinetics.
- Hargreaves, M., and Thompson, M. 1999, *Biochemistry of exercise X*, Champaign IL: Human Kinetics.

Course Description: Examines the metabolic and biochemical basics and adaptation of the body in response to physical activity and training; the subcellular and enzymatic regulation and integration during exercise. Focus is also given to substrate metabolism, bioenergetics, hormonal action and nutritional influences as related to exercise.

Course Learning Outcomes:

Upon the completion of the supervised practice, the student will be able to:	**Covered in:**	**Assessment Method**
1. Discussion of the basic physical and biochemical concepts	Units 1&3	- Quizzes - Exams
2. Discussion of the biochemical basis of metabolism and proceeding through levels of increasing complexity.	Units4-6	- Quizzes - Exams

3. Discussion of the role of energy sources and metabolic regulation in physical performance and fatigue.	Units 7-9	- Quizzes - Exams
4. Apply appropriate knowledge in understanding Sport biochemistry	Units 1-9	-Term Project Report

Grading Scale:

Letter Grade	**Points Earned**
A+	≥ 90
A	86-89
A-	82-85
B+	78-81
B	74-77
B-	70-73
C+	66-69
C	62-65
C-	58-61
D+	54-57
D	50-53
F	≤ 49

Grading and Evaluation:

Quizzes (2)	**20% (10% each)**
Mid Term	**40%**
Final Exam	**40%**

Course Content:

- Energy sources for muscular activity
- Biochemical concepts
    - Organization of matter
    - Chemical bonding
    - Chemical reactions, ATP and energy
    - Water
    - Acid-base balance
- Proteins
- Carbohydrates
- Lipids
- Principles of metabolic regulation
- High-intensity exercise
- Endurance exercise
- High-intensity intermittent exercise

Class Schedule:

Week	Date	TOPIC	Student Activities
1		**Unit 1:** Energy sources for muscular activity	**Class discussion:**
2 & 3		**Unit 3:** Biochemical concepts	**Class discussion:**
4-6		**Unit 4:** Proteins	**Reading Assignment**
5	**Nov. 8th**	**Quiz #1**	**Unit 3**
7-9		**Unit 5:** Carbohydrates	**Class discussion:**
9	**Nov. 29th**	**Mid-Term Exam**	**Units 1, 3, 4**
10		**Unit 6:** Lipids	**Class discussion:**
10	**Dec. 8th**	**Quiz #2**	**Unit 5**
11		**Unit 7:** Principles of metabolic regulation	**Class discussion:**
12		**Unit 8:** High-intensity exercise	**Class Discussion:**
12		**Unit 9:** Endurance exercise	**Class discussion:** **Reading Assignment:**
13-15		**FINAL EXAM**	**Units 1, 3-9**

Exams:

- Exam material will be taken from lectures and text book.

Points of Importance:

- Tardiness or absence in the classroom will not be permitted unless proper documentation is shown. A **1 POINT DEDUCTION** will occur each time this happens
- Short exams will be held without prior notice at the beginning of class time and the score will be either +1 or -1.
- No make-up exams will be offered without proper documentation