



The Hebrew University of Jerusalem

Syllabus

EXERCISE PHYSIOLOGY & BIOCHEMISTRY - 71943

Last update 17-10-2021

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: Biochemistry, Food Science and Nutrition

Academic year: 0

Semester: 1st Semester

Teaching Languages: English

Campus: Rehovot

Course/Module Coordinator: Dr. Naama Constantini

Coordinator Email: naamacons@gmail.com

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Naama Constantini,
Ms. Rakefet Arieli,
Dr. Ronen Reuveny

Course/Module description:

The course integrates multiple content areas (physiology of effort, sports medicine, sports nutrition) to give a comprehensive picture of the reactions, needs, and health gains during physical activity and engaging in various athletic activities

Course/Module aims:

To gain knowledge of various fields of activity and physical training and sport nutrition

Learning outcomes - On successful completion of this module, students should be able to:

Analyze physical effort from the perspective of energy supply
Build a prescription of basic training for developing aerobic fitness
Measure and evaluate body composition
Identify the nutritional needs of amateur and professional athletes

Attendance requirements(%):

Teaching arrangement and method of instruction: Frontal lecture, home exercises, lab

Course/Module Content:

Basic concepts in physical activity and physical fitness
Importance of physical activity in disease prevention
Energy supply to the muscle at rest and effort
Properties of physiological chain in rest and effort
Indirect calorimetry
Substrates for energy production at rest and effort
Physiology of effort and PG in children and adolescents
Laboratory physiology of the effort
Laboratory assessment of body composition
Components of physical fitness and activity in pyramid workout : prescribing practice to improve aerobic fitness , muscular fitness , and flexibility .
Exercise special populations and situations
Eating disorders and triple syndrome of athlete

Exercise and dietary supplements : Iron deficiency and anemia, calcium and vitamin D , materials Argoniim
Principles of Sports Nutrition and Exercise - Energy balance
Micro and macro nutrients
Fluid and electrolyte effort
Timing of Eating

Required Reading:

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Additional Reading Material:

1. נייס, ש. וענבר, ע. (2003). הפיזיולוגיה של המאמץ. הוצאת פוקוס.
2. נייס, ש. וקונסטנטיני, נ. (2011). מרשם אישי לאימון גופני ולבריאות. הוצאה עצמית.
3. American College of Sports Medicine. ACSM Guidelines for Exercise Testing and Prescription 11th Ed. Philadelphia PA, 2018.
4. Wilmore JH, Costill DL. Physiology of Sport and Exercise 6th Ed. Champaign, IL: Human Kinetics, 2015.
5. Jeukendrup A, Gleeson M. Sport Nutrition 3th Ed. Human Kinetics, 2018.
6. Spano M, Kruskall L, Thomas T. Nutrition for Sport, Exercise, and Health. Human Kinetics, 2018.

Course/Module evaluation:

End of year written/oral examination 80 %
Presentation 20 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:

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