

Dentistry			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

## Course Introduction and Application Information

Course Code:	UNI348		
Course Name:	Exercise Physiology		
Semester:	Fall		
Course Credits:	<div>ECTS</div> <div>5</div>		
Language of instruction:	Turkish		
Course Condition:			
Does the Course Require Work Experience?:	No		
Type of course:	University Elective		
Course Level:	<div>Bachelor</div> <div>TR-NQF-HE:6. Master`s Degree</div> <div>QF- EHEA:First Cycle</div> <div>EQF-LLL:6. Master`s Degree</div>		
Mode of Delivery:	E-Learning		
Course Coordinator:	Dr. Öğr. Üy. ŞEYDA NUR DAĞLI		
Course Lecturer(s):	Dr. Öğr. Ü. Şeyda Nur DAĞLI		
Course Assistants:			

## Course Objective and Content

Course Objectives:	It is examined how exercise, which is one of the biggest stresses applied to the body, forces the physiological mechanisms, how the systems respond and adapt to this stress.
Course Content:	<p>Define physiology and exercise,</p> <p>Understanding the energy metabolism activated during exercise</p> <p>While exercising; To learn the structural changes and adaptations in the cardiovascular,</p>

pulmonary, skeletal, nervous, excretory and endocrine systems.

Understanding the effects of age, gender, environmental conditions, nutrition and ergogenic supports on exercise

Counting the effects of exercise on health

Talking about clinical exercise

## Learning Outcomes

The students who have succeeded in this course;

- 1) Define physiology and exercise, Will be able to learn the history of exercise physiology, Will be able to learn the acute and chronic changes that the body gives to exercise, To be able to count the homeostatic mechanisms in our body,
- 2) To understand the basics of metabolism, Will be able to learn energy transfers, Will be able to define oxidation-reduction reactions, Will learn the energy sources used during exercise, Calculate the energy obtained from energy sources in kcal, Count the main energy materials for metabolism, Define energy systems,
- 3) Understand the basic structure of skeletal muscle, To learn the mechanism of muscle contraction, Classify muscle fibers Will be able to explain muscle shaping to adapt to the exercise,
- 4) Understand the basic mechanism of the nervous system, Will be able to comprehend the contraction of the nervous system with the muscle, Will be able to learn the neuromuscular junction,
- 5) To learn the structure and mechanism of the respiratory system, Count the lung volumes and capacities, Will be able to describe lung functions that change during exercise, Compare ventilatory changes before, during and after exercise, Define concepts such as dyspnea, hyperventilation and muscle pain,
- 6) Explain the structure and functions of the cardiovascular system, Understand the acute changes in the cardiovascular system such as heart rate, cardiac output, oxygen consumption and blood pressure during exercise, Will be able to describe chronic changes such as hypertrophy and hyperplasia in the cardiovascular system during exercise, Count the positive effects of exercise on the cardiovascular system,
- 7) Describe the components and functions of the immune system, Count exercise plasma proteins, Explain the immune response of acute and chronic exercise, Will be able to comprehend exercise endocrinology, which describes the changes and effects of hormones during exercise,
- 8) Define the relationship between exercise and disease prevention, Explain the role of exercise in the treatment of non-communicable chronic diseases, To be able to determine exercise tests for health,
- 9) Explain the effect of healthy nutrition on exercise performance, Will be able to define the way of nutrition to increase performance,
- 10) Define what electrolytes are, explain their functions, Explain how exercise affects fluid and electrolyte balance, Be able to identify hyponatremia, Explain the optimum fluid and electrolyte consumption in order to increase exercise performance,
- 11) Will be able to learn how environmental conditions such as cold, heat and altitude affect the ability to exercise, You can define the emphasis,
- 12) Define ergogenics, To be able to count prohibited and legal nutritional supplements in sports competitions,
- 13) Explain the effects of exercise in children, Will be able to tell how many hours of exercise should be done in children in which age range, be able to define aging, Explain the effect of exercise on the elderly
- 14) Will be able to explain in general which diseases exercise can be used in the treatment of
- 15) To be able to search for articles in international databases such as Pubmed, To have information about how the article was prepared, Learn to prepare and make presentations

## Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction to Exercise Physiology	1. Guyton ve Hall (2016).Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. Mehmet Ünal (2019). Exercise Physiology. Istanbul Medical Bookstores. 1st Edition.
2)	Energy Metabolism in Exercise	1. Guyton ve Hall (2016). Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. 5. Jonathan K. E., Dennis J. K., Steven J. K. (2018). Advanced Exercise Physiology. Hipokrat publishing house.
3)	Skeletal-Muscular System in Exercise	1. Guyton ve Hall (2016). Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. Erdal AĞAR (2021). Human Physiology. Istanbul Medical Bookstores. 1st Edition. Turkish Physiological Sciences Association
4)	Nervous system in exercise	1. Guyton ve Hall (2016). Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. Erdal AĞAR (2021). Human Physiology. Istanbul Medical Bookstores. 1st Edition. Turkish Physiological Sciences Association
5)	Pulmonary system in exercise	1. Guyton ve Hall (2016). Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. 5. Jonathan K. E., Dennis J. K., Steven J. K. (2018). Advanced Exercise Physiology. Hipokrat publishing house.
6)	Cardiovascular System in Exercise	1. Guyton ve Hall (2016). Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. 5. Jonathan K. E., Dennis J. K., Steven J. K. (2018). Advanced Exercise Physiology. Hipokrat publishing house.
7)	Endocrine system in exercise	1. Guyton ve Hall (2016).Medical Physiology. Güneş Medical Bookstores. 13. Edition 2. Erdal AĞAR (2021). Human Physiology. Istanbul Medical Bookstores. 1st Edition. Turkish Physiological Sciences Association 3. Mehmet Ünal (2019). Exercise Physiology. Istanbul Medical Bookstores. 1st Edition.
8)	Exercise and Health	1. Guyton ve Hall (2016). Medical Physiology. Sun Medical Bookstores. 13. Edition 2. William J. Kraemer, Steven J. Fleck, Michael R. Deschenes (2018). Exercise Physiology. Palme Publishing. 2nd Edition.
9)	Exercise and Nutrition	1. Guyton ve Hall (2016). Medical Physiology. Sun Medical Bookstores. 13. Edition 2. Mehmet Ünal (2019). Exercise Physiology. Istanbul Medical Bookstores. 1st Edition.
10)	Fluid and Electrolytes in Exercise	1. Guyton ve Hall (2016). Medical Physiology. Sun Medical Bookstores. 13. Edition 2. William J. Kraemer, Steven J. Fleck, Michael R. Deschenes (2018). Exercise Physiology. Palme Publishing. 2nd Edition.
11)	Exercise and Environmental	1. Guyton ve Hall (2016). Medical Physiology. Sun Medical Bookstores. 13. Edition 2. Erdal AĞAR (2021). Human Physiology. Istanbul Medical Bookstores. 1st Edition.







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scientific criteria and <b>Course Learning Outcomes</b> Support the professional development of the team.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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### Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	Has basic and up-to-date knowledge in the field of dentistry, follows scientific publications, and applies evidence-based data to his/her professional practice.	
2)	Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.	
3)	Evaluates the knowledge in the field of dentistry critically, integrates it with the knowledge of disciplines in the field of health, uses it by analyzing and synthesizing it.	
4)	Produces projects related to the field of dentistry, can work with other health disciplines, takes part as a member of the research team and evaluates and reports the results obtained at a scientific level.	
5)	Uses information that will contribute to the dentistry profession during practice, takes responsibility, and produces solutions in unforeseen situations.	
6)	Shares, compares, and exchanges dental knowledge with professional colleagues in social and scientific environments in written, verbal, and visual forms.	
7)	Within the framework of social, scientific, and ethical values including patient privacy, communicates with patients and their relatives, knows all the characteristics of the patient, and recommends the most appropriate treatment with a patient-centered approach.	
8)	Follows technological developments, participates in national and international studies, and shares and presents own observations, experiences, and research to further advance dental practices.	
9)	By adopting the principle of lifelong learning throughout the dentistry profession, follows current evidence-based dental knowledge and uses it during his professional practice.	
10)	During dental practice, in cases such as abuse and addiction, performs the treatment by exhibiting the behaviors required by social ethics and legal rules, and collects and records the relevant data.	



11)	Uses basic and current knowledge in the field of dentistry during professional practice for the benefit of society within the framework of national values and country realities.	
12)	In natural disasters and emergency cases, takes the protective measures required by the dentistry profession; performs professional practices that benefit patients and society	
13)	Generates ideas regarding health policy in dentistry, prioritizes individual and public health, and carries out preventive and therapeutic medical practices within the framework of scientific, ethical, and quality processes.	
14)	Differentiates the signs and symptoms commonly encountered in the dentistry profession, makes a treatment plan and refers when necessary, and manages diseases and clinical situations regarding their urgency and patient priority.	
15)	Can assume the leadership responsibility of the team he/she works for, manage it following scientific criteria, and support the professional development of the team.	

### Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Presentation	1	% 30
Final	1	% 70
<b>total</b>		<b>% 100</b>
PERCENTAGE OF SEMESTER WORK		% 30
PERCENTAGE OF FINAL WORK		% 70
<b>total</b>		<b>% 100</b>

### Workload and ECTS Credit Calculation

Activities	Number of Activities	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	2	0	14		28
Study Hours Out of Class	4	3	2		20
Presentations / Seminar	1	6	6	12	24
Final	1	14	14	28	56

