



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Non-Ionizing Radiation and Environmental							
Course Code		ÇS210		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	4	Workload	72 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Understanding the basic concepts of Electromagnetic spectrum and electromagnetic waves, effects of non-ionized and ionized radiation on humans and environment.							
Course Content		Understanding the basic concepts of Electromagnetic spectrum and electromagnetic waves, effects of non-ionized and ionized radiation on humans and environment.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

### Recommended or Required Reading

1	1. Prof.Dr.M.Dinçer Bilgin, Tıp fakültesi Biyofizik Ders Notları, Aydın 2011.
2	2. Prof.Dr.Şefik Dursun (Ed) Biyofizik Ders Kitabı, İ.Ü yayınları, İstanbul 2010.
3	3. Prof.Dr.Gülbüz Çelebi, Biyomedikal Fizik, Barış yayınları, İzmir 2008.

Week	Weekly Detailed Course Contents	
1	Theoretical	Electromagnetic waves and general properties
2	Theoretical	Electromagnetic spectrum
3	Theoretical	Radiofrequency and Microwaves
4	Theoretical	Effects of mobile phone and base station on health and environment
5	Theoretical	Protection from Electromagnetic radiation
6	Theoretical	Infrared waves and effects
7	Theoretical	Effects of visible lights on health; colors
8	Theoretical	Midterm
9	Theoretical	Scattering and reflection of lights
10	Theoretical	Protection from UV and Sun
11	Theoretical	Ozone formation, destruction, measurement, impact
12	Theoretical	UV index and UV radiation
13	Theoretical	Protection methods against radiation emitted by the sun
14	Theoretical	General properties of ionized radiation
15	Theoretical	Effect of ionized radiation on humans and environment

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	1	3	4	7
Land Work	3	1	2	9
Total Workload (Hours)				72
[Total Workload (Hours) / 25*] = ECTS				3

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	1. To have knowledge about electromagnetic spectrum
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2	To have knowledge about electromagnetic waves and their properties
3	Knows the effects of non-ionizing radiation on human and environmental health
4	Have knowledge about the effects of electromagnetic waves, infrared rays on cell phones base stations
5	Getting the knowledge radiation emitted by the Sun and ionized radiation.

#### Programme Outcomes (Environmental Health)

1	They have the appropriate level of knowledge about the basic sciences which has an interaction with the environment and the environment itself.
2	They have gained the basic concepts, skills and qualifications in the Environmental health theoretical and practical lessons. And then they can establish the connections that are necessary to protect the environment and people's health in the light of these competencies.
3	They can use the approaches and the information of basic and applied research in different disciplines. They can follow the innovations and developments in their field, and have self-development competency with the terms of the day.
4	They know and apply the analysis methods used in the evaluation of environmental factors (drinking water, waste water treatment, air pollution, meteorological data, land values, food control, radiation measurement, etc.).
5	They have a professional and ethical consciousness, and have the ability to recognize the environmental problems and also can formulate a solution to these problems. They apply the gained knowledges and skills faced in real life situations, transfers the knowledge to individuals around, and wins the life-long learning behavior.
6	They are able to use their professional knowledge in their lives and behave sensitively toward the local and global environmental problems and effectively uses to the legislation and management tools the necessary for the solution.
7	Gained the ability to adapt the changing in a positive way themselves, to understand the core values and cultures of the society which are living. Sensitive to the universal and the social values, interests of the country, have adopted the concept of sustainable development, environmentally conscious, productive, behaves aware of the ethical and professional responsibility.
8	Provides a healthy interact of individual, society and the environment and take responsibility in the necessary situations for the continuity.
9	They gain the ecologically-based solving skills the problems and the delays that may arise in interaction with each other of living and nonliving environment. Interests of local and national, and Ecological and historical values of our country, and contribute to the protection and the development of them.
10	Exhibits the appropriate behaviours for the protection and the development of plants, animals, and inanimate environment, and the especially human health.
11	Knows the value of energy for life, recognizes the types of energy, and have conscious of the importance, using and dissemination of renewable energy sources.
12	Knows the properties of information and communication technologies, and uses them in the process efficiently and professionally.
13	They aware of the democracy, rule of law, human rights, the national and universal cultural characteristics, and sensitive towards to the nature, society and people.
14	Knows the importance of Atatürk's principles and reforms, make them a way of life.
15	Uses effectively the Turkish in speaking and writing.
16	Has at least one foreign language ability to be able to follow the knowledge in their profession and to communicate with colleagues.
17	To have the appropriate knowledge of medical sciences at the level of interest, to use specific medical terms and terminology of field

#### Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	5	5	5	5
P2	5	5	5	5	5
P3	5	5	5	5	5
P5	5	5	5	5	5
P6	2	2	2	2	2
P7	4	4	4	4	4
P8	5	5	5	5	5
P9	5	5	5	5	5
P10	5	5	5	5	5
P11	5	5	5	5	5
P13	1	1	1	1	1

