University of Crete
Summer Schools
for International Medical Students

APPLIED
RESPIRATORY
PHYSIOLOGY

Heraklion, Crete
July 8 - 12 2024

Organized by the Department of Intensive Care Medicine
What happens during an asthma attack or a severe pneumonia? How mechanical ventilators work and how can we adjust the ventilator settings to manage respiratory failure? What is common between champagne bubbles and divers disease? How high a mountain can we climb? Why are we panting after exercise? How about snoring when sleeping? Find the answer to all these questions and more by immersing this summer into a school on

Applied Respiratory Physiology!

Course Aim and Description

This course provides an in-depth understanding of respiratory physiology and its implications in health, in exercise and extreme environments, in disease, and mechanical ventilation. The hands-on sessions allow students to visualize and comprehend the basic physiology, and familiarize them with the cardiopulmonary exercise testing and polysomnography. Using a lung simulator and an ICU ventilator the students learn the basic principles of setting and adjusting a mechanical ventilator to support a critically ill patient with respiratory failure.

All courses will be given by experts in adult respiratory and intensive care medicine.

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In this course will you learn about:

1. Mechanics of breathing and its application in the pathophysiology of respiratory failure and mechanical ventilation
2. Pulmonary circulation, ventilation-perfusion relationships and Heart-Lung interactions
3. Exercise physiology and pathophysiology of limited exercise capacity
4. Control of breathing and pathophysiology of Sleep-breathing disorders
5. Basic principles of mechanical ventilation

Who should attend?

The course is for medical students who have completed the 3rd year of their studies and have taken courses on respiratory physiology and pathophysiology.

When & Where?

The course will take place on July 8-12, 2024, at the Medical School of the University of Crete, and the University Hospital of Heraklion, all in the beautiful island of Crete, Greece. The daily programme runs from 10 am to 2 pm and includes three lectures and one hands-on session.

Application procedure

Online application by email to vaporidi@gmail.com
In your application email please include: your full name, medical school and year of studies, and a copy of your transcript showing you have passed physiology and pathophysiology courses. Eligible students will be accepted on a first come-first served basis and notified within a week from application.
Deadline: April 30th, 2024
Cost: tuition 400€ includes all educational sessions and a welcome dinner with the faculty on July 8th. Tuition does not include travel and accommodation. Details about the registration process will be sent by email upon acceptance of your application. A local travel agency and students' organisation will help with accommodation.

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PROGRAMME
Monday July 8, 10.00-14.00
Welcome - practical information about the summer school
Mechanics of Breathing
Ventilation
Oxygenation
Hands-on: Mechanics of breathing
Welcome dinner 20.00
Tuesday July 9, 10.00-14.00
Pulmonary circulation
Ventilation-perfusion matching
Heart - lung interactions
Hands-on: Heart-Lung interactions - visit to the ICU
Wednesday July 10, 10.00-14.00
Physiology of exercise
Exercise limitations in lung disease
Respiratory physiology in extreme environments
Hands-on: Cardiopulmonary Exercise Testing - visit to the CPET lab
Thursday July 11, 10.00-14.00
Respiratory muscles
Respiratory failure
Basic principles of mechanical ventilation
Hands-on: Mechanical ventilation using an ICU ventilator and a lung model
Friday July 12, 10.00-14.00
Control of breathing
Responses to hypoxia and hypercapnia
Pathophysiology of OSAS
Hands-on: Sleep disorders - visit to the Sleep lab of the University Hospital

FACULTY
Katerina Vaporidi MD. PhD.,
Scientific Coordinator, Associate Professor in Intensive Care Medicine, Department of Intensive Care, University of Crete, School of Medicine.

Dimitris Georgopoulos MD. PhD.
Professor emeritus of the Medical School of the University of Crete, former head of the department of Intensive Care.

Evangelia Akoumianaki MD. PhD
Assistant professor in Intensive Care Department of Intensive Care, University of Crete, School of Medicine.

Eumorfia Kondili MD. PhD.
Professor in Intensive Care Medicine, and head of the department of Intensive Care at the University of Crete, School of Medicine.

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Q: What would you advise future students who would consider applying for this Summer School?

I would advise students to apply for the Summer School. The classes gave me clear insights on the topics. The hands-on sessions are perfect to help memorize and understand the topics.

I think the advice of Professor Vaporidi to find an accommodation in the centre is a really good one :) I also think revising the basic principles of respiratory physiology would be a good idea, for me it was 3 years ago I saw the theory, so I felt like I had to catch up a bit.

I would recommend not hesitating to ask questions, and keeping it very interactive to improve learning ability. I would also advise not to overdo note-taking. It is sometimes difficult to both write and listen in a language that is not your native language.

I would also recommend reviewing some things back from the topics covered prior to summer school, such as youtube videos/ previous courses. I would also recommend taking accommodation in the Heraklion center and inquire about public transportation and fares (reduced student fare) prior to departure. And beyond that, I recommend enjoying it!

To not be afraid to ask questions. This helps the student understand better, and it helps the teacher/professor bring the content of their presentation across. To read about the subject in advance