



Πανεπιστήμιο Θεσσαλίας

Σχολή Θετικών Επιστημών

Τμήμα Μαθηματικών

Περίληψη

This talk is about deterministic mathematical modeling and qualitative analysis of epidemic diseases such as Covid-19, Hepatitis, Cholera. Also, this seminar presentation is an introduction to the methods and tools that are widely used and accepted in the mathematical epidemiology literature today. It is aimed to provide a foundation that can be advanced from the introductory level to the research level. The target audience is upper-level undergraduate mathematics students and graduate students in mathematics, physics and engineering. This seminar is also suitable for mathematical researchers who want to establish a foundation in mathematical epidemiology and move on to the research level.

First, epidemiology, the history of epidemics, mathematical modeling and modeling of epidemics will be explained. Then, the Kermack-McKendrick SIR epidemic model, known as the first study in mathematical epidemiology, will be discussed. Then, the most basic concepts in mathematical modeling, the incidence function, the basic reproduction number and stability definitions will be given. The question of how a continuous model can be discretized will be addressed and some methods will be introduced. Finally, a Hepatitis B model that is new to the literature will be introduced and its qualitative analysis will be presented.

Ομιλητής:

Mehmet GÜMÜŞ,

Associate Professor,
Department of Mathematics,
Zonguldak Bülent Ecevit
University

Διάλεξη με θέμα:

An Introduction to Mathematical Epidemiology

Πέμπτη 4 Ιουλίου 2024,
στις 19:00

**Αίθουσα 7, 2^{ος} όροφος, κτήριο Α και στην
Ηλεκτ. Αίθουσα MsTeams: 802yfg5**

