

Special topics for Biosystems Modeling 1: *Introduction, conceptions and philosophy of mathematical modeling*

Time: Fall 2017 (Module 1)

Description

Based on the need of Dalhousie graduate students who are willing to use modeling approach for their own research related to biosystems, three modules on special topics of modeling are designed in focusing mainly on the conception and resolution of mathematical models applied to biosystems. In this module 1, fundamental questions such as 'How to choose an adequate model ?' and 'how to evaluate the model ? in the context of their own research will be part of the different topics presented here.

Prerequisites

MATH 1001; STAT 2000 ; STAT 2001;

Delivery: Each module will comprise of 4 weeks of 5 hour lectures/labs.

Evaluation: Assessment of this module will be in the form of assignment (20%) and a final project to be submitted at the end of module (80%).

Instructors:

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Content of the Module 1

Topic 1: Review and key emphasis on Mathematical/Statistical knowledge

Topic 2: Basic knowledge on differential equations (ODE and PDE)

Topic 3: Introduction, conceptions and philosophy of mathematical modeling

Topic 4: How to choose a model for your research and how to evaluate a mathematical models?

Topic 5: Linear programming