

Special topics for Biosystems Modeling 1: Basic Models

Time: Winter 2013 (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, two 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 5 weeks of 3 hour lectures/labs.

Evaluation: Assessment of this module will be in the form of weekly assignments (20%) and a final project to be submitted at the end of module (80%). 100% if there is a manuscript ready to be submitted.

Instructors:

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Collaborators: Dr. Jin Yue, Dr. Arumugam Thiagarajan

Guest lecturers: Dr. Alex Georgallas, Dr. Alan Fredeen

Content of the Module 1

Topic 1: Data.vs. models

Topic 2: How to choose a model for your research?

Topic 3: How to evaluate mathematical models?

Topic 4: Approaches to probabilistic backgrounds

Topic 5: Artificial Neural Network (ANN) Model