Instructor: 
Dr. Vijay Vaidyanathan 
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(940) 565-3268 
Office: B 131 
Office Hours: MW: 10 AM - NOON

Class Schedule: 
M: 6 -7:50 PM, B158

Laboratory Schedule: W: 6 – 8:50 PM, F242

Required Textbook: 
Class Notes

Catalog Course Description:

Introduction to equations and numerical analysis techniques important to the description of living 
systems and medical devices; solution alternatives and limitations; compartmental modeling; use 
of finite element modeling; mathematical models of physiological control systems and devices; 
the behavior of physiological control systems using both time and frequency domain methods.

Prerequisite(s): BMEN 3321 and senior standing

Course Objectives: 
1. Gain an understanding of biomedical modeling 
2. Understand the application of modeling to various biomedical engineering applications 
3. Develop a knowledge of statistical modeling using statistics software 
4. Understand the principles of quantitative approaches to modeling 
5. Gain knowledge on simulation techniques

ABET Criteria: 
BMEN 4310 addresses the following ABET program outcomes:
a) Apply knowledge of mathematics, engineering and science
b) Identify, formulate and solve engineering problems
c) Use techniques, skills and computer-based tools for conducting experiments and carrying out designs

Homework and Quizzes:
Homework assignments will be given using UNT’s Blackboard Learn online program. In-class quizzes will cover reading material from the textbook and reference material.

Grade Evaluation:

Homework/Quizzes 10%
Exam 1 30%
Exam 2 30%
Laboratory Assignments 15%
Final Project 15%

A – 90-100%
B – 80-89%
C – 70-79%
D – 60-69%
F - < 60%

Disability Policy:
All reasonable accommodation will be made to facilitate special needs. If special accommodations are required, the student must first meet with the staff of the Office of Disability Accommodation (ODA), Union Suite 322, (940) 565-4323. After meeting with that office, please contact me to discuss what accommodations will be necessary. For more information, see http://www.unt.edu/oda.