Course Syllabus
BBE 2003 Computer Applications in Bioproducts and Biosystems Engineering (3 cr)
(Sophomore Fall)

Course Description: Applications of computer software, for instance, Matlab, R, and Excel, in assisting engineering calculations and designs in Bioproducts and Biosystems Engineering.

Prerequisites (Math 1271 or Math 1371, Math 1272 or Math 1372, Concurrent registration in [{Math 2243 or 2373} OR {Math 2263 or 2274}])

Class Schedule and Locations
Lab: T, Th 03:00 pm – 04:50 pm, LES 230, LES 220 and Skok 35, St. Paul

Instructors

Dr. Ce Yang
Dr. John Nieber
Dr. Bo Hu
Dr. Peter Huang
Others?

Office Hours and Locations
To be determined

Grading System:

Class attendance	20%
Assignments	60%
Final Exam	20%

Text:
Allen Downey, Physical Modeling in MATLAB, Open-access online textbook:
http://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=82

Joseph Manzo, Lehigh University, How to Use Microsoft® Excel® The Careers in Practice Series, Open-access online textbook:
http://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=70

References (to be kept in St. Paul campus library)

To be determined

Course Objectives

1. Introduce the software Matlab and its application in solving equations.
2. Introduce the statistic principles and case studies in applications of statistics software R on solving questions in the field of Bioproducts and Biosystems Engineering.
3. Introduce the software Microsoft Excel and its application in solving mathematical and statistical problems.

Course Policies

1. Attendance is mandatory to all the lab sessions and it will account for 20% of the final grade. Absence of the class will be only accepted with valid excuse such as a medical report signed by your doctor. Students will be requested to sign an attendance sheet before the class and one can only sign for him/her self. Signing for others will be considered as a serious violation to the class policy and may cause a direct report to the university office of student misconduct. Unexcused absences will reduce the credit given toward the 20%, and there is a threshold of two (2) unexcused absences. For three (3) or more absences the student will forfeit the attendance credit in proportion to the number of absences.
2. Lab assignments, accounting for 80% of the final grade, will be given at each lab in Tuesday and will be due before Tuesday lab in the following week. Overdue assignments will not be accepted unless prior approval for late submission is given. Copying assignments from others will be considered as a serious violation to the class policy and may cause a direct report to the university office of student misconduct.
3. Your letter grade will be calculated based on the following:

A [97-100) = 4.0	B+ [87-89) = 3.3	C+ [77-79) = 2.3	D+ [67-69) = 1.3
A [93-96) = 4.0	B [83-86) = 3.0	C [73-76) = 2.0	D [65-66) = 1.0
A- [90-92) = 3.7	B- [80-82) = 2.7	C- [70-72) = 1.7	E/F [below 65) = 0.0

Student Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via http://www.mentalhealth.umn.edu/.

Course Structure (tentative)

Week	Date	3:00	Task	Date	3:00	Task
1	5-Sep	Lab	Matlab	7-Sep	Lab	Matlab
2	12-Sep	Lab	Matlab	14-Sep	Lab	Matlab
3	19-Sep	Lab	Matlab	21-Sep	Lab	Matlab
4	26-Sep	Lab	Matlab	28-Sep	Lab	Matlab
5	3-Oct	Lab	Matlab	5-Oct	Lab	Matlab
6	10-Oct	Lab	Statistics R	12-Oct	Lab	Statistics R
7	17-Oct	Lab	Statistics R	19-Oct	Lec	Statistics R
8	24-Oct	Lec	Statistics R	26-Oct	Lab	Statistics R
9	31-Oct	Lab	Statistics R	2-Nov	Lab	Statistics R
10	7-Nov	Lab	Statistics R	9-Nov	Lab	Statistics R

11	14-Nov	Lab	Microsoft Excel	16-Nov	Lab	Microsoft Excel
12	21-Nov	Lab	Microsoft Excel	23-Nov	Lab	Microsoft Excel
13	28-Nov	Lab	Microsoft Excel	30-Nov	Lab	Microsoft Excel
14	5-Dec	Lab	Microsoft Excel	7-Dec	Lab	Microsoft Excel
15	12-Dec	Lab	Microsoft Excel	14-Dec	Lab	Microsoft Excel

Statement on Academic Honesty:

The following statement is from the CSE Student Guide;

"The College of Science and Engineering expects the highest standards of honesty and integrity in the academic performance of its students. Any act of scholastic dishonesty is regarded as a serious offense, which may result in expulsion. The Institute of Technology defines scholastic dishonesty as submission of false records of academic achievement; cheating on assignments or examinations; plagiarizing; altering, forging or misusing an academic record; taking, acquiring, or using test materials without faculty permission; acting alone or in cooperation with another to obtain dishonestly grades, honors, awards, or professional endorsement. Aiding and abetting an act of scholastic dishonesty is also considered a serious offense".

This statement will be held to in BBE 2003 as the definition for academic honesty. If at any time you have a question about what might constitute an academically dishonest act, please feel free to contact the instructors.