

BME 5920 Cardiovascular Devices

1 Credit, Thursday 2:30-3:20

Instructor: Bruce KenKnight (kenknight.bruce@gmail.com)

Prerequisites: BMEN 3011, 3111, 3211, or equivalents with instructor consent

Course Goals and Objectives

This course will expose students to the design of cardiovascular devices by experts from local medtech companies. Lectures will be structured to so students understand the clinical need, the generic design (emphasizing use of engineering principles), typical testing and validation methods, and major limitations of the available devices (to stimulate thought on research opportunities) on a different cardiovascular device each week.

Learning and Development Outcomes:

Upon completion of this course, students should be able to understand the design, analysis, and testing of these and related devices. They will have opportunities to apply and reinforce engineering principles learned in prior courses.

Assignments and Projects

- Participation (30% of grade)
- Completion of a report on design and testing of a cardiovascular device (70% of grade)

Course meetings outside of class

None

Attendance Requirements/Penalties

Students are expected to attend most class sessions. Multiple unexcused absences will result in participation reduction.

Statement on Extra Credit

There is no extra credit available.

Policy for makeup work

Late reports will be accepted only because of documented illness or personal emergency.

Final Exam

None

Grade Definitions

Please see the University of Minnesota's Grading and Transcripts policy at

<http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html>

Student Conduct Code

Students in this course are expected to adhere to the University of Minnesota's Student Conduct Code:

http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf

Administrative Policy for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include illness of the student or his or her dependent, participation in intercollegiate athletic events. For other University of Minnesota policies regarding absences and makeup work, please see <http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>

Board of Regents and Administrative Policy on Conduct, Teaching, and Learning

Please ensure that you are familiar with both the Student Conduct Code and Administrative Policy on Teaching and Learning:

<http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>

http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf

Board of Regents Policy on Sexual Harassment

Please see this important information on the University of Minnesota's Policy on Sexual Harassment

<http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>

Board of Regents Policy on Equity, Diversity, Equal Employment Opportunity, and Affirmative Action

Please see this important information on the University of Minnesota's Board of Regents Policy on Equity, Diversity, Equal Employment Opportunity, and Affirmative Action

http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf

Mental Health and Stress Management Services

Please know that as part of your experience here at the University of Minnesota, there are resources for you in time of stress. Please visit <http://mentalhealth.umn.edu/> for several resources for students, their parents, faculty, and staff.

Board of Regents Policy on Academic Freedom

Please see this important information on the University of Minnesota's Board of Regents Policy on Academic Freedom and Responsibility

http://regents.umn.edu/sites/default/files/policies/Academic_Freedom.pdf