EE 5345 Suggestions for Case Study

1. Radiographic Systems: this is a big category, you may want to concentrate on:
   
   (a) Medical Imaging
       i. Projection
       ii. Fluoroscopy
       iii. CT Scanners, etc.
   
   (b) MRI Systems
   
   (c) Ultrasonic Imaging Systems
   
   (d) Thermal Imaging Systems
   
   (e) Positron Emission Tomography
   
   (f) Functional MRI
   
   (g) Impedance Tomography
   
   (h) Nuclear Medicine Imaging Systems

2. Measurement of Flow
   
   (a) Ultrasound Doppler Flowmeters
   
   (b) Ultrasound Transit-time Flowmeters
   
   (c) Thermodilution-based Flowmeters (for cardiac output)
   
   (d) Electromagnetic Flowmeters
   
   (e) Spirometry Systems

3. Measurement of Pressure
   
   (a) Intravascular Pressure Sensors
   
   (b) Non invasive Arterial Pressure Sensors
   
   (c) Intraocular Pressure
   
   (d) Cerebrospinal Fluid Pressure

4. Temperature Sensors
   
   (a) Electronic Thermometers
   
   (b) Thermal Expansion Thermometers

5. Ventilators

6. Anesthesia Machines

7. Respiratory Gas Measurement

8. Clinical Chemistry Systems

9. Electrophysiology
   
   (a) Electrocardiography
   
   (b) Electromyography
   
   (c) Electroencephalography
   
   (d) Evoked Potentials
(e) Electroretinograms
(f) Defibrillators
(g) Pacemakers
(h) Cardioverters

10. Nuclear Medicine: Radiation Therapy Systems
11. Nuclear Medicine: Radiation Dosimetry Systems
12. Biotelemetry Systems
13. Telecommunications Systems in Medicine
14. Medical Lasers
15. Artificial Organ Systems
   (a) Cochlear Implants
   (b) Kidney Dialysis
   (c) Heart-Lung Machines