BU College of Engineering

Biomedical Engineering

Junior Town Meeting

March 28, 2011

Overview

- Review new courses, frequencies & implications
- Make sure you are aware of minor and concentration opportunities available to you
- Encourage you to be thoughtful about shaping your programs – intentionality:
  - Research
  - Co-Op / Internship
  - Advanced Coursework
  - Volunteer/Community Service
- Here feedback about BME experience so far

Program Changes to Note

- Social Science/Humanities
  NOTE – no more depth requirement;
- Now need a total of 3 social science and humanities courses with at least 1 of each

BME Courses – Fall 2011 & Spring 2012

Fall 2011

- BE401Signals & Systems
- BE420 Introduction to Solid Biomechanics
- BE435 Biotransport
- BE491 Engineering Physiology Lab I
- EK424 Thermodynamics
- BE500 A1 Epigenomics: Off the Inform Hiway
- BE500 A2 Mechanics & Thermo of Cell Struct
- BE500 A3 Next Generation Sequencing
- BE515 Intro Medical Imaging
- BE517 Practical Optical Microscopy Biol Mtls
- BE/ME521 Continuum Mechanics
- BE/ME523 Mechanics of Biomaterials
- BE/ME524 Skeletal Tissue Mechanics
- BE526 Biomaterials and Tissue Engineering I
- BE562 Computational Biology
- BE564 Biophysics of Large Molecules
- BE567 Nonlinear Systems in BME

Spring 2012 (tentative)

- BE402 Control Systems in BME
- BE436 Fundamentals of Fluid Mechanics
- BE437 Nano Scale Processes in Living Sys
- BE492 Engineering Physiology Lab II
- EK424 Thermodynamics
- BE500 A1 Systems Biology of Disease
- BE/ME504 Polymers and Soft Materials
- BE508 Quant Studies of the Resp&Cardio Sys
- BE513 Biolog and Environmental Acoustics
- BE514 Speech Signal Processing
- BE517 Practical Optical Microscopy Biol Mtls
- BE527 Prncpls and Appls of Tissue Eng
- BE533 Biorheology
- BE560 Biomolecular Architecture
- BE565 Molecular Biotechnology
- BE566 DNA Structure and Function

Concentrations

- ETEE (Energy Technologies & Environmental Engineering)

  Courses offered Fall 2011:

  - ENG EK 408 – Introduction to Clean Energy and Storage Technologies
  - ENG EC 417 - Electric Energy Systems: Adapting to Renewable Resources
  - CAS GE 250 – The Fate of Nations: Climate, Resources and Institutions
  - CAS GE 304 – Environmentally Sustainable Development
  - CAS GE 420 - Methods of Environmental Policy
  - ENG EK 546 - Assessment of Sustainable Energy

- Nanotechnology

  Courses offered Fall 2011:

  - ENG EC 481 - Fundamentals of Nanomaterials and Nanotechnology
  - *CAS PY 313 – Elementary Modern Physics*
  - *ENG EK 424 – Thermodynamics and Statistical Mechanics*
  - ENG BE 505 – Molecular Bioengineering
  - ENG BE/ME 523 – Mechanics of Biomaterials
  - ENG EC 560 – Introduction to Photonics
  - ENG EC 574 – Physics of Semiconductor Materials
  - ENG EC/MS 577 – Electrical, Optical and Magnetic Properties of Materials
  - ENG EC 578 – Fabrication Technology for Integrated

Minors

- Minors
  - Biomedical, Computer, Electrical, Mechanical
  - CAS, SMG, COM, SAR, CFA
  - Minor adds a minimum of 12 credits to degree (maximum of 2 courses can be double counted)

Dual Degree Programs

- Earn 2 BS Degrees (1 ENG & 1 non-ENG)
  - 144 credits required (minimum)
- Earn 2 ENG BS Degrees
  - 162 credits required (minimum)
  - Must complete requirements for each degree
  - Degrees awarded simultaneously
- Eligibility:
  - Cumulative 3.00 GPA
  - Apply sophomore year or fall junior year

Special Courses

- SMG SI 480: The Business of Technology Innovation
  - Fulfills Gen Ed Elective or Professional Elective
  - Fall 2011 – Friday 9:00 -12:00 (expected also Spring 2012)

- ENG EK 280: Technology, Society & Policy
  - Course fulfills Social Science Elective
  - Generally offered in spring semester; plan accordingly (planned for Spring 2012)

Graduate/Professional School Opportunities

- PhD & MS programs
  - Training for research-oriented careers
  - usually require thesis
- MEng
  - Professional degree for students focused on a career in industry
  - Include advanced coursework & technology leadership training
- Other professional training: MD, MBA, JD, etc…

Finding a job/internships - resources

- Career Development Office, ERB 112
  - Cover letters & resume help
  - Interview skills
  - Networking opportunities
- Faculty
- Senior Projects
- Family connections

- Questions
- Feedback