Announcement of MEMT Program

- MEMT has been approved effective 2007-2008 by School executive committee
- Courses were approved February in principle by executive committee and now restructured because of name change
- First class will begin in Fall 2007
Required Courses for MEMT

Proposed core courses for Materials Engineering and Manufacturing Technology Concentration

- Two courses in Materials Engineering from
  - EECS276 (Solid-State Electronics)
  - MSE252 (Theory of Diffusion),
  - MSE254 (Polymer Science and Engineering),
  - MSE255 (Design with Ceramic materials),
  - MSE268 (Principle of Coatings, Thin Films, and Multi-layers),

- Two courses in Manufacturing Technology from
  - CEE242 (Advanced Strength of Materials)
  - EECS274 (Biomedical Microdevices),
  - EECS277C Nanotechnology
  - MAE 252 (Fundamentals of Microfabrication)
  - MAE247/EECS278 (Micro-Systems Design)

Existing core courses for Materials Science and Engineering Concentration

- Physical and Electrical Properties: MSE205 (Materials Physics).
- Thermodynamics and Transport Phenomena: one course from MSE252 (Theory of Diffusion), MSE253 (Kinetic Phenomena in Materials), CBEMS240 (Chemical Engineering Thermodynamics), or Chemistry 230 (Classical Mechanics and Electromagnetic Theory).
- Processing of Materials: one course from EECS176 (Fundamentals of Solid-State Electronics and Materials), MSE255A (Design with Ceramic Materials), or MSE270 (Materials Processing).
Electives

- **Proposed elective courses for Materials Engineering and Manufacturing Technology Concentration**
  - **Chemical Processing and Production:** Chemistry 213 (Chemical Kinetics), CBEMS210 (Reaction Engineering), CBEMS220 (Transport Phenomena), CBEMS230 (Applied Engineering Mathematics I), CBEMS240 (Chemical Engineering Thermodynamics), MSE210 (Materials Characterization Techniques and Analysis).
  - **Electronic and Photonic Materials and Devices:** BME210 (Cell and Tissue Engineering), EECS174 (Fundamentals of Semiconductor Devices), EECS188 (Optical Electronics), EECS277A-B (Advanced Semiconductor Devices I, II), EECS277C (Nanotechnology), EECS285A (Optical Communications), EECS285B (Lasers and Photonics), EECS280A-B (Advanced Engineering Electromagnetics I, II), MSE272 (Microelectronic and Photonic Materials and Technology).
  - **Electronic Manufacture and Packaging:** EECS272 (Microelectronic Packaging), CBEMS280 (Optoelectronics Packaging), EECS188 (Optical Electronics), EECS279/MAE249 (Micro Sensors and Actuators), EECS285A (Optical Communications), EECS285B (Lasers and Photonics), EECS285C (Integrated and Fiber Optics), EECS280A-B (Advanced Engineering Electromagnetics I, II), MSE210 (Materials Characterization Techniques and Analysis), MAE253 (BIOMEMS).
  - **Materials Engineering:** Chemistry 225 (Polymer Chemistry), Chemistry 226 (Polymer Materials: Polymer Structure-property Relationship), Physics 238A-B-C (Condensed Matter Physics), CEE243 (Mechanics of Composite Materials), CEE246 (Structural Performance and Failure), CEE281 (Finite Element Method in Continuum Mechanics), MSE210 (Materials Characterization Techniques and Analysis), MSE251 (Dislocation Theory), MSE255B (Science of Composite Materials), MSE256A (Fracture of Engineering Materials), MSE266 (Science of Nanoscale Materials and Devices), MSE259 (Transmission Electron Microscopy), MSE263 (Computer Techniques in Experimental Materials Research).

- **Existing elective courses for Materials Science and Engineering Concentration**
  - **Chemical Processing:** CBEMS210 (Reaction Engineering), CBEMS220 (Transport Phenomena), CBEMS230 (Applied Engineering Mathematics I), CBEMS240 (Chemical Engineering Thermodynamics), MSE210 (Materials Characterization Techniques and Analysis).
  - **Mechanics of Solids:** CEE242 (Advanced Strength of Materials), CEE243 (Mechanics of Composite Materials), CEE246 (Structural Performance and Failure), CEE281 (Finite Element Method in Continuum Mechanics).
  - **Optoelectronics Packaging:** CEE281 (Finite Element Method in Continuum Mechanics), CBEMS280 (Optoelectronics Packaging), EECS188 (Optical Electronics), EECS279 (Micro Sensors and Actuators), EECS285A (Optical Communications), EECS285B (Lasers and Photonics), EECS285C (Integrated and Fiber Optics), MSE272 (Microelectronic and Photonic Materials and Technology).
  - **Physics and Chemistry of Materials:** Chemistry 213 (Chemical Kinetics), Chemistry 225 (Polymer Chemistry), Chemistry 230 (Classical Mechanics and Electromagnetic Theory), Chemistry 252 (Special Topics in Physical Chemistry), Physics 221 (Elasticity), Physics 239A (Plasma Physics), Mathematics 292A (Applied Mathematics).
  - **Structural Materials:** MSE210 (Materials Characterization Techniques and Analysis), MSE251 (Dislocation Theory), MSE255A (Design with Ceramic Materials), MSE255B (Science of Composite Materials), MSE256A (Fracture of Engineering Materials), MSE259 (Transmission Electron Microscopy), MSE263 (Computer Techniques in Experimental Materials Research), MAE200B (Engineering Analysis).
Graduate Admissions Fall 2006

- 487 admits thus far:
- 290 Citizen/PR
- 197 Foreign

- 209 SIRS thus far. They are about even, with 104 Citizen and 105 Foreign.
## Incoming GRE/UGPA Means

### Fall 2004

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### Fall 2005

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### Fall 2006

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Discussion on Admissions Expectations

- How can we increase graduate students without more funding?
- Two possibilities:
  - Employ graders for graduate classes
  - Develop professional school like master’s program
  - More faculty hiring