BIOMEDICAL ENGINEERING

Third-Year Options

• Clinical Innovation & Design Distinction
• Dual Degree: MSE/MD
WHAT IS BIOMEDICAL ENGINEERING?
BIOMEDICAL ENGINEERING

Integrates biological & medical sciences with engineering problem-solving tools to produce solutions to complex problems in medicine.
COCKRELL SCHOOL OF ENGINEERING

#10
Best Graduate Engineering Program in the U.S.
U.S. News and World Report

#11
Best Undergraduate Engineering Program in the U.S.
U.S. News and World Report

#10
Best Engineering Program in the World
Academic Ranking of World Universities
BME BUILDING

- BME & Pharmacy
- Student Services
- Research Labs
- Design & Project Labs
PEOPLE

• 25 faculty
  36% women, 64% men

• 513 undergraduates
  50% women, 50% men

• 115 MS & PhD students
  36% women, 64% men
Regenerative Medicine & Nanotechnology
Third-Year Option:

Distinction in Clinical Innovation & Design
MULTIDISCIPLINARY TEAMS

- Medical Students with Masters Engr Students
- Mentored by medical and engineering faculty
- 9-month team project

- Goal: market-viable product & business plan
Clinical Innovation & Design Distinction Project

PRELIMINARY

CLINICAL NEEDS ASSESSMENT

NEED SELECTION AND SPECIFICATION

BRAINSTORMING AND PROTOTYPING

BUSINESS / PROJECT PLAN
Distinction Eligibility & Application

• No engineering or design background necessary!
• Interest in:
  • Clinical Needs Identification
  • Innovative Devices
  • Entrepreneurship
• Applications and interviews take place between September 1 – January 31 of MS2
Third-Year Option:

Master of Science in Engineering (MSE)
Master of Science in Engineering (MSE): 30 hours

- Biomedical Engineering masters degree
- MSE requires 30 hours total
- 12 hours already earned in MS1

<table>
<thead>
<tr>
<th>MED 181</th>
<th>MED 185</th>
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<tbody>
<tr>
<td>Normal Body Structure &amp; Function</td>
<td>Mechanisms of Disease</td>
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<tr>
<td>=</td>
<td>=</td>
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<tr>
<td>BME 681M (6 hours)</td>
<td>BME 685M (6 hours)</td>
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## Master of Science in Engineering (MSE): Year 3

<table>
<thead>
<tr>
<th>MS3 Fall</th>
<th>MS3 Spring</th>
<th>1 elective (3hrs)</th>
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</thead>
<tbody>
<tr>
<td>BME 382J.4 (3hrs) Engineering Biomaterials</td>
<td>BME 381J.3 (3hrs) Imaging Modalities</td>
<td>Biomechanics or Biostats or other</td>
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<tr>
<td>BME 381J.8 (3hrs) Imaging Laboratory</td>
<td>BME 384J.5 (3hrs) Instrumentation Projects</td>
<td>Research project or other</td>
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18 hours earned in MS3 finishes MSE degree
Many Elective Topics Available

- Therapeutic Agent Delivery
- Systems Immunology
- Cancer Bioengineering
- Cell & Tissue Biomechanics
- Biological Responses to Medical Devices
- Imaging & Image Processing

Elective substitutions allowed to match your background and interests
Distinction Project (12 hrs): option for MSE credit

**Elective BME Course**
- MS3 Fall: 3 credit hrs
- MS3 Spring: 3 credit hrs

**Substitute 9-month long project for 4 courses (12 hrs) toward MSE**

- AUG
- SEP - OCT
- NOV - DEC
- JAN - MAR
- APR - MAY

- PRELIMINARY
- CLINICAL NEEDS ASSESSMENT
- NEED SELECTION AND SPECIFICATION
- BRAINSTORMING AND PROTOTYPING
- BUSINESS / PROJECT PLAN
MSE ELIGIBILITY & APPLICATION

Eligibility

- Engineering BS not required
- Some biology, chemistry, physics and calculus recommended

Application deadline is December 1

- 3 letters of recommendation
- statement of purpose
- transcripts
- GRE requirement is waived for MSE/MD Dual Degree
QUESTIONS?

Distinction Contacts:

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