**Why MS-MatE?**

- Interdisciplinary Curriculum (taking courses from MatE, MOT, ECE, BME, CEE, ME, PHY, CHE, etc.)
- Across departmental boundaries (administration by Dept. ECE for College of Engineering and College of Business)
- State-of-the-art technical knowledge and skill training by premier faculty researchers
- MRG Fellowship and Internship opportunities
- Pathways to Interdisciplinary Doctoral Research and leadership job opportunities in Materials Engineering

**Who Should Apply**

Earned undergraduate degrees in related engineering (CE, Cpe, EE, ME, BME, ChemE, etc.) and science (materials science, physics, chemistry, biology, etc.) disciplines.

**UTSA Junior/Senior Undergraduates:**
Talk to us for Integrated BS/MS Programs
- 5yrs for BS and MS degrees; no GRE
Talk to us for VIP Faculty Nominations
- Streamlined Grad School process; no GRE

**Application Deadline Dates**

Fall—June 15th (*March 1st)
Spring—October 15th (*September 15th)
Summer—April 15th (*February 15th)
*International Applicants

**Contact Information**

**Program Committee**
*(Program Faculty List Available Online)*

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- **Mark Appleford,** Ph.D.
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**Department Contact Information:**

**Dept. Electrical and Computer Engineering**

One UTSA Circle
The University of Texas at San Antonio
San Antonio, TX 78249
Phone: (210) 458-6483
Email: Electrical.Engineering@utsa.edu

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**Admission requirements, deadlines, and how to apply for Graduate Programs can be accessed at graduateschool.utsa.edu**
**Interdisciplinary Master of Science in Advanced Materials Engineering**

Established in 2012, at the College of Engineering, University of Texas at San Antonio (UTSA).

MS-Mate is administered across traditional departmental boundaries and hosted by The Department of Electrical and Computer Engineering, College of Engineering.

**Goal of the MS-Mate**

To offer training opportunities for graduate students to gain the state-of-the-art technical knowledge and skill sets necessary for independent critical thinking, problem solving, and decision making to address multidisciplinary problems in materials engineering.

**Research Taking Place**

Multifunctional and Multiferroic Sensors; Piezoelectric Actuators & Energy harvesters; Microwave and Optoelectronic Devices; MetaMaterials (Engineered Photonic and Acoustic Composites); Nanotechnology; Tissue engineering and drug deliveries; Bone and cardiovascular mechanics; Dental materials; Tissue-implant interfaces; Cellular engineering; Biosensors; Hybrid 3D fabrication

We provide outstanding graduate education and research opportunities in interdisciplinary materials science and engineering.

**Educational Objectives**

Object 1: **Technical Competency** To train students with state-of-the-art knowledge in solving multidisciplinary scientific and technical issues in Materials Engineering.

Object 2: **Interdisciplinary Capabilities** To train and equip the students with capability and skill sets for independent critical thinking and decision making in Materials Engineering.

Object 3: **Leadership/Entrepreneurship Potentials** To develop the students' skills in application of the technical knowledge and explore their leadership/entrepreneurship potentials.

**Three Interlinked Areas of Knowledge**

(a) Structure-function relationships in materials, which determine behavior at the macro-, micro-, nano-, molecular- and atomic-level;

(b) Synthesis, characterization, measurement, and computational modeling of materials (ceramic, composites, metals, polymers, multifunctional, electronic and biomedical) especially those with novel multifunctional properties, and

(c) Design and fabrication of advanced materials and devices that address current and future technological challenges in a wide range of applications including energy, communications, control and automation, health and medicine, nanotechnology, structural and environmental, and transportation

**Find US Online (MatE UTSA)**

http://engineering.utsa.edu/electrical-computer/m-s-in-advanced-materials-engineering/

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**Two Degree Options**

<table>
<thead>
<tr>
<th>Option</th>
<th>MS-MatE</th>
<th>Thesis</th>
<th>Non-Thesis</th>
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<tbody>
<tr>
<td>Core Courses</td>
<td>9 credits</td>
<td>9 credits</td>
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<tr>
<td>Concentration Courses</td>
<td>9 credits</td>
<td>15 credits</td>
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<tr>
<td>Elective Courses</td>
<td>6 credits</td>
<td>6 credits</td>
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<tr>
<td>Thesis/Project*</td>
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<td>3 credits*</td>
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<tr>
<td>TOTAL</td>
<td>30 credits</td>
<td>33 credits</td>
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</table>

**Two Concentrations**

- Multifunctional Electronic, Dielectric, Photonic and Magnetic Materials
- Multifunctional Biomedical Materials

**Three Common Core Courses**

1. Principles of Materials Engineering (MatE 5103)
2. Functions, Evaluations and Synthesis Tech of Advanced Materials (MatE 5113)
3. Management of Technology (MOT 5163)

Interwoven in the concentrations is numerical/computational methods that simulate/model materials of novel properties/responses for tailored applications.