The Materials Science, Engineering, and Commercialization (MSEC) Ph.D. program at Texas State is an integrated effort leveraging opportunities in the university’s biology, chemistry and biochemistry, physics, engineering, engineering technology and business school programs.

The MSEC program’s goal is to train graduate scientists and engineers to perform interdisciplinary research while equipping them to emerge as effective entrepreneurial leaders in the advancement of 21st-century global discovery and innovation.

MSEC Ph.D. students conduct research in state-of-the-art facilities with exceptionally qualified faculty. Their research attracts significant external funding and is producing innovative commercial endeavors in civilian, defense and security applications.

With a focus on applied research, industrial outreach and entrepreneurial training, Texas State is uniquely positioned in the region to offer this combination of skills — education with relevance. Our program provides students with valuable experience and prepares them for real-world success.
Course Work

Our 55-credit doctoral program promotes the translation of innovations from the lab to commercial production and provides the skills to organize and lead interdisciplinary research teams. In addition to providing a strong science and engineering background, the curriculum imparts the business and commercialization skills necessary to be effective leaders in the advancement of global discovery and innovation.

Core Courses

• MSEC 7101 — Commercialization Forum
• MSEC 7102 — MSEC Seminar
• MSEC 7199 — Dissertation in MSEC
• MSEC 7299 — Dissertation in MSEC
• MSEC 7301 — Practical Skills in Commercialization and Entrepreneurship
• MSEC 7302 — Leadership Skills in Commercialization and Entrepreneurship
• MSEC 7399 — Dissertation in MSEC
• MSEC 7401 — Fundamental Materials Science and Engineering
• MSEC 7402 — Advanced Materials Science and Engineering Concepts
• MSEC 7599 — Dissertation in MSEC
• MSEC 7699 — Dissertation in MSEC
• MSEC 7999 — Dissertation in MSEC

Prescribed Elective Courses

• MSEC 7103 — Research in MSEC
• MSEC 7201 — Principles of Technical Project Management
• MSEC 7303 — Research in MSEC
• MSEC 7304 — Collaborative Research/Commercialization Experience
• MSEC 7310 — Nanoscale Systems and Devices
• MSEC 7311 — Materials Characterization
• MSEC 7312 — Thermodynamics and Kinetics for Materials Scientists
• MSEC 7320 — Nanocomposites
• MSEC 7330 — Computational Materials Science
• MSEC 7340 — Biomaterials and Biosensors
• MSEC 7350 — Frontiers of Nanoelectronics
• MSEC 7360 — Nanomaterials Processing
• MSEC 7370 — Advanced Polymer Science

Faculty

The MSEC program focuses on current areas of application-oriented research. Students in the MSEC program study with nationally funded and internationally known researchers utilizing unique state-of-the-art facilities.

Many of our faculty members have been managers at large and small technology companies, or in defense laboratories, and most have industrial and commercialization experience. Students will learn from those who have been successful at technical innovation — practitioners of the art of technology development and commercialization.

Admission Policy

• bachelor’s degree and master’s degree from a regionally accredited university in either biology, chemistry, engineering, materials science, physics, technology, or a closely related field
• master’s degree must have a minimum grade point average of 3.5 on a 4.0 scale
• official Graduate Record Exam (GRE) preferred score of 304 or better (verbal and quantitative combined)
• TOEFL score of 550 (paper-based) or IELTS of 6.5 or higher (with a minimum individual module score of 6.0)
• letter outlining applicant’s personal history and life goals that are relevant to obtaining a doctoral degree
• three letters of recommendation
• current curriculum vitae or résumé
• an online Graduate College application through ApplyTexas
• $40 application fee
• official transcripts from each senior-level, post-secondary institution attended

Visit www.gradcollege.txstate.edu/apply for access to an online application and more details.

Financial Assistance

For information about scholarships, financial aid and deadlines, visit the Graduate College website at www.gradcollege.txstate.edu and click on Financing Your Graduate Education.

Contact

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