

TEXAS  STATE[®]
MATERIALS SCIENCE,
ENGINEERING AND
COMMERCIALIZATION

Student Handbook
2022-2023

|Contents

Welcome	5
I. General Information	
About Texas State University	6
About the College of Science and Engineering	7
Students' Rights, Privileges, and Expectations	8
Student Data, Privacy and Communications	9
Academic, Grading, Probation and Suspension Policies	10
Honor Code	13
II. Program Information	
About the Materials Science, Engineering, and Commercialization Program	15
Mission and Goals	15
MSEC Doctoral Faculty	16
MSEC Program Support Staff	17
Admission Requirements	18
MSEC Student Expectations	19
Communication	19
Attendance	19
Research	19
Training and Development	20
Maintenance of a Clean and Safe Learning Environment	20
LinkedIn	20
MSEC Student Resources	21
Office Space	21
Business Cards	21
MSEC Polo Shirts	21
MSEC Laptops	21

New Student Orientations	21
Funding Opportunities	23
Assistantships	23
Scholarships and Fellowships	25
Travel Funds	26
Awards	26
Advising and Registration	27
Course Level and Transfer Credit	29
Course Requirements	30
Advancement to Candidacy Requirements	32
Comprehensive Examination	32
Dissertation Proposal	33
Dissertation Guidelines	35
Dissertation Research and Writing	35
Dissertation Enrollment Requirements	35
Dissertation Time Limit	35
Dissertation Chair and Committee	35
Dissertation Committee Changes	36
Dissertation Defense	36
Approval and Submission of the Dissertation	37
Professional Development Opportunities	37
Discipline-Specific Extracurricular Opportunities	37
Student Commercialization Activities	38
Boot Camp I	38
Entrepreneurial Coursework	38
Boot Camp II	38
Commercialization Forum and MSEC Seminar	39

Dual Degree MSEC PhD-MBA Program	39
Suggested PhD/MBA Timeline	40
Doctoral Leave of Absence Policy	41
Leave of Absence Policy: Pre-Candidacy Doctoral Students	43
Helpful Links	44

|Welcome

Dear students,

Congratulations on your decision to continue your education in the Materials Science, Engineering, and Commercialization (MSEC) Program at Texas State University. We are certain this decision will enrich your skills and expand your future.

The student handbook is a reference guide that provides important information needed to complete your doctoral degree. It is not a contract and is subject to change at any time without notice. I strongly encourage you read through it carefully.

We have attempted to compile a thorough resource for you, but I am sure you won't find all the answers you need here.

While you should always start your search for answers with this handbook, there are many other resources available to you. Please feel free to come to Karla, Kelsie, or me with any questions you may have. Your research advisor, other professors, and fellow students may also be valuable sources of information. If you notice something missing from this handbook, please let us know so we can make improvements to future additions.



Regards,

Dr. Sean Kerwin
Program Director

|About Texas State University

Mission

Texas State University is a doctoral-granting, student-centered institution dedicated to excellence and innovation in teaching, research, including creative expression, and service. The university strives to create new knowledge, to embrace a diversity of people and ideas, to foster cultural and economic development, and to prepare its graduates to participate fully and freely as citizens of Texas, the nation, and the world.

Shared Values

In pursuing our mission, we, the faculty, staff, and students of Texas State University, are guided by a shared collection of values:

- Teaching and learning based on research, student involvement, and the free exchange of ideas in a supportive environment;
- Research and creative activities that encompass the full range of academic disciplines—research with relevance, from the sciences to the arts, from the theoretical to the applied;
- The cultivation of character, integrity, honesty, civility, compassion, fairness, respect, and ethical behavior in all members of our university community;
- A diversity of people and ideas, a spirit of inclusiveness, a global perspective, and a sense of community as essential conditions for campus life;
- A commitment to service and leadership for the public good;
- Responsible stewardship of our resources and environment; and
- Continued reflection and evaluation to ensure that our strengths as a community always benefit those we serve

Approved by the President's Cabinet on October 3, 2016 and Revised on December 19, 2016 (Approved by the Board of Regents on February 16, 2017, and by the Texas Higher Education Coordinating Board on February 24, 2017.)

Goals

- Promote the success of all students.
- Offer high quality academic and education programming.
- Achieve significant progress in research and creative activity as measured by national standards.
- Provide the necessary services, resources, and infrastructure to support the university's strategic direction.

|About the College of Science and Engineering

The College of Science and Engineering (COSE) prepares undergraduate and graduate students for careers in the natural and physical sciences, mathematics, computer science, engineering, and engineering technology. The faculty and staff in COSE are committed to preparing students to be leaders in a world characterized by the rapid pace of emerging technologies and new scientific discoveries. They do this by immersing students in a robust curriculum and applied learning experiences in laboratory research, field study, and design.

A hallmark of the College is the high-quality research of its faculty. State-of-the-art research findings are shared with students in the classroom and benefit the state of Texas and the nation. Many of the faculty are collaborative and interdisciplinary researchers, and they are able to bring the important skills of leading a team and participating as a team member into the classroom.

COSE has a triple mission:

- Preparing students for careers in science, technology, engineering, mathematics (STEM) and STEM education and imparting core knowledge in science and mathematics to all students
- Providing an environment in which faculty can develop and sustain internationally prominent research programs
- Serving the citizens of Texas and the nation with educational and research programs that facilitate innovation and economic development

|Students' Rights, Privileges, and Expectations

Texas State is committed to the value of a racial and ethnic diversity and believes that the primary purpose of higher education is to promote learning for all and to stimulate inquiry for truth in an atmosphere of freedom. Accordingly, Texas State encourages students to exercise the rights of citizenship. However, these rights are subject to reasonable limitations necessary for the orderly operation of the university. Texas State expects students to accept their responsibilities as citizens and members of a scholarly community. Paramount among these responsibilities is respect for the rights of others, academic and personal integrity, and adherence to federal, state, and local law as well as university regulations.

The faculty and administration are genuinely concerned with the physical and ethical welfare of students. To that end, Texas State has established rules of conduct and has published these in a Code of Student Conduct and Honor Code. These regulations guide students in achieving personal and academic goals and help the university function in an orderly way. Since students voluntarily associate themselves with Texas State, they should know that these rules are honestly and faithfully enforced. The rules include clear prohibitions against sexual or discrimination and racial harassment.

Texas State has established a grievance procedure for the prompt and equitable resolution of complaints related to illegal discrimination or harassment. Texas State, to the extent not in conflict with federal or state law, prohibits discrimination or harassment on the basis of race, color, national origin, age, sex, religion, disability, veterans' status, sexual orientation, gender identity, or expression. This grievance procedure is described in University Policy and Procedure Statement 04.04.46, Prohibition of Discrimination. The Texas State University System Sexual Misconduct Policy outlines our policy and procedure related to Title IX (sexual misconduct). Students should follow the procedures for reporting instances of discrimination or harassment.

The administration and faculty encourage students to participate in managing Texas State through its system of advisory councils and committees. Students are invited to serve as voting members on many of these groups and are expected to contribute actively to their success. Students may submit recommendations for changes in policy, not only through the committee structure, but also through their own student government.

|Student Data, Privacy, and Communications

Correct Data

All students are responsible for making certain Texas State has correct demographic data. A student's name will appear on official records as it is stated on the application for admission, unless a student has previously attended Texas State under a different name. Changes in name, local and/or permanent address, telephone number, marital status, etc. should be reported immediately to the office of the University Registrar. Texas State is not responsible for loss of correspondence credits due to unreported name changes. Address changes can be submitted at <http://www.registrar.txstate.edu/our-services.html>.

Family Educational Rights and Privacy Act of 1974 (FERPA)

FERPA protects the privacy of educational records, establishes the right of students to inspect and review their educational records, and provides guidelines for the correction of inaccurate or misleading data. Students also have the right to file complaints with the FERPA Office concerning alleged failures by Texas State to comply with the Act. University policy explains in detail the procedures to be used in complying with the Act. The policy is available at <https://www.registrar.txstate.edu/legislative-policies/ferpa.html>. The Dean of Students and the University Registrar both presume that each student is independent of his or her parents when dealing with the student's educational records. Procedures for establishing dependency status are available in both offices.

Communications

Most university offices use Texas State email as the official means of communication. Students are expected to set up their Texas State email and check it at least once a day.

|Academic, Grading, Probation and Suspension Policies

Grades

Texas State grades are assigned as follows “A,” excellent; “B,” good; “C,” passing (not at the doctoral level); “D,” passing (not at the graduate level); “F,” failure; “I,” incomplete; “U,” unearned “F”; and “W,” withdrawn passing. A grade of “PR,” in most instances may be temporary and non-punitive but may be assigned in selected courses where the required clock hours needed to complete requirements extend beyond the regular term or summer session. A grade of “CR” is assessed when credit only is given for a course, as in the case of the thesis course, after completion of the thesis. For a complete list of grades currently and previously used at Texas State visit the University Registrar's website at <http://www.registrar.txstate.edu/our-services/grades.html>. PR grades are assigned in all MSEC dissertation courses (MSEC 7X99) and are changed to CR when the student successfully completes their dissertation. CR grades are assigned in all MSEC research and collaborative research courses (7X03, 7X04).

Incomplete Grade

If any course work is incomplete during any term, the work must be completed by an indicated deadline arranged between the student and the course instructor. The “I” grade may be assigned when, due to unusual circumstances beyond the student’s control, a significant portion of a course, such as a term paper or final examination, has not been completed. An “I” grade from Texas State will not count as hours completed until another grade is substituted for the “I”. After incomplete deadline date the "I" grade will automatically change to “F”.

Withdrawal Grade

A “W” grade is assigned only if a student drops a course by the published deadline. See also “Registration and Course Credit” section under “Withdrawal”.

Change of Grade

An individual course grade may be changed when the involved faculty member certifies to the Office of the University Registrar that an error was made in computing the original grade. The grade change must be approved by the department chair/school director and the appropriate college dean.

Grade Appeal Procedure

Students who wish to protest a grade earned in a course should first discuss the grade with the instructor. If no resolution is reached, the student may appeal the grade to the department chair (for complaints about MSEC courses, students should appeal to the MSEC program director). If no satisfactory conclusion can be reached at this level, the student may appeal to the college dean in which the course is offered, whose decision is final. In accordance with Texas State's records retention policies, a student appeal for a change of grade must be filed no later than two years after the grade is issued.

Grade Point Average (Four-Point System)

The GPA is the number of grade points earned divided by the number of semester hours attempted. Term grade symbols have the following values:

A = 4 points

B = 3 points

C = 2 points

D = 1 point

U/F = 0 points

Grades are not calculated for "I," "CR," "PR," or "W."

Probation and Suspension

Graduate students are required to maintain a 3.0 cumulative grade-point average (GPA) for all Texas State University 5000-, 6000-, and 7000-level courses (excluding required leveling courses) listed on the student's degree audit for a graduate degree. Cumulative GPA's are computed at the end of the fall term, the spring term, and the summer.

If a graduate student's cumulative GPA falls below 3.0 during any term of enrollment at Texas State, the student will be placed on academic probation. In the next term of enrollment, the student must raise his or her cumulative graduate GPA to 3.0 or above or be suspended from further graduate study at Texas State. When the student has achieved a cumulative GPA of at least 3.0 at the end of the term of probation, the student will be removed from probation status.

Readmission

A student on suspension may petition the graduate dean for permission to re-enroll in The Graduate College. An appeal form for the graduate dean is available on The Graduate College's website. This written appeal should include additional supporting documentation. The appeal

will be reviewed by the graduate advisor and subsequently by the dean of The Graduate College. Each readmission decision is made on an individual basis and the dean of The Graduate College's decision is final. If a reinstatement is approved, the date of the reinstatement depends on the timing of the appeal, program policies, and/or conditions of the reinstatement. If a student is readmitted after being suspended, the student must maintain a 3.0 cumulative GPA or be suspended again. Individual graduate programs may also impose additional cumulative GPA or course restrictions for their students.

Change of Major

Graduate students on probation may not change programs or admission status without a recommendation and special request from the prospective department. The dean of The Graduate College will review the request when making the final decision. If a suspended student wants to pursue a different program, the student must petition the dean of The Graduate College for permission. The written appeal should include a justification. If the dean of The Graduate College grants permission to a student to pursue a different program, the student must submit an application for admission and comply with instructions as identified earlier under the degree-seeking admission requirements section of the catalog. This procedure must be completed in ample time to meet the admission deadlines. Acceptance in one program does not guarantee acceptance in another program.

Financial Aid

If a student is receiving financial aid, the student must also meet the satisfactory academic progress requirements for financial aid. See the Financial Aid section under General Information for further details.

|Honor Code

As members of a community dedicated to learning, inquiry, and creation, the students, faculty, and administration of our university live by the principles in this Honor Code. These principles require all members of this community to be conscientious, respectful, and honest.

We are Conscientious

We complete our work on time and make every effort to do it right. We come to class and meetings prepared and are willing to demonstrate it. We hold ourselves to doing what is required, embrace rigor, and shun mediocrity, special requests, and excuses.

We are Respectful

We act civilly toward one another and we cooperate with each other. We will strive to create an environment in which people respect and listen to one another, speaking when appropriate, and permitting other people to participate and express their views.

We are Honest

We do our own work and are honest with one another in all matters. We understand how various acts of dishonesty, like plagiarizing, falsifying data, and giving or receiving assistance to which one is not entitled, conflict as much with academic achievement as with the values of honesty and integrity.

The Pledge for Students

Students at our university recognize that, to ensure honest conduct, more is needed than an expectation of academic honesty, and we therefore adopt the practice of affixing the following pledge of honesty to the work we submit for evaluation:

“I pledge to uphold the principles of honesty and responsibility at our university.”

The Pledge for Faculty and Administration

Faculty at our university recognize that the students have rights when accused of academic dishonesty and will inform the accused of their rights of appeal laid out in the student handbook and inform them of the process that will take place:

“I recognize students’ rights and pledge to uphold the principles of honesty and responsibility at our university.”

Addressing Acts of Dishonesty

Students accused of dishonest conduct may have their cases heard by the faculty member. The student may also appeal the faculty member’s decision to the Honor Code Council. Students and faculty will have the option of having an advocate present to insure their rights. Possible actions that may be taken range from exoneration to expulsion. Information about the Honor Code Council and its policies and procedures may be found at <http://www.txstate.edu/honorcodecouncil/>.

|About the Materials Science, Engineering, and Commercialization Program

Materials science and engineering involves the characterization of the physical and chemical properties of solid materials-metals and alloys, ceramics, magnetic materials, polymers, optical materials, semiconductors, superconductors, and composites for the purpose of using, changing, or enhancing inherent properties to create or improve end products. This field is multidisciplinary including physics, chemistry and biochemistry, engineering, technology, biology, math, and computer science.

Texas State has created a cutting-edge materials science, engineering and commercialization Ph.D. program that contributes to the research, development and validation of materials to be used in the next generation of electronics, medicines, plastics, sensors, and renewable energy. Coupling commercialization with science and engineering, the curriculum infuses an understanding of intellectual property law, skills in business planning, and entrepreneurship together with the ability to organize and lead interdisciplinary research teams.

Mission

The mission of the MSEC Program is to prepare doctoral-level scientists and engineers to perform interdisciplinary research on scale-dependent materials and equip them to emerge as effective leaders and entrepreneurs in the advancement of technological innovation.

There are three main components of the MSEC program:

- Interdisciplinary Ph.D. Program - Education with commercial relevance
- Interdisciplinary Research Efforts - Advanced functional materials
- Commercialization and Entrepreneurship - Tomorrow's leaders in industry

Goals of the MSEC program are to provide the graduates with:

- Technical skills to conduct high quality research. The program is designed to have students plan and carry out cutting edge research in materials science and engineering that demonstrates the ability to think through complex problems and arrive at solutions. This goal is supported by a rigorous set of technically oriented course work that will equip students with the fundamental science and engineering knowledge necessary to conduct research. The student will also, in consultation with their research advisor and dissertation committee, formulate a research project and produce a proposal for carrying out the research.

- The ability to conduct research across scientific and engineering disciplines. Breakthroughs occur when scientists from a variety of disciplines either individually or collaboratively work on important interdisciplinary and multidisciplinary problems. Therefore, we need a new generation of scientists with both rigorous disciplinary training and the ability to communicate and work easily across disciplines.
- A set of business tools and knowledge of business practice. Equipping our graduates with the business skills necessary to become entrepreneurs or leaders in industry is a central goal of the program. This educational goal is supported by the core courses in practical and leadership skills in commercialization and entrepreneurship and other elements dispersed throughout the program. These elements include a one-week intensive workshop to be completed in the summer prior to beginning the program. This introductory boot camp outlines basic aspects of business and commercialization and equips students with a common language and basic toolkit. A second one-week entrepreneurial boot camp is required after the student's first year in the program. In addition, two of the candidacy requirements solidify business skills. The student will produce, present, and defend a full business plan for a start-up company. Students also write a Small Business Innovation Research/Small Business Technology Transfer Research (SBIR/STTR) proposal. If appropriate, students are provided the opportunity to work with a small business on the proposal, and to submit the final document to a funding agency. Students are further encouraged to submit their business plan to the Texas State New Ventures Business Plan Competition in an oral presentation before a panel of angel investors, venture capitalists and business owners. In addition, the weekly Commercialization Forum exposes students to successful entrepreneurs and business leaders. These requirements ensure that students have developed the business skills necessary to succeed.
- Technical project and business management skills. The ability to manage complex technical projects and businesses is an additional skill that is core to this program. This goal is certainly supported by the core courses. In addition, the Commercialization Forum regularly exposes the students to examples of good project management and cases of what not to do in managing projects or businesses. The ability of the students to manage projects is assessed based on how they manage the business plan, SBIR/STTR proposal, and the implementation of the proposed research plan.

MSEC Doctoral Faculty

MSEC faculty are predominantly faculty from departments across the College of Science and Engineering who are granted doctoral appointments in MSEC. There are three types of doctoral faculty with different levels of responsibilities. In addition to the faculty listed on the website, students may be able to select other faculty in the College of Science and Engineering to serve as Dissertation Chair, as long as the faculty member has a materials-focused research effort. Students interested in selecting a non-MSEC faculty member as their Dissertation Chair or committee member should discuss the possibility with the MSEC Director.

- **Regular Doctoral:** May chair doctoral committees and master's committees; may serve as a member of doctoral and master's committees; may teach doctoral and master's courses; may supervise internships.
- **Associate Doctoral:** May chair master's committees; may serve as a member of doctoral and master's committees; may teach doctoral and master's courses; may supervise internships.
- **Adjunct Doctoral:** May serve as a member of doctoral and master's committees; may teach doctoral and master's courses; may supervise internships. Committee members external to the university are typically appointed in this category.

Doctoral faculty change frequently. For a current list of MSEC Doctoral Faculty, please check the website: <https://www.msec.txstate.edu/Administration-and-Faculty/Faculty.html>

MSEC Program Staff Support

Kelsie Crumpton
Administrative Assistant III
Klc147@txstate.edu
RFM 3205
512.245.1839

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Academic Budget Specialist
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|Admission Requirements

The items listed below are required for admission consideration for applicable semesters of entry during the current academic year. Submission instructions, additional details, and changes to admission requirements for semesters other than the current academic year can be found on The Graduate College's website. International students should review the International Admission Documents webpage for additional requirements.

- completed online application in the Slate Application System
- \$55 nonrefundable application fee or \$90 nonrefundable application fee for applications with international credentials
- baccalaureate degree from a regionally accredited university
- master's degree in biology, chemistry, engineering, materials science, physics, technology, or a closely related field from a regionally accredited university
- official transcripts required from each institution where course credit was granted
- minimum 3.5 GPA (on a 4.0 scale) in all completed graduate course work
- if master's degree was earned from an institution outside the U.S., official GRE scores with competitive scores in the verbal reasoning and quantitative reasoning sections (submission of GRE scores is optional for students whose master's degrees were earned in the U.S.)
- resume/CV
- statement of purpose outlining the student's personal history and life goals that are relevant to obtaining a doctoral degree, and, in particular, the rationale for pursuing the commercialization aspect of the MSEC program
- three letters of recommendation evaluating the student's skill and potential to be successful in the MSEC Ph.D. program
- favorable interview (conducted via internet, or face-to-face) with the Admissions Committee

TOEFL or IELTS Scores

Non-native English speakers who do not qualify for an English proficiency waiver:

- official TOEFL iBT scores required with a 78 overall
- official IELTS (academic) scores required with a 6.5 overall and minimum individual module scores of 6.0

This program does not offer admission if the scores above are not met.

|MSEC Student Expectations

In addition to the student expectations listed on page 8, MSEC faculty and staff expect students to accept and follow the responsibilities listed below.

Communication

All MSEC related matters will be communicated via email. Students are expected to check their Texas State email at least daily and reply in a timely manner when required. When a response is needed urgently, MSEC staff may contact students via phone. MSEC students are encouraged to discuss preferred communication methods and frequency with their dissertation chair/committee members and their instructors.

Attendance

Students are expected to attend and participate in all scheduled lecture and laboratory classes. If a class session is to be missed, the student must notify the course instructor prior to the start of the class session. Failure to do so may result in the absence being considered unexcused. Email notification is required either as the original notice or as follow-up verification. Make-up of any missed material such as in-class projects, quizzes, and exams are at the discretion of the instructor.

The current excused attendance policy covers typical life events and emergencies (e.g., illness of student, illness or death of an immediate family member, military deployment of an immediate family member). If a student anticipates an important life event other than the typical or emergency situations listed, they should notify the course instructor as soon as possible to discuss whether altered class expectations are possible.

Each instructor will establish criteria in the course syllabus addressing specific class participation expectations and missed work. Should a student miss class, it is the student's responsibility to obtain the missed information and meet with classmates to discuss/practice missed material. Responsibility for make-up of missed work or evaluation criteria for excused absences is the responsibility of the student.

Research

Students are expected to meet with MSEC faculty to discuss research interests and select a research advisor (dissertation committee chair) by the end of their first semester. When selecting a research advisor, students should consider many factors, including the student's knowledge/interest in the research area, availability of research assistantship funding,

opportunity to publish research findings, marketability upon graduation, research advisor's mentoring style, and group dynamics. Before joining a research group, it is essential that each student meet with their prospective research advisor to gain an understanding of the expectations the advisor has for their students' productivity. This includes the number of publications/patents/presentations the student is expected to produce as well as the number of hours per week the student is expected to be in the laboratory and the advisor's policies on vacation time. When the research advisor has been selected, the students should complete the Dissertation Committee Chair Assignment Form from the Graduate College (<http://www.gradcollege.txstate.edu/forms.html>).

Training and Development

Hazardous waste and hazard communication trainings are required annually for all MSEC doctoral students who access research labs at Texas State. Trainings are required by State and Federal regulations for hazardous waste management and must be documented. The courses explain the hazardous waste management program at Texas State and provides information on proper procedures for waste generation, waste storage and waste disposal. Important details concerning waste storage supplies and EHSRM services are provided by the EHSRM office. Other research-specific training, such as radiation hazard training, may also be required; students should check with their research advisor to determine what (if any) additional training is necessary. Students whose training certifications are not current may lose access to laboratory facilities and risk losing their assistantships.

Maintenance of a Clean and Safe Learning Environment

Smoking is prohibited on the campus of Texas State as is all tobacco use (Tobacco Free Campus). Students are expected to keep their belongings orderly to avoid cluttering the classroom, lab, and office areas. Students will need to return any lab equipment or supplies to the appropriate storage area and discard any waste materials so that lab and office rooms remain orderly.

LinkedIn

Students are expected to create a LinkedIn account and join the Texas State University MSEC Program group. News, job opportunities, and program related information will be shared on this page.

|MSEC Student Resources

Office Space

RFM 4202 and RFM 4220 are available for MSEC students to work on school-related duties. Carrels are available to MSEC students; priority is given to students who 1) have not selected a research advisor and 2) do not have desk space provided by their research advisor. It is the student's responsibility to maintain the cleanliness of the carrel and common area at all times. To request a carrel, students should contact MSEC's admin and sign the check-out form. To protect the student's belongings, non-MSEC students are not allowed in this room.

Business Cards

MSEC will provide one set of Texas State business cards per student. Contact information will be requested during MSEC orientation. Additional requests may be granted at the discretion of the MSEC Director if funds are available.

MSEC Polo Shirts

MSEC will provide a polo shirt to students during MSEC orientation. Additional requests may be granted upon availability.

MSEC Laptops

MSEC has a limited number of laptops available for check-out by MSEC students on a semester-long basis. The laptops cannot be used to run research programs. Interested students should contact MSEC staff for more information about accessing the laptops.

New Student Orientations

MSEC Doctoral Student Orientation

The MSEC Program provides an orientation for all first-year doctoral students the week prior to the start of the fall semester; details will be shared with all first-year students as they become available. All first-year students are **required** to attend.

New Graduate Student Orientation

Additionally, the Graduate College holds New Graduate Student Orientation for all graduate students. This event is typically held approximately 1.5 weeks prior to the start of the fall semester. It provides valuable information about resources available to graduate students as well as important guidelines and deadlines. For more information, please see:

<http://www.gradcollege.txstate.edu/events/orientation.html>.

F-1 International Student Immigration Check-In

F-1 regulations (8 CFR 214.2) require F-1 international students in initial SEVIS status to report to ISSS "as soon as possible upon admission into the United States but no later than the Initial Session Start Date (start of classes) as listed in SEVIS."

All F-1 students must report to ISSS by completing an Immigration Check-In upon 15 days of arrival in the U.S. to submit immigration documents, failure to do so will jeopardize your F-1 status. For more information, please go to:

<https://www.international.txst.edu/prospective/CheckIn.html>

Note that many of the available dates/times may conflict with MSEC Orientation and Boot Camp I, so it is important to check the schedule well in advance and plan accordingly.

|Funding Opportunities

Assistantships

There are several types of assistantships available to graduate students. An overview of the types of assistantships and the rules governing them can be found on the Graduate College website: <http://www.gradcollege.txstate.edu/funding/assistantships.html#hours>.

To maintain assistantship eligibility, students must:

- Be in good academic standing (no probation or suspension)
- Be enrolled in 9-12 graduate hours during Fall/Spring and 3-6 graduate hours during the Summer semester*
- Maintain a minimum 3.0 Texas State grade point average in coursework leading toward the completion of the doctoral degree

**Summer enrollment is not required if the student was enrolled in a minimum of 9 graduate level hours during the previous spring and fall semesters.*

Doctoral Instructional Assistantships, Doctoral Teaching Assistantships, and Doctoral Assistantships (DIA's, DTA's, and DA's)

DIA's, DTA's, and DA's are offered on a competitive basis to full-time students enrolled in the Materials Science, Engineering, and Commercialization Ph.D. program. MSEC doctoral students may request an assistantship when accepted into the program.

If granted, MSEC doctoral students will be offered a 50% appointment for four long semesters (Fall and Spring) as long as performance expectations are met. DIA/DTA/DA rates is \$34,967 per year.

Payroll period for the fall semester will begin September 1st and will end January 15th or graduation date. If all hiring paperwork is submitted and processed before payroll deadlines, the first payment will be received October 1st. Payroll period for the spring semester will begin January 16th and will end May 31st or graduation date. If all hiring paperwork is submitted and processed before payroll deadlines, the first full check for the spring semester will be received March 1st and the last payment will be received June 1st. **Please note assistantship duties may start before payroll periods.

While the nature of the DIA/DTA/DA appointment means that students would normally receive nine payments during the Fall and Spring semesters, this stipend is intended to allow students to focus on research or alternate coursework during the summer. Additional funding during the summer should not be expected or anticipated, and external employment is strongly discouraged.

We strongly encourage students to enroll in the 12-month salary payment plan that spreads the salary out to help with budgeting over the twelve-month period.

Students on a DIA, DTA, and DA appointments will be contacted prior to each semester of their assistantship regarding their assistantship assignment. Students are generally assigned to the department most closely aligned with their MS training, although exceptions can be made based on student and department interest. Upon assignment to a department, each student must complete that department's application process. Specific teaching tasks will be assigned by the department based on their needs and are not required to accommodate student preferences unless there are health concerns. Departments may require training around the beginning of the semester to ensure assistants are prepared to fulfill the duties of their assistantships; students are expected to comply with requests from the departments for training and other requirements, such as weekly assistant meetings.

Research and progress expectations are the same for all MSEC students regardless of their funding source. As an MSEC DIA/DTA/DA, students are paid to teach or assist 10 hrs./wk. in the assigned departments + 10 hrs./wk. of research towards their dissertation project. These 10 hours of research will not be enough to complete dissertations on time and students will need to work more hours in the lab to meet advisor's expectations.

Required Instructional/Teaching Assistantship Courses

As a condition of employment, all DIAs and DTAs must complete a total of three hours of professional development course work. The course title for the required in-service teaching courses is MSEC 7100 Doctoral Assistant Development. Assistants are required to enroll in this course during their first term of DIA/DTA employment and continue to enroll in subsequent terms until the three-hour requirement is met. Students should not enroll in this course if they are employed as a DA or Research Assistant. Up to three semester hours may be used with other graduate courses to satisfy the minimum nine semester hours of enrollment required as a condition of employment. The university administration will cover the fees and tuition for the required teaching assistantship course (up to a total of three semester credit hours only). These courses are not covered by financial aid and do not count toward the MSEC degree requirements.

This course is offered as a rotating, three-semester sequence, with recurring general professional development, science teaching, and scientific ethics semesters. It is possible that some students will miss a semester in this sequence due to spending a semester as a GRA, taking a paid internship, or taking a leave of absence. In these cases, a student might subsequently find that the MSEC 7100 topic offered is one they have already taken (for instance, a student could take 2 semesters of MSEC 7100—science teaching and scientific ethics—while on DIA, then have a GRA for a semester and not take 7100. When going back to DIA the following semester, the section of 7100 offered could be science teaching again.) In these cases, the student should work with the MSEC Director to identify an alternative professional development course in another department, such as Aquatic Resources.

Course Load

The minimum course load required during a fall/spring term of employment as a graduate assistant is nine graduate semester hours. Students who enrolled in nine graduate semester hours during the previous spring and fall terms are not required to enroll during the summer; otherwise, enrollment in three graduate hours is required for the summer term. Assistants taking more than 12 graduate semester hours during the fall/spring terms must have approval from the Dean of The Graduate College. Similarly, assistants taking more than six graduate semester hours per summer session must have approval from the Dean of The Graduate College.

Enrolling below the minimum graduate level hours in any semester while holding an assistantship is a one-time exception allowed by The Graduate College and granted only upon request and review. While this exception is typically reserved for the student's final semester of enrollment, it may be used for any semester that both the student and their graduate advisor/department chair deem necessary. Once this exception has been awarded, students seeking any type of graduate assistant employment are required to enroll in a minimum of 9 graduate hours each subsequent fall and spring semester. Students seeking the one-time exception should ask the MSEC Director to submit the request prior to submission of hiring paperwork. Additionally, international students enrolling in less than 9 graduate hours must have an approval from the International Office attached to the employment paperwork.

Research Assistantships

As mentioned above, MSEC students can expect DIA/DTA/DA funding for four long semesters. After that, research assistantships (DRA's/GRA's) are negotiated with the student's research advisor; the funding rate for these positions may be different from the MSEC DIA/DTA/DA rate. If funding is available through the research advisor, a student may receive a research assistantship during the student's first two years in the program and postpone or replace the MSEC DIA/DTA/DA. Postponing the DIA/DTA/DA requires permission of the MSEC Program Director.

Scholarships and Fellowships

The Graduate College and the College of Science and Engineering offer a variety of scholarships and fellowships for new, continuing, and prospective students at Texas State University. For available opportunities, eligibility and deadline information, please visit <https://www.finaid.txst.edu/scholarships/boss.html>.

One fellowship of particular interest to MSEC students is the Graduate College's Doctoral Research Support Fellowship. This fellowship provides funding to support the research efforts of Texas State doctoral students; typical expenses covered by the fellowship include material/supply costs and analysis fees. Students are encouraged to apply for this fellowship as soon as they have successfully advanced to candidacy. Applications are accepted twice a year

(4/30-6/30 and 9/15-11/15). For more information, visit the website:

<http://www.gradcollege.txstate.edu/funding/scholarships/doctoral-research.html>.

The Graduate College also maintains a database of potential external sources of scholarship and fellowship funding; additional assistance identifying external funding is offered on an appointment basis by the Graduate College

(<http://www.gradcollege.txstate.edu/funding/external.html>).

Graduate Travel Funds

MSEC is committed to encourage graduate student travel for enhancing research, scholarly activity, and professional development. MSEC will fund \$400 per student for at least one trip over the course of their time in the program but no more than one trip per year. Additional requests may be granted at the discretion of the MSEC Director if funding is available.

To qualify for MSEC travel funding, students must meet one of the following:

- have an accepted conference paper, poster, professional presentation, or performance/exhibit
- participate or present in an entrepreneurial activity

Additional funding may be requested from the College of Science and Engineering, Graduate College, and research advisor for conferences.

To request travel funds, please submit the Graduate Student Travel Fund Request to MSEC admins **at least four weeks before** the trip takes place:

http://www.gradcollege.txstate.edu/docs/Grad_Travel_Fund_Request.pdf

Once funding has been granted, students will make and pay all travel arrangements except for rental cars. Reimbursements will be processed after the trip is complete. Itemized receipts for airfare, hotel, conference fees, etc. will be needed for reimbursements, and must state the form of payment.

Awards

Each year, the MSEC Program selects one of its students as the Outstanding MSEC Doctoral Student. A cash prize is given to the awardee, who is selected from the applicants by the MSEC Scholarship Committee. Applicants are selected based on their outstanding characteristics in scholarship, research, teaching, and service while at Texas State. Recognition is awarded in the form of a monetary award. Students self-nominate for this award by submitting a nomination packet via the BOSS system by February 1 of each year. Requirements, award criteria, and forms are available at <http://www.cose.txstate.edu/student-resources/college-of-science-scholarships/cos-scholarships.html> under “Outstanding Graduate Award-College of Science and Engineering”.

The top two nominees for the Outstanding MSEC Doctoral Student award are nominated for the College of Science and Engineering's Outstanding Doctoral Student Award, which includes a plaque and an additional monetary award.

|Advising and Registration

Advising

Each student will develop a degree plan, in consultation initially with the doctoral program director and after selection, their Ph.D. advisor and committee, who identifies the appropriate doctoral prescribed electives necessary for achieving the degree. Students must complete 37 credits prior to taking a three-part Advancement to Candidacy Comprehensive Examination. The exam will consist of the following parts: SBIR/STTR Grant Proposal, Business Plan, and Oral Examination.

Each Ph.D. student is issued a preliminary degree audit by The Graduate College which should be used to plan the student's course of study. In the first term of enrollment, students should review the degree audit in consultation with their supervising professor and the program director. It is the student's responsibility to check their degree audit periodically to assure courses and grades were posted correctly. **Students should meet with the program director at least once a year** to ensure they are making satisfactory progress toward attaining the doctoral degree.

With admission into the doctoral program, it is expected that students will pursue their course work and research activities in an efficient and timely manner. If it is determined that a student is not making adequate progress toward completion of the doctoral degree requirements, consultations will be undertaken between the student, their Ph.D. advisor and the program director to develop a remediation plan to revise the student's program of study or research. Failure to successfully remedy documented deficiencies will result in termination of the student's enrollment in the doctoral program at the discretion of the program director. Students removed from the doctoral program in this manner may appeal to the Dean of The Graduate College for reinstatement in the program within one academic year.

Registration

MSEC students who request assistantships are required to enroll in 9-12 graduate hours during the fall and spring semesters. Enrollment in more than 12 graduate hours will require the program director's approval and justification. Enrollment in less than 9 hours while holding an assistantship is possible with a **one-time** exception allowed by the Graduate College, which is

granted only upon request and review. While this exception is typically reserved for the student's final semester of enrollment, it may be used for any semester that both the student and the MSEC Program Director deem necessary. Once this exception has been awarded, students seeking any type of graduate assistant employment are required to enroll in a minimum of 9 graduate hours each subsequent fall and spring semester to maintain eligibility. Additionally, international students enrolling in less than 9 graduate hours must have an approval from the International Office attached to the employment paperwork.

After advancement to candidacy, students must be continuously enrolled each long semester for at least one dissertation hour until the dissertation has been completed, defended, submitted, and approved in accordance with the Graduate College.

In accordance with Texas Education Code, Section 54.066, once a doctoral student accumulates 100 or more doctoral semester credit hours, the doctoral student will be charged tuition at a rate equivalent to nonresident tuition for all doctoral semester credit hours exceeding 99. Courses taken by a doctoral student at the master's or undergraduate level will not count towards the 99 hours. This tuition structure applies to Texas residents as well as out-of-state residents and international students who were eligible to be charged tuition at the resident rate as a result of scholarship and fellowship awards or employment as graduate assistants. Students should contact the doctoral program director regarding appeals. Students approaching 99 credit hours who participate in the dual degree MSEC PhD-MBA program (see pp. 41-42) will need the MSEC Program to contact the Graduate College to ensure the students are not charged nonresident tuition for the remainder of their time in the program.

|Course Level and Transfer Credit

Course Level

Courses required for the doctoral level are at the 7000-level.

Transfer Credit

After a student is regularly admitted to a graduate degree program, they may be permitted to utilize some graduate level courses taken at another institution toward their graduate degree.

The Graduate College allows students to transfer up to 6 hours to their MSEC degree.

Transfer credit will be accepted and applied upon confirmation of the following requirements:

1. The credit was earned in graduate courses completed in residence at a regionally accredited institution.
2. The courses are at the appropriate level and applicable to the student's degree program at Texas State.
3. Courses have not been, and will not be, used for credit toward another degree.

Students must meet and discuss the credit transfer with the MSEC Director. If approved, the Director will submit a written request to the dean of The Graduate College asking for acceptance of the transfer work toward the student's Texas State degree.

Transfer work will be accepted only if it bears a letter grade of "B" or higher, or a numerical equivalent. A grade of "Credit," "Pass," "Satisfactory," etc., is unacceptable. Transfer work will not be accepted for graduate degree credit from another institution if such courses are designated as non-degree, background, preparatory, etc. No credit will be awarded until an official transcript showing the course work to be transferred is on file in The Graduate College. The student may also be requested to provide a catalog from the transferring university that gives course descriptions for any transfer work requested. Students admitted on "Conditional Admission" or students on "Probation/Suspension" will not receive credit for transfer work taken under the aforementioned status.

|Course Requirements

The Doctor of Philosophy (Ph.D.) degree with a major in Materials Science, Engineering, and Commercialization requires 55 semester credit hours. Students who do not have the appropriate background course work may be required to complete leveling or prerequisite courses. Any required leveling course work must be completed with grades of B or better prior to admission. Course descriptions can be found here: <http://mycatalog.txstate.edu/graduate/science-engineering/materials-commercialization-phd/#coursestext>

Required Courses (22 credit hours)

MSEC 7101	Commercialization Forum (taken 4 times)	4
MSEC 7102	MSEC Seminar (taken 4 times)	4
MSEC 7301	Practical Skills in Commercialization and Entrepreneurship	3
MSEC 7302	Leadership Skills in Commercialization and Entrepreneurship	3
MSEC 7401	Fundamental Materials Science and Engineering	4
MSEC 7402	Advanced Materials Science and Engineering Concepts	4

Elective Courses (choose 15 credit hours from the list below; students wishing to take courses from other Texas State graduate programs and receive elective credit should contact the MSEC graduate advisor)

MSEC 7103	Research in Materials Science, Engineering, and Commercialization
MSEC 7203	Research in Materials Science, Engineering, and Commercialization
MSEC 7303	Research in Materials Science, Engineering, and Commercialization
MSEC 7304	Collaborative Research/Commercialization Experience *requires MSEC Director approval
MSEC 7310	Nanoscale Systems and Devices
MSEC 7311	Materials Characterization
MSEC 7315	Quantum Mechanics for Materials Scientists
MSEC 7320	Nanocomposites
MSEC 7325	Principles of Technical Project Management
MSEC 7330	Computational Materials Science
MSEC 7340	Biomaterials and Biosensors

MSEC 7350 Frontiers of Nanoelectronics
MSEC 7360 Nanomaterials Processing
MSEC 7370 Advanced Polymer Science
MSEC 7395A Microwave & Power Device Physics and Materials
MSEC 7395B Thin Film Photovoltaic Devices
MSEC 7395C Materials Sustainable Energy
MSEC 7395D Polymer Characterization & Processes
MSEC 7395E Industrial Ecology and Sustainability Engineering
MSEC 7395F Materials for Catalysis
MSEC 7395G Applied Plasma Physics
MSEC 7395H Environmental Chem
MSEC 7395I Structure and Properties of Alloys
MSEC 7395J Concrete Materials and Durability
MSEC 7395K Electrical and Magnetic Characterization Methods

Dissertation Courses (18 credit hours)- Students should advance to candidacy prior to taking dissertation courses; exceptions to this rule are at the discretion of the graduate advisor.

MSEC 7199 Dissertation
MSEC 7299 Dissertation
MSEC 7399 Dissertation
MSEC 7599 Dissertation
MSEC 7699 Dissertation
MSEC 7999 Dissertation

Doctoral Assistant Development Course (3 credit hours)- Students who receive an instructional or teaching assistantship are required to register for this course three different semesters. Please see additional information about this course on pp. 24-25.

MSEC 7100 Doctoral Assistant Development

| Advancement to Candidacy Requirements

Comprehensive Examination

Students will be required to pass a comprehensive examination that will assess the student's preparedness to carry out the proposed plan of dissertation research. Students applying for candidacy must have completed all required core and background courses as prescribed in their degree audit. The Advancement to Candidacy Examination will consist of two written components and one oral component. Each student will be required to take the Advancement to Candidacy Examination, which will be conducted by his or her Ph.D. Dissertation Committee. Candidacy examination may be held in-person or remotely by Zoom or Teams. Results of the Advancement to Candidacy Examination will be reported on the Comprehensive Examination report and submitted to the Graduate College. The Advancement to Candidacy Examination will consist of the following three parts: Grant Proposal, Business Plan, and Oral Examination.

- **Grant Proposal:** Each student will prepare an original grant proposal on a current or recent Small Business Innovation Research topic selected by the student and approved by the Ph.D. Dissertation Committee. The purpose of the written exam is to judge the student's ability to design a line of inquiry into a specific scientific topic and is one of the required items for candidacy. The proposal will be based on seminal papers in the field of interest along with other pertinent research information. The student will present the supporting material, along with the topic of the proposal, to the Ph.D. Dissertation Committee for approval prior to writing the proposal. The student will present the background of the proposed work in the Commercialization Forum during the third or fourth semester in the program. The Ph.D. Dissertation Committee will be present at the seminar. The topic of the grant proposal must be different from the planned dissertation research. The proposal will follow the format used by a major granting agency, such as NSF, DoD, DoE or NIH, and will include all pertinent sections. To ensure the student has a clear idea of the requirements of his or her committee, the research advisor and committee will consult with the student during selection of the proposal topic and the writing of the original draft of the proposal. The proposal will be submitted to the Ph.D. Dissertation Committee no later than the fifth week of the fourth semester in the Ph.D. program. This proposal will be read by the Committee members, who will make comments and return a copy of the proposal to the student two weeks prior to the Oral Examination Component of the Advancement to Candidacy Examination.
- **Business Plan:** Each student will be required during the first year to prepare a business plan for a start-up company. The preparation of the business plan will occur during the first year in parallel with the two-semester sequence of courses aimed at developing skills in commercialization and entrepreneurship. The student will defend the business plan in the Commercialization Forum and will be graded on both the written business plan and

their oral presentation by the Ph.D. Dissertation Committee. This business plan and its oral defense constitutes one of the required items for candidacy.

- **Oral Examination:** The Ph.D. Dissertation Committee will question the student about the grant proposal and the sub-discipline the student has chosen for his or her Ph.D. research project. Half of the exam will be devoted to questions relating to the submitted grant proposal. The remaining half will consist of questions in the general field in which the Ph.D. research project will be conducted. Students will be expected to exhibit breadth in their major area of interest and in ancillary fields.

Full time students will be required to take the Advancement to Candidacy Examination no later than their fourth semester in the program. Following the oral questions and answers, the student will leave the examination room. The members of the Ph.D. Dissertation Committee will determine if the student has passed the oral examination. The student will pass the exam if there is no more than one dissenting vote. Should a student fail the exam, they will have the option of taking a second Advancement to Candidacy Examination, which must be passed by the end of the following semester. Failure to pass this exam on two occasions will lead to the student's dismissal from the Ph.D. program.

Dissertation Proposal

A dissertation proposal prepared by the student and approved by the student's Ph.D. Research Advisor and a majority of the other members of the Dissertation Committee is a requirement for Advancement to Candidacy. The proposal must outline the substance and scope of the dissertation research, present the methodology to be used, and survey the relevant literature. The student's Ph.D. Research Advisor and other Dissertation Committee members must indicate approval of the dissertation proposal on the Ph.D. Dissertation Proposal form. This form may be downloaded from the Graduate College's website. A final copy of the dissertation proposal, accompanied by the signed approval form, must be turned in to the Doctoral Program Director, who will forward it to the Dean of the Graduate College for review and final approval.

Successful completion of the Advancement to Candidacy Examination must be followed within 90 days by an oral presentation and defense of the dissertation proposal (while not required, students typically complete the Advancement to Candidacy Examination and the oral presentation/defense of the dissertation proposal on the same day). The oral component of the Advancement to Candidacy Examination will entail a public presentation of the student's dissertation proposal followed immediately by a closed defense of the proposal attended only by the student and his or her Dissertation Committee. Both the presentation and defense must take place on the same day. Passing the Oral Examination requires positive votes from all members of the student's Dissertation Committee. The results of the Defense of Dissertation Proposal form must be filed in the Graduate College before the Dean of the Graduate College gives final approval to candidacy.

The Dissertation Committee recommends the student for Advancement to Candidacy by completing the Application for Advancement to Candidacy. The student should complete and print this form (which may be downloaded from the Graduate College's website) and take it to the candidacy examination for committee signatures. The student should take the signed form and a copy of the dissertation proposal to MSEC Administrative Staff, who will ensure it gets the remaining signatures and submit it to the Graduate College.

|Dissertation Guidelines

Dissertation Research and Writing

All doctoral students are required to complete a dissertation. The dissertation must represent an original contribution to scholarship based on independent investigation. Preparation of the dissertation should follow the guidelines in the current edition of the American Chemical Society (ACS) Style Guide (available as an e-book from the Texas State University Library) or American Institute of Physics (AIP) G37 Style Manual (available in hard copy in the Texas State University Library, call number QC5.45.A45 1990) or in an appropriate professional journal in the designated field, as deemed acceptable by the Dissertation Committee.

Dissertation Enrollment Requirements

After being admitted to candidacy, students must be continuously enrolled for dissertation hours each long semester until the defense of their dissertation. If a student is graduating in the summer, they must be enrolled in at least one hour of dissertation credit that summer. All candidates for graduation must be enrolled in dissertation hours during the term in which the degree is to be conferred. Students must complete a minimum of 18 semester hours of dissertation research and writing credit.

Dissertation Time Limit

Students are expected to complete the dissertation within two years after Advancement to Candidacy. Any exceptions to this time limit require the approval of the doctoral program director and the dean of The Graduate College. The doctoral program director will review each student annually to ascertain their progress in pursuing the degree and will consult with the student's Ph.D. research advisor and dissertation committee on this matter as appropriate.

Dissertation Chair and Committee

The dissertation committee will be responsible for administering the Advancement to Candidacy Comprehensive Examination and will oversee the research progress of a doctoral student and the writing of the student's dissertation. The committee will consist of at least five members, including the student's Ph.D. research advisor, three other MSEC doctoral faculty and at least one external member from outside the College of Science and Engineering or outside the university. The student's Ph.D. research advisor will chair the committee and should help the student determine the composition of the committee. The student, doctoral program director, and the dean of The Graduate College will approve the composition of the dissertation committee.

The student is responsible for obtaining committee members' signatures on the Dissertation/Research Advisor form (Form A) and the Dissertation Committee Request form (Form B) to form the committee. These forms may be downloaded from The Graduate College's website: <http://www.gradcollege.txstate.edu/forms.html>.

Dissertation Committee Changes

Any changes to the dissertation committee must be submitted using the Dissertation Advisor/Committee Member Change Request form for approval to the dissertation committee chair, the doctoral program director, and the dean of The Graduate College. Changes must be submitted at least 60 days before the dissertation defense.

Dissertation Defense

The Dissertation Defense will not be scheduled until all other academic and program requirements have been fulfilled. A complete draft of the dissertation will be given to the members of the Dissertation Committee at least 14 days before the exam date. After committee members have reviewed the draft with the student and provided comments, the student, in consultation with the Ph.D. Research Advisor, will incorporate the recommended changes into a new draft of the dissertation. When each committee member is satisfied that the draft dissertation is defensible, the Dissertation Defense may be scheduled.

The Dissertation Defense will consist of two parts. The first part is a public presentation of the dissertation research. Notice of the defense presentation will be posted at least one week in advance. The second part of the defense will immediately follow the public presentation but will be restricted to the student's Dissertation Committee and entail an oral examination over the dissertation research. Approval of the dissertation requires positive votes from the student's Ph.D. Research Advisor and a majority of the remaining members of the Dissertation Committee. The results of the Dissertation Defense Report must be filed in the Graduate College before the Dean of the Graduate College gives final approval to the dissertation. This form may be downloaded from the Graduate College's website.

Students are expected to complete the dissertation within two years of Advancement to Candidacy. Any exceptions to this time limit require the approval of the Doctoral Program Director and the Dean of the Graduate College. The Doctoral Program Director will review each student annually to ascertain his or her progress in pursuing the degree and will consult with the student's research advisor.

Approval and Submission of the Dissertation

Following approval and signing of the Thesis/Dissertation Committee Approval form by the members of the dissertation committee, the student must submit one copy of the dissertation to the office of The Graduate College for final approval. Specific guidelines for approval and submission of the dissertation can be viewed on The Graduate College Guide To Preparing And Submitting A Thesis or Dissertation guide, located on their website:

<https://www.gradcollege.txst.edu/students/thesis-dissertation/resources.html>. Dissertations must be submitted in electronic format.

|Professional Development Opportunities

MSEC students may participate in internships or other collaborations with industry, other universities, or national laboratories. Students may find these opportunities by working with their Doctoral Research Advisor or the MSEC Director, or they may identify opportunities themselves. Elective course credit (for MSEC 7304) may be possible for students engaged in these opportunities with approval of the MSEC Director.

|Discipline-Specific Extracurricular Opportunities

There are many organizations and events on campus that may be of interest to MSEC students. Examples include professional associations (such as the American Chemical Society and the Institute of Electronics & Electrical Engineers) and organizations (such as the MSEC Student Club, the Microbiology Club and SACNAS-the Society for the Advancement of Chicanos and Native Americans in Science). Information about official campus organizations can be found on the College of Science and Engineering's webpage at <http://www.cose.txstate.edu/student-resources/science-student-organizations.html>. The organizations offer everything from professional advancement programming to outreach activities to social events. Involvement in these organizations is encouraged because it can help students to find jobs and/or provide occasional escape from research and coursework. However, *students should always keep in mind that their primary focus at the university while in the MSEC Program should be meeting the requirements for graduation.*

|Student Commercialization Activities

Boot Camp I

First year students are required to attend the first part of boot camp, which is three- to four days long and is held the last week before school starts in August. In this boot camp the students get practice in entrepreneurship by building a very simple company by the ground up. Students also develop ideas for a larger innovation-based a start-up business. This effort is supported during the day by lectures on critical components of a business plan such as market analysis, financial projections, intellectual property, sales strategies, manufacturing, and management.

Entrepreneurial Coursework

The first boot camp is followed by a two-course series on entrepreneurial skills. This series goes into depth on subjects related to business plans, raising capital, management, intellectual property, market analysis and marketing, sales, manufacturing, and research and development. This series is team-taught between the McCoy School of Business and MSEC. In the first few weeks of the course the students are required to pick an idea related to their research or research interests upon which a business plan and considerable market research and validation can be created that may potentially lead to launching a business.

Boot Camp II

First year students are required to attend the second boot camp, which is three- to four days long and is held after the end of the spring semester in May or June. The business plan produced during the two-course entrepreneurial series is used to propose a start-up related to their research. During the first day of Boot Camp II, students practice pitching their startups and are given feedback and training on their pitches. On the second day, each student gives a business pitch on their idea for a start-up to panels of professionals, investors, staff and faculty. Additional feedback is provided, and the top four pitches are selected to move forward to the finals. The students that did not make the cut are then temporarily put on one of the teams that made the cut. These four teams are then augmented with students from other programs such as the MBA and MFA programs. The teams are then given several days to work with MSEC faculty and Entrepreneurs in Residence (EIRs) to improve their pitch and branding. On the final day, a panel of external judges, including investors and professionals will see and ranks the four pitches. The top team receives a cash award, and the top two teams work with MSEC faculty and EIRs to prepare to compete in additional competitions, including the Rice Business plan competition held the following spring. Students who are members of the top two teams may receive elective course credit (MSEC 7304) for their business development activities.

Commercialization Forum and MSEC Seminar

In parallel to these activities, a seminar series is held every Friday called the Commercialization Forum (MSEC 7101) and MSEC Seminar (MSEC 7102). In this forum the speakers are successful entrepreneurs, officers of companies, IP attorneys, and scientists and engineers who are invited to share their expertise with the students. The presentations are a combination of each speaker's entrepreneurial and research experiences. Students are required to take 4 semesters of this forum; students who are not currently enrolled in the courses are still welcome and encouraged to attend. Students should check their email regularly for seminar announcements.

|Dual Degree MSEC PhD-MBA Program

One of the many distinguishing characteristics of the Materials Science, Engineering, and Commercialization (MSEC) PhD program is the focus on commercialization. The McCoy College of Business participates in this program to provide business skills and knowledge to better prepare the MSEC students for a successful career in technical business. Two of the MSEC core courses, MSEC 7301 and MSEC 7302, are focused on commercialization. The students receive additional business knowledge and experience through other courses as well as two required intensive 40-hour commercialization boot camps.

Towards this end, current MSEC students may also apply for admission to the MBA program offered by the McCoy College of Business. Students who are concurrently enrolled in both of these programs are allowed to fulfill the required 9-hours of MBA electives with core MSEC courses: MSEC 7301 (Practical Skills in Commercialization and Entrepreneurship), MSEC 7302 (Leadership Skills in Commercialization and Entrepreneurship), and MSEC 7101 (Commercialization Forum, three credits of 7101 count towards the MBA). This plan allows completion of both programs in 88 credit hours versus a total of 97 hours if the two programs are completed independently (55 hours for the MSEC Ph.D. and 42 hours for the MBA).

Students should obtain approval from their Dissertation Committee Chair prior to applying to the MBA program. Please make note:

- Admission to the MBA program is separate from admission to the MSEC Ph.D. program and is not guaranteed.
- MSEC assistantship funding is not guaranteed past the fourth long semester.
- Although the curricula are integrated, the MSEC Ph.D. and MBA are separate programs with separate degree requirements. Completion of one-degree program does not infer completion of the other.

Upon acceptance of an MSEC student into the MBA program, it is the responsibility of McCoy College to notify the Graduate College of the student's request to participate in the dual degree MSEC PhD-MBA program. Students approaching 99 credit hours who participate in the dual degree program will need the MSEC Program to contact the Graduate College to ensure the students are not charged nonresident tuition for the remainder of their time in the program.

Suggested PhD/MBA Timeline

Year 1

Fall– 9 MSEC hours (7101, 7102, 7301, 7401)

Spring– 9 MSEC hours (7101, 7102, 7302, 7402)

Year 2

Fall– 9 MSEC hours (7101, 7102, 7 MSEC elective credits)

Spring– 10 MSEC hours (7101, 7102, 8 MSEC elective credits)

Year 3

Fall– 1 MSEC dissertation hours (7199), 10 MBA hours (BA 5351, BA 5100, AC 5361, QMST 5334)

Spring– 1 MSEC dissertation hours (7199), 10 MBA hours (BA 5100, ECO 5316, MKT 5321, FIN 5352)

Summer-- 6 MSEC dissertation hours (7699)

Year 4

Fall– 1 MSEC dissertation hours (7199), 10 MBA hours (BA 5100, MGT 5313, MGT 5314, QMST 5338)

Spring– 9 MSEC dissertation hours (7999)

For more information about the Dual Degree Program, please visit:

<http://www.msec.txstate.edu/Current-Students/dual-PhD-MBA.html>

|Doctoral Leave of Absence Policy

To Whom the Policy Applies

Doctoral students who have achieved candidacy, and thus have a continuous enrollment requirement during long (fall and spring) semesters, may take an approved Leave of Absence (“stop out”) during graduate study under certain conditions and for certain periods of time. A Leave of Absence must be approved by both the student's graduate advisor and the Dean of The Graduate College. A Leave of Absence cannot be approved retroactively for a previous semester and must be submitted no later than the 12th class day of the semester for which the leave is being requested.

Pre-candidacy doctoral students are not required to complete Leave of Absence paperwork if stopping out; however, it is recommended that they do so as the process provides a vehicle for more easily resuming their studies.

Purpose and Limitations

Students may need to discontinue their studies (“*stop out*”) for a short period of time for reasons of personal or family exigency. Students who do not receive an approved Leave of Absence may be denied readmission to their program when attempting to reenter the program. Students who do not receive an approved Leave of Absence but are still readmitted may experience delays in registration and/or face additional fees. An approved Leave of Absence preserves the student's status in their degree program. Leaves of Absence may not be granted for the student in order to avoid exceeding the state doctoral hour limit, to avoid paying tuition, to avoid the regulation on continuous enrollment of doctoral students, or to avoid the full-time requirement for international students.

Access to University Resources During a Leave of Absence

Because the Leave of Absence is intended to be taken for reasons of personal or other exigency as opposed to degree progress, there is no support — whether faculty or university resources (library, office space, etc.) — provided to the student during the Leave of Absence period; students must register if making use of university resources or faculty time. A Leave of Absence does not extend a student's time-to-degree requirement. Discontinuing students for a semester or more, with or without a Leave of Absence, may affect the student's eligibility for other university areas beyond The Graduate College's domain (such as financial aid, health insurance, etc.), and the student is responsible for consulting with those offices about the impact of not maintaining enrollment in the degree program.

Length Limitations of a Leave of Absence

A Leave of Absence can be granted for no more than three long semesters (fall and spring) total. The exact length of the Leave must be made explicit in the Leave of Absence request. Rationale for the Leave must be documented by the applicant.

Process for Requesting a Leave of Absence

Doctoral students who have advanced to candidacy must fill out the Doctoral Candidate Leave of Absence form, found here: <https://www.gradcollege.txst.edu/forms.html>, which will require justification from the appropriate graduate advisor. The form must be submitted to The Graduate College for the Dean's review and approval.

Process for Returning to the University after an Approved Leave of Absence

Upon resuming graduate studies after a semester of non-enrollment, all students must submit reentry paperwork, regardless of whether or not an approved Leave of Absence form is on file. If the student is returning after an absence of less than one calendar year, only the Update Application form is required. If the student is returning to studies after an absence of over a calendar year, it is necessary to reapply to the program.

Depending on the length of time the student is away from the university, a new graduate catalog and/or program degree requirements may be in effect. With an approved Leave of Absence, the student may opt to complete their degree under the previous degree requirements or the new requirements with the approval of the graduate advisor; if the student was away from the university for a semester or more without an approved Leave of Absence on file, the student must complete their degree under the new degree requirements.

|Leave of Absence Policy: Pre-Candidacy Doctoral Students

The university has a continuous enrollment policy for one category of graduate students, namely doctoral students who have achieved candidacy. For other categories of graduate students – pre-candidacy doctoral students, specialist degree students, and master’s degree students – while there is an expectation of enrollment each semester in order to make progress toward the degree, there is no specific continuous enrollment requirement. For that reason, The Graduate College does not require notification if a student decides not to enroll in a given semester. However, students may want to inform their program that they are *stopping out* for a period of time, and programs may find that information useful in tracking student progress. In those cases, students may complete the Leave of Absence Form for Master’s Degree, Specialist Degree, and Pre-Candidacy Doctoral Students form found here, under “Forms for All Master’s Students”: <https://www.gradcollege.txstate.edu/forms.html> and provide it to their program. The program should then provide the form to the Graduate College to expedite processing readmit applications.

Process for Returning to the University after a Leave of Absence

Upon resuming graduate studies after a semester of non-enrollment, all students must submit reentry paperwork, regardless of whether or not a Leave of Absence form is on file. If the student is returning after an absence of less than one calendar year, only the Update Application form is required. If the student is returning to studies after an absence of over a calendar year, it is necessary to reapply to the program.

|Helpful Links

Graduate Catalog

<http://mycatalog.txstate.edu/graduate/science-engineering/materials-commercialization-phd/>

Commencement Information

<http://www.gradcollege.txstate.edu/students/commencement.html>

Curricular Practical Training (CPT) Information for International Students

<https://www.international.txstate.edu/Work-Authorization/cpt.html>

Dissertation and Graduation Deadlines

<http://www.gradcollege.txstate.edu/students/deadlines.html>

Dissertation Forms

<http://www.gradcollege.txstate.edu/forms.html>

Graduate College Guide to Preparing and Submitting a Dissertation

<https://www.gradcollege.txstate.edu/students/thesis-dissertation.html>

Graduate Student Travel Funds Request

<http://www.gradcollege.txstate.edu/funding/travel.html>

Scholarships and Fellowships

<http://www.gradcollege.txstate.edu/funding/scholarships.html>

Counseling Center

<https://www.counseling.txstate.edu/>

Writing Assistance

<http://www.writingcenter.txstate.edu>

<http://www.txstate.edu/slac/subjectarea/writing.html>

Career Services

<http://www.careerservices.txstate.edu/>

MSEC Policies and Procedures

<https://www.msec.txstate.edu/Policies-and-Procedures.html>