



IMSE Graduate Program Guide

Industrial Engineering (IE)
Manufacturing Engineering (MfgE)
Systems Engineering (SE)

Welcome to the graduate programs in the Industrial, Manufacturing & Systems Engineering (IMSE) Department. We hope that your educational experience at the University of Texas at El Paso (UTEP) will be one of the most rewarding experiences in your professional development. Our programs provide an opportunity for you to pursue in-depth graduate education to meet your professional and academic goals.

These guidelines are intended to cover a number of topics concerning the graduate programs in Industrial, Manufacturing & Systems Engineering, including how they are administered. This handbook does not replace the Graduate Catalog of UTEP, which each new student should consult in order to understand the general Graduate School rules and those related to IMSE Department degree programs.

We encourage you to contact us about any questions you may have.

Department of Industrial, Manufacturing & Systems Engineering (IMSE)
Engineering Building A130
imse@utep.edu
(915) 747-5752
(915) 747-7174 (Fax)

Academic Services:

Graduate School & Graduate Catalog: <http://graduate.utep.edu/> (915) 747-5491
Financial Aid: <http://academics.utep.edu/Default.aspx?tabid=8940> (915) 747-5204
International Student Programs: <http://sa.utep.edu/oip/> (915) 747-5664

University of Texas at El Paso
500 West University Drive
El Paso, Texas 79968-0521
<http://www.utep.edu/>

THE UNIVERSITY, THE SETTING

The University of Texas at El Paso is the second oldest of the seven academic components of the University of Texas System with an enrollment of approximately 23,000 students. The campus is located a few minutes north of downtown El Paso, Texas in the foothills of the Franklin Mountains, next to the Rio Grande River. Because of its southwest border location, El Paso offers unique cultural and recreational opportunities. In addition to easy entrance to Mexico through Ciudad Juárez, this location provides access to the Cloudcroft-Ruidoso ski areas, the art communities of Santa Fe and Taos and the natural forests and parks of New Mexico.

HANDS-ON RESEARCH

With hundreds of engineering firms located in the world's largest bi-national border community of El Paso, Texas and Cd. Juárez, Chihuahua, this community is a hub for manufacturing and research. Many Fortune 500 companies are represented, providing an ideal place to gain engineering knowledge and build a professional network. Through internships, co-op programs, opportunities for independent research, and collaboration with faculty researchers, IMSE graduate programs provide students relevant, hands-on experience, and professional value.

General Admissions Requirements

There are two sets of requirements that students must satisfy to be eligible for admission to an IMSE Department graduate program: one developed by the Graduate School of the University, and another developed by the IMSE Program. To be eligible for consideration for admission for graduate study at UTEP, a prospective student must submit a completed application packet to the UTEP Graduate School. <http://graduate.utep.edu/prospective.html>

This packet includes

1. Application form; <https://apply.embark.com/grad/utep>
2. Application fee (for US citizens, permanent residents, and Mexican citizens; or for international applicants);
3. Official transcripts (with baccalaureate degree posted) of all upper division and graduate work from an accredited U.S. institution(s) or equivalent work with final marks ("relacion de estudios") from a foreign institution(s);
4. Baccalaureate degree from an accredited institution in the United States demonstrated by means of a Diploma, or Provisional Certificate ("Carta de Pasante or Título")
5. Official Graduate Record Examination (GRE) scores;
6. Take the TOEFL exam, achieve a minimum score of 500 on UTEP's institutional paper based exam or a minimum score of 61 on the Internet Based TOEFL (IBT). and request your scores to be sent directly to UTEP from the testing center; and,
7. Confirmation of Financial Resources for international students.

For admission to an IMSE Department graduate program, an applicant must meet the following criteria and complete the following steps:

1. Bachelor of Science degree in Industrial, Manufacturing or Systems Engineering, or a degree in a related engineering or science field, or a minimum of 15 semester hours of upper-division course work in engineering. If the undergraduate degree is not in engineering, it is likely that the student will be required to take a series of deficiency or leveling courses. The courses to be taken will be determined on a case-by-case basis. It should be noted that deficiency courses do not count toward the graduate GPA, and must be completed prior to graduate courses as per advisement.
2. Evidence of satisfactory academic achievement and potential. This will usually be assessed by review of performance in upper division (junior and senior level) courses as well as any graduate-level courses completed (usually demonstrated by a GPA greater than 3.0). In addition, results on a standardized examination (GRE) and other information regarding the applicant's background (where that is available) will be considered in making recommendations for admission.
3. Letter of Purpose written by the applicant.
4. Recommendation Letters (2).

Applicants who do not meet all of these criteria are still encouraged to apply, as each student will be considered on an individual basis. While not required, letters of recommendation from faculty members from a student's undergraduate institution will be reviewed when a decision to admit is in question.

The Graduate Studies Committee of the proposed graduate major will recommend to the Graduate School acceptance, conditional acceptance, or rejection of the application after all required documents have been received and reviewed by the Graduate School. The Graduate School will notify the applicant of the final decision.

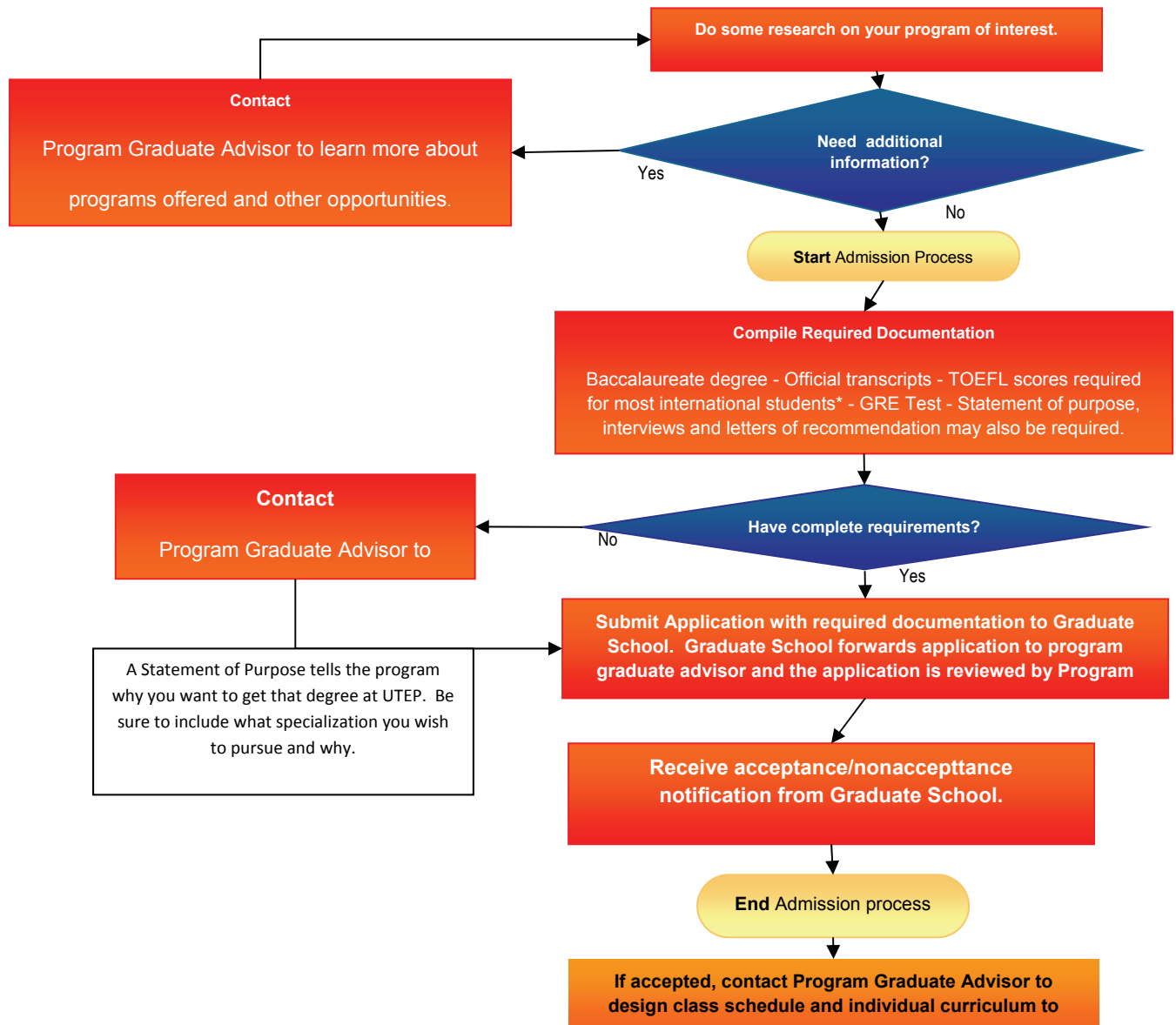
Students with poor English skills, as reflected by low GRE verbal or TOEFL scores, are often required to complete English as a Second Language ESOL or a Technical Writing course as a condition of admission.

All graduate students are expected to maintain a GPA that is equal to or higher than 3.0 at all times. A GPA greater than or equal to 3.0 is required to graduate.

Graduate Admission Process

Please also see the Graduate School's page on the admissions process:

<http://graduate.utep.edu/prospective.html>



***International Students** should contact the International Programs Office (IPO) to work on immigration and personal advising for international students and scholars. IPO services include management of the university's non-immigrant visa programs, administration of the "Programa de Asistencia Estudiantil (PASE)," processing of a student SEVIS I-20 related to the semester, signatures and work authorizations, as well as concurrent enrollment with other academic institutions. For more information contact the International Programs Office at 915.747.5664, Email: oip@utep.edu.

General Procedures for Applying

Applying

Online

<https://apply.embark.com/grad/utep>

Online application to one of UTEP's 60+ graduate programs is easy. The UTEP Graduate School accepts applications year-round and the deadlines depend on the semester in which applicants wish to begin their course work. All applicants are recommended to check their prospective departments for deadline dates and special entry requirements such as GRE, or TOEFL exams. The online application asks for detailed information on candidates' academic background. Before scrolling down to start the application process, candidates should make sure they have the following documents in electronic form:

- Transcripts of all universities and colleges attended prior to application
- Test scores for GRE and TOEFL (according to department requirements)
- Records of any completed certification and non-degree programs
- Proof of citizenship or permanent resident status
- Records of resident history for last two years (military spouses may contact the Registrar's office to establish residency)

Please send required official documents and fees to:

UTEP Graduate School, Academic Services Bldg., Room 223
500 West University Ave. El Paso, TX 79968-0566

If you have any further questions regarding the admission process, please contact The Graduate School by phone at (915) 747-5491, or through e-mail at gradschool@utep.edu

IMPORTANT DATES

	Application deadline for domestic applicants.		Application deadline for international applicants.		Application deadline for Mexican national applicants.		Registration begins
	<i>Deadline</i>	<i>Late Fee Starts</i>	<i>Deadline</i>	<i>Late Fee Starts</i>	<i>Deadline</i>	<i>Late Fee Starts</i>	
FALL	OPEN	July 1 st	March 1st	February 1st	July 1 st	June 1st	Mid June
SPRING	OPEN	November 1 st	September 1st	August 2nd	November 1 st	October 1st	Late October
SUMMER	OPEN	April 1 st			April 1 st	March 1st	Mid March

Note: The time periods required for VISA processing vary widely. International applicants are encouraged to apply as early as possible.

FINANCIAL AID AND ASSISTANTSHIPS

A goal of the IMSE Department is to provide financial aid to all qualified graduate students seeking assistance. To be eligible for an assistantship, you must: 1) be admitted into a degree program, 2) be enrolled full time in course work leading to the degree, 3) be in good academic standing, 4) have an approved Preliminary Degree Plan (PDP) on file in the Graduate School, and 5) a TOEFL score of 500 on UTEP's institutional paper based exam or a minimum score of 61 on the Internet Based TOEFL (IBT). Special exceptions may be made in the final term of study for students who are enrolled on a part-time basis. Normally students requiring more than one deficiency course are eligible for TA or RA funding only when those deficiencies have been completed. The awarding of assistantships, scholarships and fellowships is highly competitive and based on the following:

1. Entering credentials (GRE and TOEFL scores -for international students- and overall undergraduate Grade Point Average - GPA).
2. Graduate overall and major GPA.
3. Skills (teaching/research potential and experience).
4. Program needs.

Some sources of funding require United States citizenship or permanent residency. For the most part, financial aid is equally available to all students; however, good command of the English language is a required skill for most positions, particularly those that are interested in working as teaching assistants or research assistants.

The majority of financial aid takes the form of a half-time Research Assistant (RA) or half-time Teaching Assistant (TA) position, for which students work 20 hours per week on specific assignments. All interested students must submit an RA/TA Application with an attached résumé. Students are responsible for carrying out their duties in a professional manner, and any problems should be reported to their designated supervisors.

In addition, opportunities for research assistantships exist based on funded research. Conditions and periods of employment are determined by the faculty members responsible for these projects within the broad guidelines given for financial aid outlined above.

International students are encouraged to apply for TA and RA support, although only under exceptional cases are international students offered assistantships in their first semester. They are not usually considered for financial aid until they have finished their first semester of coursework. UTEP graduates and U.S. citizens, in that order, have priority for Teaching Assistantships.

TA positions are evaluated every semester. Although a student on academic probation may be allowed to continue in the program, he or she will not be eligible for any assistantship or stipend until the next full term in which good standing has been restored. Master's students are ordinarily limited to two years support as a TA or RA.

All funded students are required to carry 9 hours each regular semester and 3 hours for the summer and must maintain an overall GPA of 3.0. An exception is the semester of graduation, when funded students may take 6 hours in a regular session or 3 hours for the summer. This requirement includes not only formal classes but also research hours (IE 5398 or IE 5399 courses).

Students supported through departmental funds must attend seminars and similar departmental activities. Teaching and research assistantships include a waiver of nonresident tuition. Other than certifying these waivers, the department plays no role in determining the residency status of students.

Mexican students should contact the International Student Office to inquire about scholarships and programs that apply specifically to them. A program of particular interest to Mexican students is PASE (“Programa de Asistencia Estudiantil”), which allows Mexican students to pay Texas resident tuition rates.

Finally, the Graduate School and the Office of Financial Aid have some graduate scholarships. Contact the Graduate School or the Office of Financial Aid for more information.

NOTE: These guidelines are intended only to summarize a number of topics concerning the types of graduate assistantships available in our department, including how they are administered.

These guidelines do not replace the Teaching Assistant / Research Assistant Handbook prepared by the Office of Graduate School, which each student should consult in order to understand the Graduate School rules related to graduate assistantships

(<http://www.utep.edu/graduate/assist/index.html>).

THESIS & NON-THESIS OPTIONS

There are two options for completing the requirements for the Master of Science degree in Industrial Engineering, Manufacturing Engineering or Systems Engineering: Thesis and non-thesis. Students are free to choose the option which best meets their educational and career goals. Students whose ultimate wish is to receive a Doctor of Philosophy (Ph.D.) are encouraged to choose the thesis option. Part time students may prefer to choose the non-thesis option. Students must select a degree option by the time they have completed nine (9) semester hours of graduate course work which might be directed toward the degree requirements. This decision should be made after consultation with the Graduate Advisor and other members of the Graduate Faculty. The degree option and list of courses are designated on a student's Preliminary Degree Plan.

Thesis Option

A student selecting the thesis option must complete a thirty-one (31) semester hour graduate program, which includes twenty-four (24) semester hours of coursework, six (6) semester hours of Thesis (IE 5398 & IE 5399, MFG 5398 & MFG 5399, or SE 5398 & SE 5399), and one (1) semester hour of Graduate Seminar (IE 5195 / MFG 5195 / SE 5095). If the student opts for the thesis option, he / she must select a Thesis Supervising Committee Chairperson (Thesis Advisor). The Thesis Advisor will meet with the student to evaluate if any extra course work is required, discuss possible thesis topics, and provide feedback.

As part of IE/MFG/SE 5398, a student will submit a thesis proposal to his/her Supervising Committee. To complete IE/MFG/SE 5399, a student must write and defend a thesis, which is then accepted by that student's Supervising Committee. Thesis research is expected to make an original contribution to the student's chosen field of specialization. The Graduate School

defines format requirements for the thesis. The chair of the Supervising Committee may have additional requirements before the thesis can be accepted.

SUPERVISING COMMITTEE

Every graduate student under the Thesis option must select a three-member Supervising Committee. The chair of the Supervising Committee must be selected when a student submits her/his Preliminary Degree Plan (see previous section). The selection of the supervising committee may be delayed to the second semester of graduate study. The chair of a student's Supervising Committee must be a member of the engineering graduate faculty. The second committee member must also be an IMSE graduate faculty member. The third graduate faculty member must be from outside the IMSE graduate faculty. The Supervising Committee will administer the final examination for students in the thesis option, which will include an oral presentation of the thesis. The twenty-four (24) hours of coursework, as presented on the Preliminary Degree Plan, must show a cohesive structure, which supports the research goals of the student. The Graduate advisor will enforce this requirement. The twenty-four (24) hours of coursework required for the thesis option must be distributed as shown on the degree plans section.

Students in the thesis option must defend the thesis by taking an oral examination in their final semester. The student must be enrolled for IE 5399 at this time. The thesis must be completed at the time the final exam is scheduled. (Students will be strongly encouraged, with the help of their Supervising Committee chair, to prepare and submit papers based on their thesis to refereed journals). Approximately two weeks prior to the oral examination, a complete thesis draft should go to the committee members for review, and the graduate school for inspecting the format of the thesis. Before the thesis (in whole or in part) can be released to the committee, however, it must be read and approved by the committee chairman. It is good practice to keep committee members aware of research progress and, if feedback and advice are desired, to provide portions of the thesis far in advance of the exam. It is suggested that the thesis clerk in the Graduate School be contacted, who can provide significant guidance on format, early in the process of writing your thesis.

Non-Thesis Option

A student selecting the non-thesis option must complete a thirty-six (36) semester hour program, which includes all thirty-six (36) semester hours of coursework. By the time the students have completed nine (9) semester hours of graduate course work, the student must submit a Preliminary Degree Plan for the 36 hours of coursework. At this time, the student will declare the desired program option. It is the student's responsibility to submit the Preliminary Degree Plan. Students enrolled in the non-thesis option are exempted of the requirement of enrolling in the graduate seminar and taking the oral final examination as requirements for degree. A 30 semester hour non-thesis, Project Practicum option exists in the Systems Engineering program, upon participation and completion of an approved internship or project.

Additional Requirements: Regarding course requirements, all students enrolled in the IMSE Dept. graduate programs must take **at least 15 semester-hours of course work within their major (IE/MFG/SE) if they are following the thesis option or 18 if they are following the non-thesis option.** There is a **6-year time** limit for crediting courses towards a Master of Science degree.

M.S. IN INDUSTRIAL ENGINEERING – CONCENTRATIONS

The M.S. in Industrial Engineering program provides an opportunity for you to pursue in-depth training in sustainability, quality engineering, optimization and supply chain management, or a customized plan to meet your professional and academic goals.

The M.S.I.E. program consists of four (4) core courses, three (3) courses in a concentration area, and free electives.

Core courses:

Each student is expected to have core knowledge in key areas of Systems Engineering. All students are required to complete the following four core courses (15 Semester Credit Hour, SCH) with a “B” average or better and with no more than one “C”.

- IE 5352 Design of Experiments
- IE 5357 Advanced Computer Simulations
- SE5341 Systems Engineering Fundamentals & Architectures (3-0)
- SE5342 Program and Systems Engineering Management (3-0)

Specialization Tracks / Prescribed Electives:

Major concentration areas include: Sustainability Engineering, Quality Engineering, Optimization and Supply Chain Management, and a Customized track approved by the College of Engineering (COE).

- Sustainability Engineering
- Quality Engineering
- Optimization and Supply Chain Management Engineering
- Customized

M.S.I.E. - SUSTAINABILITY

The engineering of sustainable systems involves the process of designing or operating systems such that they use energy and resources sustainably, i.e., at a rate that does not compromise the natural environment, or the ability of future generations to meet their own needs. Areas that can benefit from sustainability engineering include: water supply, food production, housing and shelter, sanitation and waste management, energy development, transportation, industrial processing, development of natural resources, cleaning up polluted waste sites, sitting and planning projects to reduce environmental and social impacts, restoring natural environments such as forests, lakes, streams, and wetlands, improving industrial processes to eliminate waste and reduce consumption, and recommending the appropriate and innovative use of technology.

M.S.I.E. - QUALITY ENGINEERING

Because of the need for a totally systematic approach to quality, Quality Engineering has been identified as a body of knowledge with functional specialization in industry. The Quality Engineering concentration is thus intended to provide the student a foundation for applying the elements of the modern approach to quality, including industrial statistical applications, quality and reliability engineering, and management aspects. The subject matter of these various areas will be brought together to allow for effective integration of appropriate techniques. The fundamental concepts as well as the theory, methodology, technology, and procedures at the leading edge of the discipline will be covered.

IE Program								
CORE	Des. of Expt. IE5352	Adv. Com. Sim. IE5357	SE Fund. SE5341	SE Mgmt. SE5342				
								Thesis
Sustainability Track	Sustainability IE5390	Eng. Sust. IE5390	Eng. Sust. IE5390	Elective				Thesis I
								↓
Quality Track	Adv. Qua. Con. IE5385	Qual. Engg. IE5387	Rel. & Main. MFG5350	Elective				Thesis II
Optimization & SCM Track	Lin. Com. Opt. IE5351	Mod. & Ana. of Mfg. Sys. MFG5321	Adv. Prod. Inv. Cont. MFG5341	Elective				

M.S.I.E. – OPTIMIZATION & SUPPLY CHAIN MANAGEMENT

Engineering Optimization is the subject which uses optimization techniques to achieve design goals in engineering, including choosing the best option from a set of alternatives, or the best input settings for a process. Supply chain management (SCM) is the management of the flow of goods. It includes the movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption. Interconnected or interlinked networks, channels and node businesses are involved in the provision of products and services required by end customers in a supply chain. SCM draws heavily from the areas of operations management, logistics, procurement, and information technology, and strives for an integrated approach.

M.S.I.E. - CUSTOMIZED

Some students have particular career goals for Master’s level specialization that are not covered by the above concentrations. For these students there is the non-designated M.S.I.E. The student can choose to concentrate in technical management, operations research, etc. The student will work closely with the graduate advisor and the chair of his or her committee to layout a plan of the courses that will allow the student to specialize in the chosen area of concentration. This option can be particularly attractive to students whose undergraduate degree is in Engineering, Computer Science, Mathematics, or Science.

M.S. IN MANUFACTURING ENGINEERING – CONCENTRATIONS

The M.S.Mfg.E. program emphasizes finding solutions for real-life manufacturing engineering problems while maintaining a solid theoretical basis. The program's curriculum is composed of four concentrations.

Core courses:

Each student is expected to have core knowledge in key areas of Systems Engineering. All students are required to complete the following four core courses (15 Semester Credit Hour, SCH) with a "B" average or better and with no more than one "C".

- MFG 5311 Design for Manufacturability
- MFG 5312 Strategic Design of Manufacturing Systems
- MFG 5321 Modeling and Analysis of Manufacturing Systems
- SE 5341 Systems Engineering Fundamentals

Specialization Tracks / Prescribed Electives:

Major concentration areas include: Advanced Manufacturing Systems, Analysis of Production Systems, Design of Manufacturing Processes, and a Customized track approved by the College of Engineering (COE).

- Advanced Manufacturing Systems
- Analysis of Production Systems
- Design of Manufacturing Processes
- Customized

M.S.Mfg.E. - Advanced Manufacturing Systems

Advanced manufacturing systems utilize innovative technology and system implementation to improve products and processes. Corporations and small enterprises need advanced manufacturing systems that integrate new and innovative technologies into both methods and processes in order to improve the performance of industrial production through the rapid transfer of science and technology into the manufacturing environment.

M.S.Mfg.E. - Analysis of Production Systems

This area focuses on the interaction of different components of manufacturing systems. The underlying idea is to analyze the entire system and strive for optimal design and operation. Particular emphasis is placed on discrete production systems. This area is divided into two concentrations: Design of Manufacturing Processes and Analysis of Discrete Production Systems. The Design of Manufacturing Processes is designed for students with undergraduate degree in Industrial and Manufacturing engineering. It focuses on tools and techniques of designing a new process for fabrication and/or assembly. The Analysis option focuses on the redesign/continuous improvement of existing manufacturing processes, and is designed for individuals with an industrial engineering/production and operations management background.

MFG Program							
CORE	Des. for Mfg. MFG5311	Stg. Des. Mfg. Sys. MFG5312	Mod. & Ana. of Mfg. Sys. MFG5321	SE Fund. SE5341		Thesis	
Advanced Manufacturing Systems	CAM MFG5359	Mat. Mfg. Proc. MFG5322	Tool. Engg. MFG5320	Elective		Thesis I	
Analysis of Production Systems	Rel. & Main. MFG5350	Adv. Com. Sim. IE5357	Adv. Prod. Inv. Cont. MFG5341	Elective			
Design of Mfg. Processes	Adv. Qua. Cont. MFG5341	Desg. Of Expt. IE5352	Lin. Com. Opt. IE5351	Elective		Thesis II	

M.S.Mfg.E. - Design of Manufacturing Processes

In this area, students focus on analyzing individual components that build manufacturing systems as well as requirements imposed by the end product. This area is divided into two concentrations: Precision Engineering and Automation. Precision Engineering is focused on product and tool design, and CAD/CAM, and is therefore designed for individuals with a Manufacturing/Metallurgical/Chemical Engineering background. The Automation option deals with such areas as testing, robotics, industrial automation, and industrial controls, and thus this concentration is suited for Electrical and Mechanical engineers that desire to focus their skills in a manufacturing setting.

M.S.Mfg.E. - CUSTOMIZED

Some students have particular career goals for Master's level specialization that are not covered by the above concentrations. For these students there is the non-designated M.S.Mfg.E. The student can choose to concentrate in technical management, operations research, etc. The student will work closely with the graduate advisor and the chair of his or her committee to layout a plan of the courses that will allow the student to specialize in the chosen area of concentration. This option can be particularly attractive to students whose undergraduate degree is in Engineering, Computer Science, Mathematics, or Science.

M.S. IN SYSTEMS ENGINEERING – CONCENTRATIONS

Complexity in today's engineering projects is driving increasing demand for Systems Engineers with interdisciplinary training. Technology-driven revolutions can only be comprehended with the systems thinking perspective that a systems engineering education provides. Complex systems require integration for coherent effectiveness. Learn how to assure required capabilities and functional performance in demanding environments.

Masters of Science in Systems Engineering (MSSE) prepare engineers to use system processes and frameworks to define, develop, implement, and test complex systems for the 21st century. Graduates are able to meet the challenges of understanding and applying new engineering models in constantly changing environments.

The M.S.S.E. program partly consists of four (4) core courses, three (3) courses in a concentration area, and free electives.

Core courses:

Each student is expected to have core knowledge in key areas of Systems Engineering. All students are required to complete the following four core courses (15 Semester Credit Hour, SCH) with a "B" average or better and with no more than one "C".

- SE5341 Systems Engineering Fundamentals & Architectures (3-0)
- SE5342 Program and Systems Engineering Management (3-0)
- SE5343 Requirements Engineering (3-0)
- SE5344 Integration, Validation & Testing of Complex Systems (3-0)

Specialization Tracks / Prescribed Electives:

Major concentration areas include: Systems Engineering, Electrical Engineering, Industrial and Manufacturing Engineering, and Computer Science, or others approved by the College of Engineering (COE).

- Systems Engineering
- Electrical & Computer Engineering
- Industrial Engineering / Manufacturing Engineering
- Computer Science

The MSSE program is designed for working professionals and students of all ages with an interest in understanding and applying the systemic approach to the development of complex systems. Course work stresses the importance of projects and the case studies of successful system implementations.

A Graduate Certificate in Systems Engineering (GCSE) is available with the completion of the 4 core courses and the Project Practicum.

For admission requirements, course descriptions, and specialization tracks:

<http://engineering.utep.edu/msse.htm>

Thesis option:

Writing a Thesis demonstrates independent thinking about systems, and is a strong indication to employers about supportable, independent thought by a graduate.

All students are expected to gain awareness of current research areas, and after discussion with program faculty, to propose viable topics for a Thesis.

The Thesis option in the Master of Science in System Engineering program consists of 24 credit hours of coursework, six (6) credit hours of Thesis I & II.

Project Practicum option:

The non-thesis Master of Science in System Engineering consists of 27 credit hours of coursework plus a three (3) credit hour Project Practicum with industry.

The Project Practicum based MSSE is a 30 Semester Credit Hour (SCH) non-thesis program. Course work includes:

1. 12 SCH in the Systems Engineering core courses
2. 9 SCH Prescribed Electives in a concentration
3. 6 SCH Free electives
4. 3 SCH Project Practicum

Fundamentals SE5341	Requirements SE5343				
Core courses					
IV&V SE5344	Modeling & Simulation SE5348	elective		or	
	SE, EE, CS, IE & MFG Tracks		Thesis I		elective
Architecture SE5346	Processes SE5347	Management SE5342	Thesis II		Internship or Project
					Practicum SE5345

For more information, please see <http://imse.utep.edu/> and contact a faculty advisor.

Graduation Requirements

To successfully complete a Master of Science degree program in Industrial, Manufacturing or Systems Engineering, a student must satisfy the following requirement.

1. During the first semester of graduate study, submit to the Graduate School for approval a Preliminary **Degree Plan (PDP)** signed by the program graduate advisor. The PDP should show the courses required by the program that the student must complete prior to graduation. The selection of a supervising committee, composed of at least two program faculty members and one faculty member from outside the program (all members of the Graduate Faculty), may be delayed to the second semester of graduate study. The Degree Plan must be approved by the Dean of the Graduate School.
2. Submit an approved **Application for Graduate Degree** during the final semester of graduate work. This application includes the names and signatures of the Thesis Supervising Committee (Thesis option), a list of courses completed (with grades) and in progress, and the thesis title.
3. **Defense / Completion Form**
4. Attain at least a 3.00 cumulative grade point average in the graduate coursework, in both overall and in the major. Note that grades of C or better must be achieved in all courses counted toward the coursework requirement.
5. Thesis option only: Submit approved final copies of the thesis to the University and the department program.