

Fast Track Program for Master's  
Degree in  
Electrical Engineering

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# Fast Track Program for Master's Degree in Electrical Engineering

This program will enable outstanding senior undergraduate students in Electrical Engineering to satisfy degree requirements leading to a master's degree in Electrical Engineering while completing their undergraduate studies. The program is designed to encourage our most gifted students to complete a masters degree at UTA and is intended to offer these gifted students, who are highly sought after by other institutions, incentives in money and time-saved to remain and complete an advanced degree at UTA. We also hope that this program will help build a relationship with these students that will increase the likelihood that they will remain and pursue doctoral degrees.

## Overview of the Fast Track Program

The program is designed to ensure that gifted students will complete and receive their bachelors degrees on time while simultaneously making substantial progress in masters level studies. The guidelines presented below will be used to develop applicant screening practices and degree requirements that will ensure student success and preserve the educational quality of their undergraduate and graduate degrees. Once applicants have been screened and selected to participate in this program, they will complete a rigorous and carefully selected set of organized advanced undergraduate and graduate courses. These courses may be used to satisfy both undergraduate and graduate degree requirements. The guidelines contained in this program set an upper limit on the number of hours that a student might count toward both the bachelors and the masters degree. In no case may the jointly counted credit hours exceed the maximum specified below. The Electrical Engineering Department will ensure that only outstanding and academically capable students will be allowed to pursue the proposed course of study.

Undergraduate Electrical Engineering students will apply when they are within 30 hours of completing their bachelor degrees. They must have completed at least 30 hours in electrical engineering at UTA, achieving a GPA of at least 3.25 in those courses, and have an overall GPA of 3.25 or better in all college courses. Additionally, they must have completed at least 21 hours of specified undergraduate foundation courses listed below in Table I with a minimum GPA of 3.25.

Table I. Foundation Courses Required for Admission to the Fast Track Program

Course Number	Course Title
EE 3446	Circuit Analysis II
EE 3330	Probability and Random Signals
EE 3318	Discrete Signals and Systems
EE 3316	Continuous Signals and Systems
EE 2441	Digital Logic and Microprocessors I
EE 3407	Electromagnetics

These foundation courses are those that the Electrical Engineering faculty believes are necessary and have predictive value regarding success in advanced coursework prior to making application. Once admitted, students will be allowed to take selected graduate courses that may be used to satisfy both bachelors and masters degree requirements.

Students need not complete the program to receive their bachelors degrees and may elect to end participation at any time. Graduate and undergraduate courses completed while participating in the Fast Track program will be selected so that they may be applied to the bachelors degree even if the student exits the program before completing all available courses. Those who successfully complete the program will be automatically admitted to the Graduate School prior to completing remaining requirements for the masters degree. They will not be required to take the Graduate Record Examination, complete an application for admission to the Graduate School or pay an application fee.

The Fast Track program differs in two important ways from 5-year “stacked” programs currently offered at UTA. It allows students who do not complete the program to use any of the specified graduate course credit in their undergraduate degree plan. This will ensure their graduation will not be delayed by taking graduate courses. Thus, the Fast Track program avoids a problem with timely undergraduate degree completion that can arise in many 5-year programs. Additionally, unlike 5-year programs, the Fast Track program will enable students to receive their bachelors degrees prior to receiving their masters degree and being admitted into a graduate program.

## Key Elements of the Fast Track Program

Participating students will be permitted to use graduate course work to satisfy both undergraduate and graduate degree requirements. When senior-level students are within 15 hours of completing their undergraduate degree requirements, they may take up to 9 hours of graduate level course work designated by the Electrical Engineering Program to satisfy both undergraduate and graduate degree requirements. This will be the maximum amount of credit that can be used as joint credit. In the limiting case, a student completing the maximum allowable hours (9) while in undergraduate status would have to take only 21 additional hours in organized courses to meet minimum requirements for graduation for a MS degree.

Students pursuing the Fast Track master’s degree will be allowed to replace three senior elective courses in the undergraduate program with the graduate courses shown in Table II. Notice the particular graduate course to be counted as a senior elective is contingent on the student taking the core elective course listed in the leftmost column of the table.

Table II. Graduate Courses Allowed for Undergraduate Credit in Fast Track Program Leading to Masters Degree in Electrical Engineering

Undergraduate core elective prerequisite	Graduate course that can be counted as a senior elective	Graduate course description
EE 3302	EE 5308	Power System Modeling and Analysis
EE 3310	EE 5313 EE 5314	Microprocessor Systems Embedded Microcontroller Systems
EE 3444	EE 5310 EE 5340 EE 5341	Digital VLSI Design Semiconductor Device Theory Electronic Materials: Fundamentals and

	EE 5380 EE 5343 EE 6375	Applications Principles of Photonics and Optical Engineering Silicon Integrated Circuit Fabrication Technology Power Electronics Engineering
EE 4314	EE 5307 EE 5328	Linear Systems Engineering Instrumentation and Measurement
EE 4330	EE 5360 EE 5362	Data Communications Engineering Digital Communications
	EE 5302 EE 5306 EE 5350 EE 5356	Random Signals and Noise Electromagnetic Theory Digital Signal Processing Digital Image Processing

## General Rules of Fast Track Program

The Electrical Engineering faculty requires the elements detailed below as a part of its Fast Track program.

1. Twenty one hours of undergraduate foundation courses (Table I) will be used, in part, to screen potential participants. A minimum GPA of 3.25 is required in these courses.
2. Accepted Fast Track students will take a selected set of graduate courses that will meet the educational requirements of both graduate and undergraduate degrees. A total of up to 9 hours of graduate coursework will be allowed for both degrees.
3. Fast Track students must maintain a minimum GPA of 3.25 to remain in and graduate from the graduate program.

No other courses may be substituted for those selected for screening applicants or for joint credit toward both degrees unless reviewed and approved by the EE Graduate Adviser, the EE Graduate Studies Committee and the Dean of Graduate Studies once a program has designated these courses. No changes will be allowed to accommodate individual cases. Changes in the courses used to select students or to satisfy degree requirements will take effect in the semester following final approval by the Dean of Graduate Studies.

## Student Qualifications and Admission Procedures

**Qualifications:** All applicants must complete at least 21 hours of prerequisite foundation coursework as specified by the Electrical Engineering Program (Table I) and earn a minimum GPA of 3.25 in these courses.

**Unconditional Admission:** Additional minimum qualifications are specified below.

1. Must be within 30 hours of graduation with a BSEE degree from UTA.
2. Must have completed at least 30 hours of study at UTA with a 3.25 GPA or better.
3. Must have an overall GPA of at least 3.25 for all college courses.

**Denial:** Students who are not admissible under the conditions specified above will be denied admission to the Fast Track program. They may apply to graduate programs via the regular application process, paying all required fees and meeting all relevant admission criteria. Admission will not be automatic as it will be subject to the normal admission practices of the program to which application is made and the Graduate School.

## Application Procedures

**Application to the Fast Track Program:** Undergraduate students will complete an appropriate application form created by the Office of Graduate Studies for this purpose. This form will be submitted to the Electrical Engineering Department. If approved, this form will be forwarded to the Graduate School. The Graduate School will make the final decision to admit unconditionally, or deny admission. The Graduate School shall enter that decision into the student information system and provide notification to the student.

**Admission to the Graduate School:** Students completing their undergraduate degree requirements may continue their studies toward their masters degrees if they are in good standing in the Fast Track program. The starting semester in the Master's Program typically will be the long semester immediately following the graduation semester. However, students may elect to delay their starting date as specified below.

A special application for admission to the graduate program in which they have begun their studies as Fast Track students will be created by the Graduate School. No fees, transcripts, or test scores will be required and, with the consent of the programs graduate adviser, admission will be automatic. Students planning to pursue a masters degree in a program other than the one in which they participated as Fast Track students must apply as a regular student, completing a full application, paying all fees and meeting all admission requirements. In such cases, admission will not be automatic and will be subject to the normal admission practices of the program and Graduate School.

## Good Standing and Course Enrollment Clearance

**Good Standing:** Students must earn grades of B or better in all the graduate Fast Track-approved courses that will be used to satisfy undergraduate and graduate degree requirements. They must maintain a minimum GPA of 3.25 in all undergraduate courses. Students must enroll in at least 2 graduate courses and earn a B or better in all graduate courses taken prior to receiving their bachelors degree. If a student does not complete the two required graduate courses or fails to make adequate grades, he or she will be obliged to leave the program and apply as a regular graduate student after receiving the bachelors degree.

**Course Enrollment Clearance:** Students must obtain clearance each semester from the graduate adviser to take graduate courses that will be used to satisfy degree requirements. The adviser will monitor student progress carefully and advise accordingly.

## Transition to the Master's Degree

Assuming that a student completes the undergraduate degree in good standing as a Fast-Track student, a graduate matriculation will have already been created for them. A student is not required to apply for admission to graduate school, pay an application fee, provide letters of reference, or take the GRE exam. The hours required for them to complete their master's degree will be adjusted according to the number of Fast Track graduate hours they have completed with grades of B or better. Graduating Fast Track students should see the EE Graduate Adviser to ensure a smooth transition.

## Time Limit to Begin Graduate Studies

A student may take off one long semester plus a summer after receiving the undergraduate degree before starting as a graduate student. An application for graduate admission must be completed and approved before post-baccalaureate studies can begin. Students returning after longer delays will have to apply as a regular student, completing a full application, paying all fees and meeting all admission requirements.

## Taking Breaks During Graduate Studies; Minimum Course Load

Once a student is a graduate student, they are governed by the rules for all graduate students. There is no minimum course load set by the department, and they can take breaks, as outlined in the graduate catalog, but they must complete their master's degree within six years. Consult the graduate adviser for more details.

## Limits on the Number of Graduate Courses

Before graduating with the bachelor's degree, Fast Track students must complete at least two and at most three Fast Track graduate courses with grades of B or better. If a student takes  $x$  hours of well chosen graduate courses under Fast Track rules, and earns grades of at least B in these courses, the number of hours required to complete the master's degree will be reduced by the number of qualifying graduate course credits, i.e., normally 6 or 9.

## Applying to Take Graduate Courses

To register for graduate courses, students must obtain the signature of the EE Graduate Adviser on a special course registration form. The EE Graduate Adviser and EE Undergraduate Adviser will check that they are eligible for the classes that are on the list, that they fit into their undergraduate and graduate degree plans, and that they are not exceeding the 15-hour limit for Fast Track courses.

## Requirements for Staying in the Program

1. A student must maintain an overall GPA of at least 3.25 in undergraduate courses and at least 3.0 for graduate courses.
2. A student is expected to get grades of B or better in graduate courses. If the student earns a grade less than B in a graduate course before earning the undergraduate degree, the student will lose eligibility to remain in the Fast Track program.

3. A student must pass at least two graduate courses with grades of B or better before the student graduates with the bachelor's degree to be eligible to remain in the Fast Track program.
4. During the entire undergraduate experience at UTA, including the period of membership in the Fast Track program, a student cannot repeat more than three courses, and cannot repeat any course more than once. This requirement applies only to undergraduate courses; graduate courses cannot be repeated.

If, at any time, a student fails to satisfy these requirements, the student will be removed from the Fast Track program. Any graduate credits earned will be applied only to the undergraduate degree, and none of the other benefits of membership in the Fast Track program will apply. Students dismissed from the Fast Track program will be eligible to apply to the Electrical Engineering graduate program as a regular applicant. However, graduate courses taken for credit in the undergraduate program cannot be applied towards a graduate degree. Students will have to pay the required fee for the application, as well as meet all the requirements of admission to graduate school as outlined in the Graduate Catalog