Electrical Engineering Student Handbook

The University of Texas at Tyler

Department of Electrical Engineering

Handbook for academic year 2009-2010

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(supersedes previous editions)

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INTRODUCTION

Welcome to the Electrical Engineering (EE) Department at the University of Texas at Tyler. Within these pages you will find information that should help you complete a degree within our program. Specifically, you should find information on the mission, objectives and outcomes of the EE program, on advising, and on curriculum. In this handbook, we introduce you to the ethics expected of a professional engineer. We also provide an overview of societies and activities within the College. Finally, in order to get to know your faculty, we've provided a brief biographical sketch of each of us.

ELECTRICAL ENGINEERING MISSION STATEMENT

The Department of Electrical Engineering supports the mission of the College of Engineering and Computer Science through its teaching, research, and community service activities. The Department is committed to excellence in undergraduate electrical engineering education and provides its students with a strong theoretical foundation, practical engineering skills, experience in communication and teamwork, and training in ethics and professional conduct. Graduates are prepared for successful engagement in industrial enterprises, research and development, graduate study, and practice as professional engineers. The Department also provides advanced studies in support of the graduate programs of the College of Engineering and Computer Science.

CONDUCT AND ETHICS

University Code of Conduct

All students at The University of Texas at Tyler are required to conduct themselves in accordance with the *Student Guide to Conduct and Discipline at UT Tyler*. Students may obtain copies of this publication in the office of the Dean of Student Affairs. It is also published on the Student Affairs web site at http://www.uttyler.edu/mainsite/conduct.html.

Department of Electrical Engineering Code of Student Conduct

The goal of this Code of Student Conduct is to foster the atmosphere of professionalism, mutual respect, and open communication necessary to the fulfillment of the educational mission of the Department of Electrical Engineering.

Student contributions to maintaining this atmosphere include but are not limited to:

- attending the classes for which they are enrolled;
- coming to class prepared to learn and to contribute;
- avoiding behaviors that cause distraction (e.g., having private conversations with other class members, engaging in in-class cellular telephone conversations or text messaging, eating or sleeping in class);
- arriving on time and remaining in the classroom for the entire class period;

- avoiding academic misconduct as described in the *Student Guide to Conduct and Discipline at UT Tyler* (e.g., plagiarism, submitting the work of another as one's own, providing work to another student to submit as his or her own, use of crib sheets or other aids not allowed by the instructor during an examination);
- treating faculty, staff, and peers with respect.

A student whose behavior is detrimental to the learning environment in the classroom may be removed from the classroom at the discretion of the instructor. Repeated problems may result in disciplinary action, including possible dismissal from the class.

The importance of attending classes cannot be overstated. Students who fail to attend class regularly are inviting scholastic difficulty. The *Handbook of Operating Procedures* of The University of Texas at Tyler states that an instructor may, with consent of his or her Dean, request that the Registrar drop a student from a course when the student's absences have jeopardized his or her academic success. Instructors will inform their students if their courses have specific attendance requirements.

Professional Engineering Ethics

As a professional engineer you will be asked to uphold the National Society of Professional Engineers Code of Ethics. A complete listing of the Code can be found at the NSPE website: *http://www.nspe.org/home.asp* . Below we have listed the Fundamental Canons of a Professional Engineer and ask you to visit the website to review the Rules of Practice and Professional Obligations of a Professional Engineer.

NSPE Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

ELECTRICAL ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES

Program Objectives are statements developed by the Electrical Engineering faculty based on input from the program's constituents and reviewed by the College of Engineering and Computer Science, our alumni and the Executive Advisory Board. The statements describe the expected accomplishments of graduates during the first few years after graduation.

The Electrical Engineering Department at The University of Texas at Tyler is committed to excellence in electrical engineering education. Graduates should demonstrate a strong foundation in the area of electrical engineering, practical engineering skills, ethics and professional conduct through successful engagement in industrial enterprises, practice as professional engineers, research and development, graduate studies and teaching.

Educational objectives of the EE program are the knowledge, skills, and experiences that enable graduates to:

1. be involved in professional practice through the application of problem solving skills, using relevant technology in their field;

2. demonstrate professional leadership skills through effective communication, critical thought, creativity and teamwork;

3. be able to integrate engineering principles and social, business, and ethical issues in modern society in the process of decision making;

4. be professionally engaged in serving the needs of business, industry, government, and academic organizations;

5. grow professionally through activities such as graduate study, continuing education, professional licensure, and participation in technical societies

Objective Evaluation

After your graduation from the Electrical Engineering program, we plan to contact you periodically to determine how well we are meeting our Program Objectives. We hope you will share with us how well you were prepared for your new job or graduate school and what you are doing to continue to learn and grow professionally. Your feedback will help us improve the program.

ELECTRICAL ENGINEERING PROGRAM OUTCOMES

EE Program Outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. EE program outcomes are developed by the EE faculty and the College of Engineering and Computer Science based on recommendations from the program's constituencies.

Program Outcomes are supported by coursework. Each engineering course will state in its syllabus which Program Outcomes it supports.

Electrical engineering students at the time of graduation are expected to:

1. have the ability to apply knowledge of the fundamentals of mathematics, science, and engineering;

2. have the ability to use modern engineering tools and techniques in the practice of electrical engineering;

3. have the ability to analyze electrical circuits, devices, and systems;

4. have the ability to design electrical circuits, devices, and systems to meet application requirements;

5. have the ability to design and conduct experiments, and analyze and interpret experimental results;

6. have the ability to identify, formulate, and solve problems in the practice of electrical engineering using appropriate theoretical and experimental methods;

7. have effective written, visual, and oral communication skills;

8. possess an educational background to understand the global context in which engineering is practiced, including:
   a. knowledge of contemporary issues related to science and engineering;
   b. the impact of engineering on society;
   c. the role of ethics in the practice of engineering;

9. have the ability to contribute effectively as members of multi-disciplinary engineering teams;

10. have a recognition of the need for and ability to pursue continued learning throughout their professional careers.

Outcome Assessment

As a student in the Electrical Engineering program you will be asked to perform self-evaluations asking for your assessment of how the courses are supporting the Program Outcomes. We will also ask you to participate in an interview upon graduation. Your evaluations are a vital source of information that will be used to continually improve the quality of the program.

COURSE AND GRADUATION REQUIREMENTS

The instruction and experiences built into the Electrical Engineering Curriculum are the primary means by which you achieve the ten Program Educational Outcomes described above. Courses provide the foundation upon which the curriculum rests. Course descriptions can be found in the UT Tyler catalog

available at *www.uttyler.edu* .The course requirements for a Bachelor of Science in Electrical Engineering are provided in Figure 2 of the Appendix.

Graduation Requirements

You must comply with the following requirements to graduate with a Bachelor of Science degree in Electrical Engineering:

1. satisfactorily complete a minimum of 128 semester hours of coursework;
2. complete the general baccalaureate degree requirements of the University;
3. earn a grade of "C" or better in all EENG, MENG, or ENGR courses;
4. complete the coursework specific to the electrical engineering curriculum;
5. Provide evidence of having taken the National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering examination.

You must also earn a grade of "C" or better in any prerequisite course before you attempt a subsequent course. You may apply for a waiver of this requirement if you believe a waiver is justifiable. However, it is your responsibility to initiate a waiver request and to explain its justification. Waiver requests will not be approved unless the justifications are compelling.

The NCEES Fundamentals of Engineering (FE) examination is offered twice each year in April and October. You should take the FE exam in October of the preceding year if you plan to graduate in May or August; you should take it in April if you plan to graduate in December. Detailed information about the FE exam content, exam schedule, and registration for the exam is available through the Office of the Dean of Engineering and Computer Science.

Persons who take the FE examination in Texas will receive letters from the Texas Board of Professional Engineers (TBPE) notifying them of their examination results. You must bring in your TBPE letter to be copied for Engineering's records as evidence of your having taken the FE examination. All students are required to furnish evidence of having taken the FE examination before their degrees may be issued.

Grade Forgiveness

If you repeat a course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in *both* the original *and* the repeated grade being used to calculate your overall grade point average. A student will receive grade forgiveness for only three (undergraduate student) or two (graduate student) course repeats during his/her career at UT Tyler.

Six-Drop Rule

Any student who began college for the first time as a freshman in the fall of 2007or thereafter may not drop more than six courses during his or her entire undergraduate career. This includes dropped courses at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped

course is any course from which the student withdrew after the published census date published in the Schedule of Classes. Exceptions to the six-drop rule include:

1. withdrawing completely from the University;
2. being administratively dropped from a course by the University;
3. dropping a course due to a provable illness or disability, to care for a sick or injured person, or due to a death in the immediate family;
4. dropping a course due to a documented change of work schedule, or
5. dropping a course for active-duty service with the U.S. armed forces or Texas National Guard.

Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.

Core Curriculum

Each Texas state-supported college is required to establish a core curriculum that includes coursework in communications, mathematics, natural sciences, humanities and visual/performing arts, social sciences, and an institutional option. The core curriculum of UT-Tyler totals 44 hours of coursework. The core curriculum is satisfied for Electrical Engineering majors through their required courses in mathematics, basic sciences, and the non-technical subjects described below.

Courses in social sciences, humanities, and related non-technical areas are an integral part of all engineering degree programs so that engineering graduates will be equipped to communicate effectively, be more aware of their social responsibilities, and be better able to understand the interaction of engineering with its social and political (i.e., public policy and legal) contexts.

The BSEE program therefore includes 30 hours of coursework in the following non-technical areas:

1. Six semester hours of English grammar and composition (ENGL 1301, 1302)
2. Six semester hours of American government and Texas politics (POLS 2305, 2306)
3. Six semester hours of American history (HIST 1301, 1302)
4. Three semester hours of humanities (chosen from PHIL 1301, 2306; ENGL 2310, 2322, 2323, 2350, 2362, 2363; SPCM 1315).
5. Three semester hours of social science (ECON 2301 or ECON 2302).
6. Three semester hours of world or European literature (chosen from ENGL 2322, 2323, 2362, 2363)
7. Three semester hours of visual and performing arts (selected from MUSI 1306, 2301; THTR 1301, 1356; ART 1301, 2303, 2304)

You are exempt from meeting the requirements of the UT-Tyler core curriculum if you are a transfer student who has *completed* the core curriculum of another Texas state-supported institution *prior to transfer*. Transfer students who have not completed the core curriculum of another Texas state-supported school prior to transfer are obligated to meet all requirements of the UT-Tyler core

curriculum. *Transfer students should carefully read the section "Important Information for Transfer Students" below.*

Technical Electives

In the senior year you will select three 3-hour technical electives totaling 9 hours. Acceptable technical electives are described in Figure 3 of the Appendix.

Computer Engineering Specialization

The Department of Electrical Engineering has initiated a new computer engineering specialization within the BSEE curriculum. This specialization is accomplished through the choice of appropriate technical electives. See the Department Chair for details.

Important Information for Transfer Students

There are several important considerations of which students planning to transfer to the UT-Tyler electrical engineering program should be aware.

- **Transfer credits from junior colleges for engineering courses:** Transfer credit is usually *not* given in 3000- or 4000-level engineering courses for coursework taken at junior colleges. EENG 3304 and EENG 3104 are the only typical exceptions to this rule.

- **Differential equations:** A 3-credit course in differential equations is a prerequisite for EENG 3305 (Electric Circuits II), an important gateway to advanced coursework in the BSEE program. Transfer students should earn credit in differential equations *before* enrolling at UT-Tyler in order to take EENG 3305 on schedule in the fall semester of the junior year. *Students who do not have credit in differential equations prior to the start of the junior year can expect significant delays in their graduations*.

- **EENG 3304** (Linear Circuits Analysis I) is a gateway course in the electrical engineering program. Most EENG courses cannot be taken until credit has been earned in EENG 3304. UT-Tyler offers EENG 3304 in the spring semester. It may also be available in the summer session. Texas junior college students may earn credit in this course by taking an appropriate course recognized under the Texas Field of Study Curriculum for Engineering. *Students who do not have credit in EENG 3304 or equivalent prior to the beginning of the junior year can expect significant delays in their graduations*.

- **EENG 3104** (Linear Circuits Analysis I Laboratory) is a required companion course to EENG 3304 and is a gateway course in the electrical engineering laboratory sequence. Junior colleges may not offer a course equivalent to EENG 3104 even when they offer a course equivalent to EENG 3304. EENG 3104 is offered by UT-Tyler in the spring semester. It may also be available in the summer session. Transfer students who cannot earn credit for EENG 3104 at their junior colleges are strongly encouraged to inquire about the possibility of taking EENG 3104 in the summer before the junior year. *Transfer students who begin the junior year without*

credit in EENG 3104 must take in the spring semester of the junior year to avoid delays in their graduations.

- **EENG 3302** (Digital Systems) is offered in the spring semester at UT-Tyler and is a prerequisite to the required course EENG 3307 (Microprocessors), which is scheduled for the fall semester of the junior year. *Transfer students who begin the junior year without credit in EENG 3302 or an equivalent course can expect postponement of EENG 3307 to the senior year*.

- **EENG 1301** (Engineering the Future) is an introduction to electrical engineering offered in the fall semester which emphasizes practical laboratory experience. *Credit in EENG 1301 is required of all electrical engineering students, including transfer students*. Junior colleges may not offer a course equivalent to EENG 1301, but combinations of certain junior-college courses may be used as substitute credit as described below.

- **Introductory Engineering or Science Elective** is an introductory-level course in engineering or science chosen from an approved list. As of this writing, the only UT-Tyler course on the list is ENGR 1200 (Engineering Methods). *Credit in this course is required of all electrical engineering students, including transfer students*. Junior colleges may not offer a course equivalent to ENGR 1200, but combinations of certain junior-college courses may be used as substitute credit as described below.

- **EENG 2101** (MATLAB for Engineers) is a one-credit course in MATLAB, a software package widely used in upper-level courses in electrical engineering. An equivalent course may not be available at junior colleges. EENG 2101 is offered in the spring semester at UT-Tyler; transfer students should plan to take EENG 2101 in the spring of the junior year.

- **UT-Tyler core curriculum requirements:** Transfer students who have completed the core curriculum requirements of another Texas state-supported college or university prior to transfer to UT-Tyler are exempt from the requirement to complete the 44-hour UT-Tyler core curriculum. However, the BSEE degree at UT-Tyler requires a minimum of 128 semester hours in *all* cases, and transfer students who have completed core curriculum requirements of fewer than 44 hours will be required to make up the difference with coursework of their choice. (See below under "Pre-engineering courses not required in the BSEE program").

  However, transfer students are *not* exempt from core-curriculum courses specifically required by the BSEE program even if they have completed the core curriculum of another Texas state-supported school. For example, the BSEE program specifies ECON 2301 or ECON 2302 (Principles of Economics I or II) as the social / behavioral science component of the core curriculum. A transfer student whose completed core curriculum did not include ECON 2301 or 2302 or equivalent would be required to earn credit for one of these courses at UT-Tyler.

  Students who have not already fulfilled the requirements of the core curriculum of another Texas state-supported school at the time of transfer will be required to fulfill the requirements of the UT-Tyler core curriculum.

- **Pre-engineering courses not required in the BSEE program:** Transfer students should be aware that certain courses which may be part of a junior college pre-engineering program are not required in the UT-Tyler BSEE program. Examples of such courses are Chemistry II, Engineering Design Graphics, and Dynamics. Such courses are not usually accepted for credit toward the BSEE degree except to make up the difference between UT-Tyler's 44-hour core curriculum and a previously-completed Texas core curriculum of fewer than 44 hours (see above under "UT-Tyler core curriculum requirements"). Certain exceptions are made for Engineering Design Graphics, as noted in the following paragraph.

- **Susbstitutions for EENG 1301, COSC 1336/1136, and the Introductory Engineering or Science Elective:** Transfer students may earn credit for these courses in the following ways outlined in the table below. Numbers in parentheses indicate notes following the table.

Junior College Coursework					UT-Tyler Coursework Credit (1)
Intro to Engr (2)	Tech. Comm (3)	Eng. Des. Graphics	Computer Apps (4)	Structured Programming	
					COSC 1336/1126 (5)
					COSC 1336/1126
					EENG 1301
					EENG 1301
					EENG 1301
					ENGR 1200
					ENGR 1200
					ENGR 1200
					ENGR 1200, COSC 1336/1136
					ENGR 1200, COSC 1336/1136
					ENGR 1200, COSC 1336/1136
					ENGR 1200, EENG 1301
					ENGR 1200, EENG 1301
					ENGR 1200, EENG 1301
					EENG 1301, COSC 1336/1136
					EENG 1301, COSC 1336/1136
					EENG 1301, COSC 1336/1136
					ENGR 1200, EENG 1301, COSC 1336/1136
					ENGR 1200, EENG 1301, COSC 1336/1136
					ENGR 1200, EENG 1301, COSC 1336/1136

Notes:
(1). The total number of transfer credits given by UT-Tyler for the junior college coursework listed above may not exceed the number of credits given by the junior college.
(2). Often listed as ENGR 1101.
(3). Some junior-college programs permit pre-engineering students to substitute a course in technical communications for the second required course in English grammar and composition in

the core curriculum (ENGL 1302). Transfer students may use their credit in technical communications as a part of one of the substitutions listed above *or* for credit in ENGL 1302, *but not both*.
(4). This is a course in applications of business or office software (e.g., Microsoft Office applications).
(5). All students enrolled in COSC 1136 (Programming Fundamentals Laboratory) must have concurrent registration in COSC 1336 (Programming Fundamentals) even if they have previously completed a course in structured programming elsewhere.

- **Plan early!** Students thinking about transferring to the UT-Tyler BSEE program should schedule an appointment as soon as possible with a UT-Tyler engineering advisor to design a program that will ensure a smooth transfer.

ADVISORS

Upon your admission to the University of Texas at Tyler as an electrical engineering major, you will be assigned an academic advisor. At a minimum, you must visit your advisor before you enroll in courses for the following semester. You should feel free to visit your advisor at any time if you have questions about your program. Your advisor may be willing to provide advice and guidance in matters affecting your academic performance and your career plans.

STUDENT RESPONSIBILITY FOR MEETING DEGREE REQUIREMENTS

You have the ultimate responsibility for meeting degree requirements. It is *your* responsibility to know the degree requirements and to be actively involved in developing a plan of study to meet these requirements.

ADVISING PROCEDURE FOR COURSE ENROLLMENT

Each currently-enrolled EE student must be advised for the following semester or summer term by an advisor. An advising "window" will be available during each term for this purpose. The advising window for spring semester occurs in November; the advising window for fall is in April.

You will have a "hold" placed on your registration each term. This will prevent your registration for courses until the hold is removed. Your advisor will remove the hold after you have been advised. *You will not be allowed to register for courses without advising.*

Your responsibilities:

- *Verify who is your advisor.* A list of EE students and advisors will be posted.

- *Make an appointment to meet with your advisor during the advising window.* You should make an appointment at least 24 hours in advance. Your advisor is not obligated to provide drop-in advising.

You are strongly encouraged to complete your advising during the advising window and to not postpone advising until the week before classes begin.

- *Complete your part of the Registration Advising Form* (*RAF*). The Department office will provide copies of the RAF. A sample of the RAF is found in Figure 1 of the Appendix. Completing your part of the RAF requires that you:

    1. Review the EE program and determine the courses you need;
    2. List those courses *and their prerequisites or co-requisites* on the RAF in the spaces provided (consult the 2008–20010 Catalog for course prerequisites and co-requisites);
    3. Develop your course schedule;
    4. Complete the RAF by adding section numbers, meeting days and times, room assignments, and computer call numbers.

- *Obtain a copy of your Degree Audit Transcript and bring it with you.*

- *Keep your appointment.*

- *Sign* the RAF at the end of your advising session; make certain your advisor signs it and makes a copy for you. *Keep* the copy for your records.

Your advisor's responsibilities

- Your advisor will post an advising schedule before the advising window opens.

- Your advisor will sign the RAF and make a copy for you. The original of the RAF will go in your file along with the Degree Audit Transcript you brought to your advising session.

- Your advisor will remove the registration hold after your advising session.

Other important things to know

- *You should not expect your advisor to be able to give you an immediate response whether a particular course from another institution will transfer for credit.* This is especially true if the course(s) in question come from institutions that do not participate in the Texas common course-numbering system or the Texas Higher Education Coordinating Board's Common Field of Study Curriculum for Engineering, which is described on pp. 66–68 of the following publication:

http://www.thecb.state.tx.us//AAR/UndergraduateEd/WorkforceEd/ACGM2k/ACGM_FALL2K5_FINAL.doc

Questions about transferability of core curriculum courses which are not prerequisites to engineering coursework (e.g., US History, Humanities, Fine Arts) should be directed to the Registrar. *It is your responsibility to obtain evidence of transferability to UT-Tyler for credits earned elsewhere.*

- *You must obtain transcripts from other institutions for coursework you intend to transfer to UT-Tyler.* Federal law requires *you* to authorize the release of your transcripts; UT-Tyler *cannot* obtain your transcripts for you.

- *You are required to bring an additional copy of your transcripts from other schools to Engineering whenever you bring transcripts to the UT-Tyler Registrar.* Transcript copies for Engineering records do not need to be *official* transcripts; photocopies of official transcripts are sufficient. Your Engineering records must be complete before your degree may be issued.

- *You should carefully check your UT-Tyler transcript and degree plan for errors.*

- *You must obtain prior approval to take coursework elsewhere while you are enrolled at UT-Tyler if you plan to transfer that work to UT-Tyler for credit.* Application to take coursework elsewhere for transfer credit is made on the Undergraduate Transient Admission form available in ADM 221. Approval must be obtained from your advisor, the Department Chair, the Dean of the College, and the University Registrar. *Approval is not automatic and may not be granted if equivalent coursework is available at UT-Tyler.*

- *You should be aware that deviations from the degree plan require written approval.* Typical deviations include taking a course without a specified prerequisite or substitution of one course for another.

- *You should develop an alternate schedule each semester.* This is a good idea in the event that a particular course section is filled when you try to register.

- *You should be aware of the requirement to sign the degree plan in the second semester of the junior year.* This may be accomplished at your advising session in the spring semester of the junior year. The Degree Audit Transcript you bring to this advising session will be used in connection with the Degree Plan Review form to create the formal degree plan. The Degree Plan Review form must be signed by you, your advisor, and the Department Chair. The Degree Plan Review form is shown in Figure 4 of the Appendix.

ELECTRICAL ENGINEERING LABORATORY POLICIES

The following policies are mandated for all laboratories over which the Department of Electrical Engineering has jurisdiction. Laboratory supervisors (faculty members or appointed graduate laboratory assistants) have the authority to expel from the laboratory those users whose behavior contravenes these policies.

Laboratory Security

- A University laboratory supervisor must be present in the laboratory when students are working.
- Students must leave the laboratory when told to do so by the laboratory supervisor. Laboratory supervisors are to ensure that all students are out of the laboratory and that the door is locked before leaving.

- Removal of any equipment from a laboratory without prior written approval constitutes theft and may be prosecuted as such. Students wishing to borrow equipment from a laboratory must submit a written request; equipment will not be loaned until such request is approved. Students receiving loaned equipment assume all liability for its repair or replacement. Equipment will NOT be loaned if this will impede the educational mission of the laboratory.

Laboratory Safety Regulations

- Only employees of the University Physical Plant may alter the wiring of any ac line or outlet.
- Only authorized laboratory supervisors may remove covers from laboratory equipment, including test instruments (bench-mounted or portable) and computers. Any repair (including fuse replacement) of bench equipment may be performed only by laboratory supervisors.
- Appropriate clothing must be worn at all times in the laboratory. "Appropriate" clothing is clothing that will provide proper protection in the laboratory environment.
- Laboratory users must exercise care in energizing circuits. Appropriate current limits must be set before energizing circuits connected to bench dc power supplies. Circuits connected directly to the ac power line must include a circuit breaker or fuse and may be energized only with direct supervision of the laboratory supervisor.
- Students are expected to act in a professional manner at all times while in the laboratory. Practical jokes and horseplay are unacceptable behaviors.
- Appropriate care must be exercised when soldering/de-soldering equipment is in use. Students are not to use this equipment without permission of a laboratory supervisor. Safety glasses must be worn. Common electronic solders contain lead; soldering must be done with adequate ventilation, and persons who have been handling solder must wash their hands before eating or drinking.

General Laboratory Policies

- Engineering students with a valid UT Tyler student ID card are allowed to use the laboratory facilities only during posted laboratory hours and under the supervision of a responsible laboratory supervisor (faculty member or appointed graduate laboratory assistant). Non-students are permitted in the laboratory only with permission of a faculty member.
- Food, drink, and tobacco are not permitted in any laboratory. *This includes candy, gum, bottled water, and soft drinks in re-sealable bottles*.
- Users of the laboratory are expected to be respectful and use common courtesy. Loud talk and the use of cell phones are not permitted in the laboratory.
- Offensive or inappropriate materials are not permitted in the laboratory. Use of laboratory computers to access such materials may result in disciplinary action.
- Laboratory users must avoid excessive or unnecessary printing. Laboratory supervisors may report abuses of the printing privilege to CECS administrators.
- Students may request the installation of software on University computers but may not install it themselves. This prohibition includes software supplied with textbooks.
- No copying or duplication of copyrighted software will be permitted. This prohibition includes both program files and data files. Making copies of copyrighted software is a violation of Federal law and may result in criminal charges.
- Shared workspaces must be cleaned and experimental apparatus must be returned to storage at the end of a laboratory session.

- All bench equipment is to be turned off at the conclusion of a laboratory session, including computers and monitors. The test leads of digital multimeters must be configured for voltmeter/ohmmeter connection at the end of a laboratory session.
- Test equipment may not be moved from one bench to another without permission of the laboratory supervisor. Any equipment moved from one bench to another must be returned to its original location at the conclusion of the laboratory session.
- Students are expected to show up for laboratory classes at their scheduled times.
- Damaged components and equipment must be reported to the laboratory supervisor.
- The laboratory supervisor is to be informed when the last component in a bin or drawer is removed.
- By entering and using the laboratory, the user agrees to observe all policies and regulations, as well as all UT System policies and regulations.
- Faculty members may make exceptions to these general policies if warranted. Graduate laboratory assistants are NOT authorized to make exceptions.

Further Information about UT System Policies

INFORMATION RESOURCES USE AND SECURITY POLICY
http://www.utsystem.edu/policy/policies/uts165.html

UT SYSTEM REGENTS' RULES
http://www.utsystem.edu/bor/rules.htm

INTELLECTUAL PROPERTY POLICY
http://www.utsystem.edu/OGC/intellectualproperty/polguide.htm

TRADEMARKS AND SEALS
http://www.utsystem.edu/bor/RegentalPolicies/Trademark.htm

COMPUTER CRIMES LAW
http://www.utexas.edu/policies/computercrimes.html

STUDENT CHAPTER OF THE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, INC. (IEEE)

The IEEE promotes the process of creating, developing, integrating, sharing, and applying knowledge about electrical, electronic, and information technologies for the benefit of humanity and the profession. Participating in IEEE will permit you to meet your classmates and faculty members in a social environment. It also will help in building professional networks and in identifying career opportunities. Upon graduation, you may become a full member of IEEE and continue to develop professional connections and technical competencies through your involvement with the society.

Dr. Hassan El-Kishky is the faculty advisor for IEEE. Contact him for more information.

ELECTRICAL ENGINEERING FACULTY

Mukul Shirvaikar
Department Chair and Professor of Electrical Engineering
Ph.D., University of Tennessee
RBN 2004, 903-565-5620

Dr. Shirvaikar's interests are embedded systems, systems-on-a-chip designs, image and signal processing, robotics and computer vision, pattern recognition, and neural networks. Prior to joining UT Tyler, Dr. Shirvaikar had 8 years of industrial experience and 2 years of academic experience, including 5 years at Texas Instruments Inc. as a senior engineer.

David Beams, PE
Associate Professor of Electrical Engineering
Ph.D., University of Wisconsin
RBN 2010, 903-565-5587

Dr. Beams' interests are in circuit analysis, linear and nonlinear electronics, semiconductor devices, instrumentation systems, medical electronics, and power electronics. Prior to joining UT Tyler, he worked as an engineer primarily in the area of electronic instrumentation design for more than 16 years with DICKEY-john Corporation of Auburn, IL, and Norland Corporation of Ft. Atkinson, WI.
Dr. Beams is a licensed Professional Engineer in Wisconsin and Texas.

Hassan El-Kishky, PE, MBA
Associate Professor of Electrical Engineering
Ph.D., Arizona State University
RBN 2014, 903-565-5580

Dr. El-Kishky's interests are in high voltage rotating machines, electrical and electronic insulation, modeling of high voltage phenomena, computational models in engineering, lightning modeling, neural/physiological modeling, and electromagnetic phenomena. Dr. El-Kishky worked as an R&D Manager at National Electric Coil, Inc. prior to joining UT-Tyler. Dr. El-Kishky is a licensed professional engineer in Texas.

David H. Hoe
Assistant Professor of Electrical Engineering
Ph.D., University of Toronto, Toronto, Ontario
RBN 1011, 903-565-5952

Dr. Hoe's interests are in integrated circuit design, mixed-signal system design, low-power analog and digital circuits, and data-converter architectures. Prior to joining UT-Tyler, Dr. Hoe worked for five

years designing microelectronic circuits at the General Electric Research and Development Center in Schenectady, NY, and had ten years of academic experience.

Hector A. Ochoa
Assistant Professor of Electrical Engineering
Ph.D., University of Texas at El Paso, El Paso Texas
RBS 2029, 903-566-7108

Dr. Ochoa obtained his Ph.D. in Computer Engineering from the University of Texas at El Pas where his doctoral research was supported by the Army Research Laboratories (ARL). His primary research interests are radar signal analysis, including Doppler analysis of high-velocity radar targets.

Ronald J. Pieper
Associate Professor of Electrical Engineering
Ph.D., University of Iowa, Iowa City
RBN 2015, 903-566-7383

Dr. Pieper worked in industry as a semiconductor process engineer prior to completing his PhD. He has over 14 years of academic experience and is a registered professional engineer (PE) in the state of Virginia. His research interests include semiconductor devices and circuits, engineering optics, fiber optics and image processing.

APPENDIX

Departments of Electrical and Mechanical Engineering

REGISTRATION ADVISING FORM

Directions: The student must complete this advising form each semester in consultation with his/her advisor before registering for classes. Any changes, except possibly section changes, must be discussed with the advisor.

Student: _____ ID No. _____

Semester (check one): ☐Fall ☐Spring ☐SS1 ☐SS2 ☐SS 10 Week ☐Other (explain): Year: _____

Advisor: _____

Courses			Prerequisite / Co-requisites *	Schedule	
Computer Call No.	Course & Section	Course Title	✓	Days	Times

**Students are to fill in prerequisites and co-requisites. Advisor must verify completion of all prerequisites with a grade of C or better before approving a course selection.*

Student Comments: _____

_____

_____

Signature: _____ Date: _____

Advisor Comments: _____

_____

_____

Signature: _____ Date: _____

Figure 1: Registration Advising Form

THE UNIVERSITY OF TEXAS AT TYLER
BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING
Suggested Schedule – Curriculum Effective Fall, 2009

Freshman Year

First Semester			**Second Semester**		
ENGL 1301	Grammar & Composition I	3	ENGL 1302	Grammar & Composition II	3
CHEM 1311	General Chemistry I	3	PHYS 2325	University Physics I	3
CHEM 1111	General Chemistry I Lab	1	PHYS 2125	Physics I Lab	1
MATH 2413	Calculus I	4	MATH 2414	Calculus II	4
( )	Intro Eng/Science Elective[1]	2	COSC 1336	Programming Fundamentals	3
EENG 1301	Engineering The Future	3	COSC 1136	Programming Fund. Lab	1
			EENG 2101	MATLAB for Engineers	1
	Total	**16**		**Total**	**16**

Sophomore Year

First Semester			**Second Semester**		
HIST 1301	United States History I	3	HIST 1302	United States History II	3
( )	Visual & Performing Arts	3	( )	Humanities Elective	3
MATH 3404	Multivariate Calculus	4	ECON ( )	Principles of Economics[2]	3
PHYS 2326	University Physics II	3	MATH 3305	Differential Equations	3
PHYS 2126	University Physics II Lab	1	EENG 3304	Linear Circuits Analysis I	3
EENG 3302	Digital Systems	3	EENG 3104	Linear Circuits Anal. I Lab	1
	Total	**17**		**Total**	**16**

Junior Year

First Semester			**Second Semester**		
MATH 3203	Matrix Methods for Engr.[3]	2	ENGR 3314	Design Methodology – Engr	3
MATH 3351	Probability and Statistics	3	ENGR 4308	Automatic Controls	3
EENG 3303	Electromagnetic Fields	3	EENG 3307	Microprocessors	3
EENG 3305	Linear Circuits Analysis II	3	EENG 4309	Electronic Circuits II	3
EENG 3306	Electronic Circuits I	3	EENG 4109	Electronic Circuits II Lab	1
EENG 3106	Electronic Circuits I Lab	1	EENG 4311	Signals and Systems	3
	Total	**15**		**Total**	**16**

Senior Year

First Semester			**Second Semester**		
POLS 2305	Intro American Government	3	POLS 2306	Intro. Texas Politics	3
ENGR 4109	Senior Seminar	1	ENGL ( )	World or European Lit.	3
EENG 4115	Senior Design I	1	EENG 4315	Senior Design II	3
EENG 4310	Electric Power Systems	3	( )	Technical Elective	3
EENG 4312	Communications Theory	3	( )	Technical Elective	3
( )	Technical Elective	3			
( )	Eng/Science Elective[4]	3			
	Total	**17**		**Total**	**15**

[1] Selected from approved departmental list
[2] Selected from ECON 2301 or ECON 2302
[3] MATH 3315 (Linear Algebra and Matrix Theory) may be substituted for MATH 3203
[4] Course in science, mathematics, or engineering outside of electrical engineering — 2000-level or above, may be used toward a minor

Figure 2: Electrical engineering course requirements

University of Texas at Tyler
College of Engineering and Computer Science
Department of Electrical Engineering

Electives in the Electrical Engineering Curriculum

Revised 9 April 2009

Area	Credit Hours	Acceptable Courses
World or European Literature	3	ENGL 2322, ENGL 2323, ENGL 2362, ENGL 2363
Humanities	3	PHIL 1301, PHIL 2306, ENGL 2310, ENGL 2322, ENGL 2323, ENGL 2350, ENGL 2362, ENGL 2363, SPCM 1315
Visual and Performing Arts	3	MUSI 1306, MUSI 2301, THTR 1301, THTR 1356, ART 1301, ART 2303, ART 2304
Technical Electives	9	Any 4000-level EENG, MENG, ENGR, or COSC course that is not required. However, at least six hours of technical electives must be in electrical engineering courses. Students must meet prerequisites for courses taken as technical electives. No more than three hours of technical elective credit may be earned through undergraduate research (ENGR 4395), independent study (ENGR 4199–4399), or Undergraduate Internship (ENGR 4370).
Introductory Engineering or Science Elective	2	ENGR 1200 is the only approved course at this time
Engineering or Science Elective	3	2000-level or above course outside of electrical engineering in science, engineering, or mathematics.

Figure 3. List of approved electives

University of Texas at Tyler
Department of Electrical Engineering

The University of Texas at Tyler

Department of Electrical Engineering: Degree Plan - Bachelor of Science in Electrical Engineering

Name:_____ Student ID #:_____

				Semester	Grade*	Comments / Transfer Course
FRESHMAN 1st Semester	CHEM	1311	General Chemistry I 3			
	CHEM	1111	General Chemistry I Lab 1			
	ENGL	1301	Grammar & Composition I 3			
	MATH	2413	Calculus I 4			
	(	)	Intro. Eng/Science Elective[1] 2			
	EENG	1301	Engineering the Future 3			
FRESHMAN 2nd Semester	PHYS	2325	University Physics I 3			
	PHYS	2125	University Physics I Lab 1			
	ENGL	1302	Grammar & Composition II 3			
	MATH	2414	Calculus II 4			
	COSC	1336	Programming Fundamentals 3			
	COSC	1136	Programming Fund. Lab 1			
	EENG	2101	MATLAB for Engineers 1			
SOPHOMORE 1st Semester	HIST	1301	United States History I 3			
	MATH	3404	Multivariate Calculus 4			
	PHYS	2326	University Physics II 3			
	PHYS	2126	University Physics II Lab 1			
	(	)	Visual & Peforming Arts 3			
	EENG	3302	Digital Systems 3			
SOPHOMORE 2nd Semester	HIST	1302	United States History II 3			
	MATH	3305	Differential Equations 3			
	ECON	( )	Principles of Economics[2] 3			
	(	)	Humanities Elective 3			
	EENG	3304	Linear Circuits Analysis I 3			
	EENG	3104	Linear Circuits Analysis I Lab 1			
JUNIOR 1st Semester	MATH	3203	Matrix Methods for Engr.[3] 2			
	MATH	3351	Probability & Statistics 3			
	EENG	3303	Electromagnetic Fields 3			
	EENG	3305	Linear Circuits Analysis II 3			
	EENG	3306	Electronic Circuits I 3			
	EENG	3106	Electronic Circuits I Lab 1			
JUNIOR 2nd Semester	ENGR	3314	Design Methodology in Eng. 3			
	ENGR	4308	Automatic Controls 3			
	EENG	3307	Microprocessors 3			
	EENG	4309	Electronic Circuits II 3			
	EENG	4109	Electronic Circuits II Lab 1			
	EENG	4311	Signals and Systems 3			
SENIOR 1st Semester	POLS	2305	Intro. American Government 3			
	ENGR	4109	Senior Seminar 3			
	EENG	4115	Senior Design I 1			
	EENG	4310	Electric Power Systems 3			
	EENG	4312	Communications Theory 3			
	(	)	Technical Elective[2] 3			
	(	)	Eng/Science Elective[4] 3			
SENIOR 2nd Semester	EENG	4315	Senior Design II 3			
	ENGL	( )	World or European Lit.[1] 3			
	POLS	2306	Intro. Texas Politics 3			
	(	)	Technical Elective 3			
	(	)	Technical Elective 3			

[1] Selected from approved departmental list [3] MATH 3315 (Linear Algebra and Matrix Theory) can be substituted for MATH 3203

[2] Selected from ECON 2301 or ECON 2302 [4] Course outside of Electrical Engineering-2000-level or above, may be used toward a minor

Figure 4. Degree Plan Review form

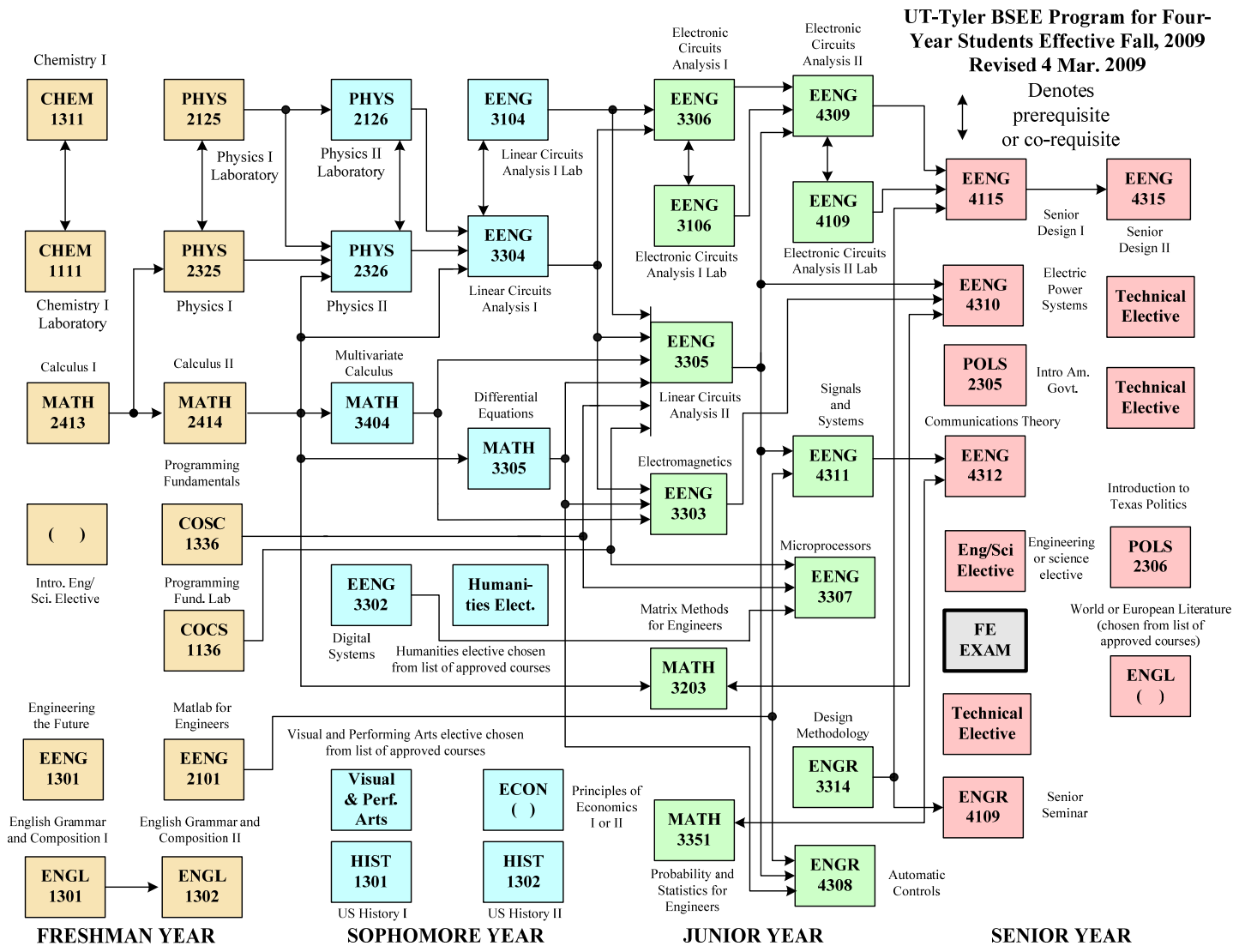

Figure 5. EE program flowchart for four-year students

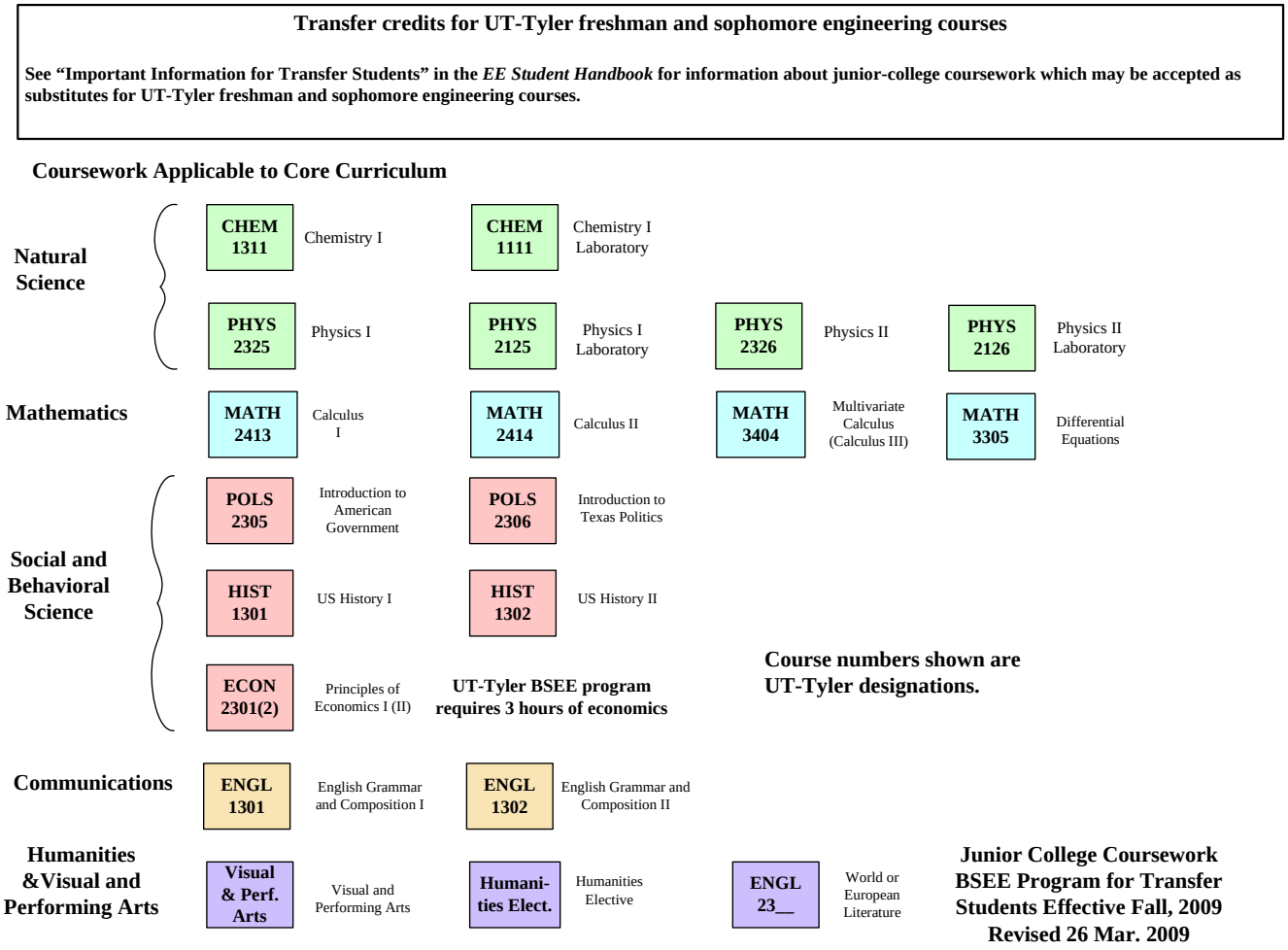

Figure 6. EE program flowchart for transfer students

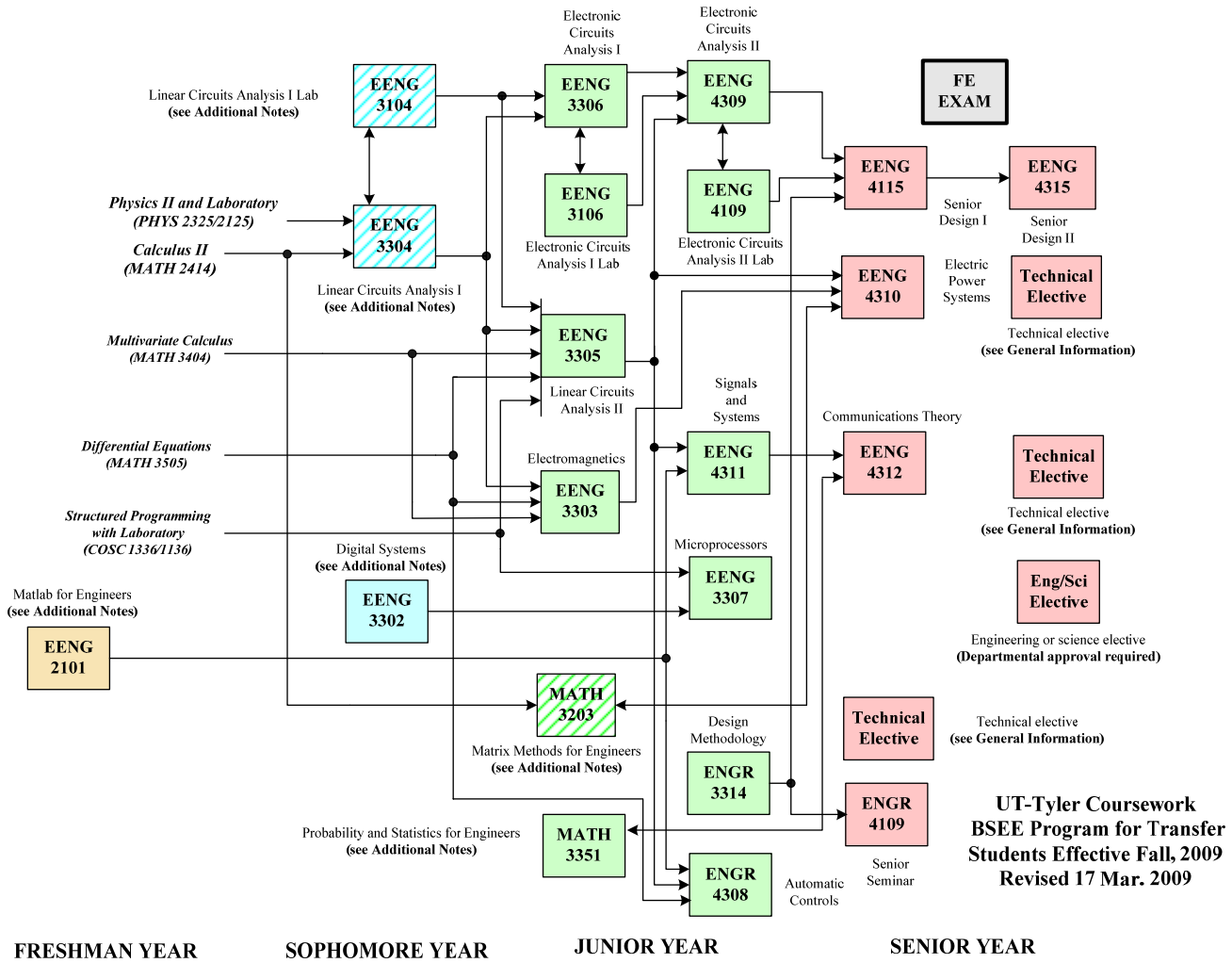

Figure 6. EE program Flowchart for Transfer Students, p. 2

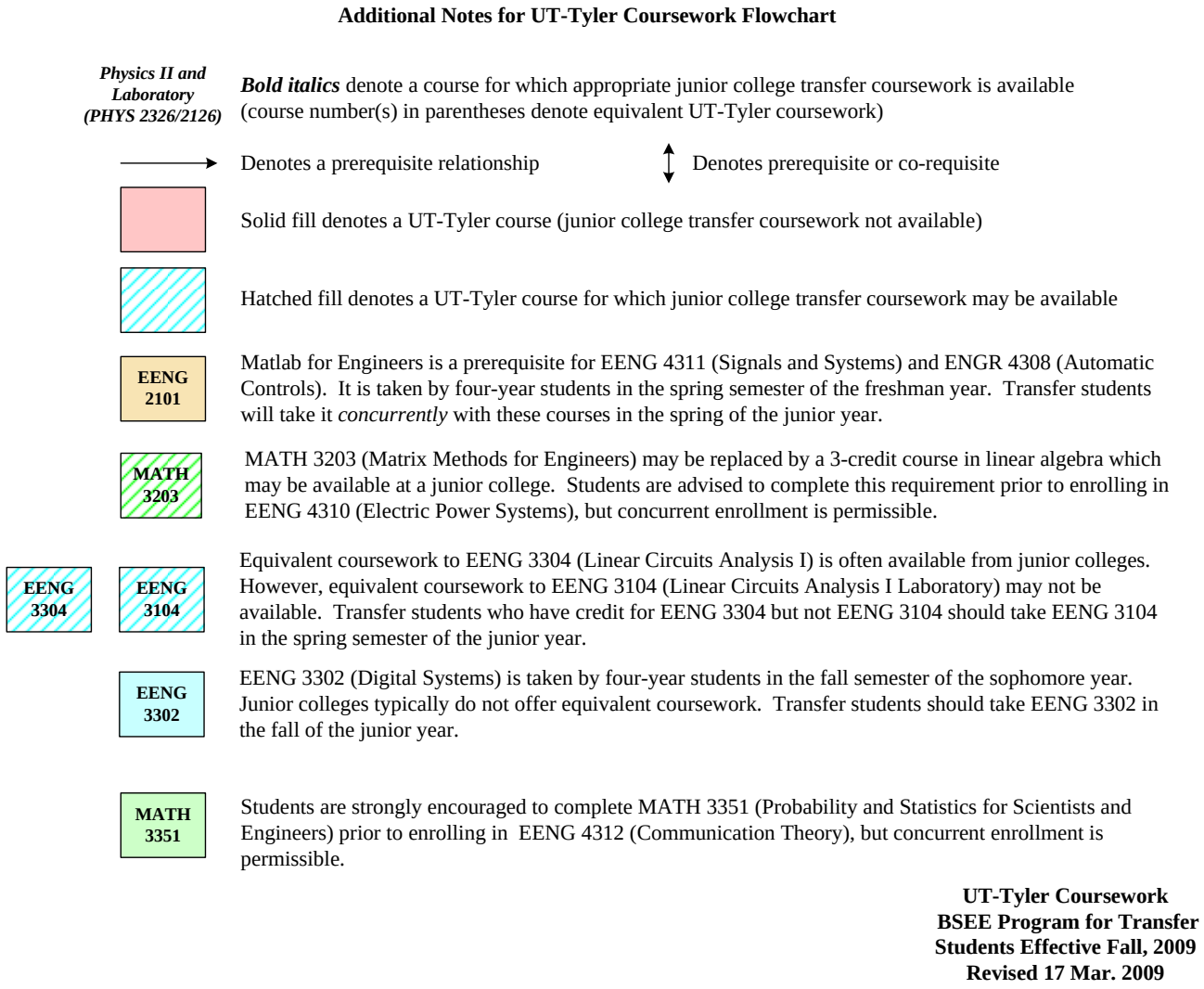

Figure 6. EE program flowchart for transfer students, p.3