The University at Buffalo is committed to ensuring equal access to its programs and activities. The entire notice of non-discrimination can be viewed here: http://affirmativeaction.buffalo.edu/about.htm.
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I. Introduction

This manual is intended for undergraduate students majoring in Electrical Engineering. It serves the purpose of guiding students in their academic planning and study. Information presented in this manual is based on policies and guidelines established by the University at Buffalo, School of Engineering and Applied Sciences, and the Department of Electrical Engineering. Please contact the Director of Undergraduate Studies if further information is needed.

II. University at Buffalo Undergraduate Catalog

The primary document for undergraduate education at the University at Buffalo (UB) is the UB Undergraduate (UG) Catalog. Information on Admission, Baccalaureate Degree Requirements, General Education Requirements, Student Services, Opportunities for UB Students, and Academic Regulations and Procedures can be accessed directly from the home page of the UB UG Catalog. The web address for the homepage of the current UB UG Catalog is: http://undergrad-catalog.buffalo.edu/. For students entering UB in the current academic year, you can proceed by clicking UB Overview, Policies & Procedures, or Academic Programs. For students entering in prior years, click one of the icons at the bottom of the webpage corresponding to the year that you entered UB before proceeding.

As discussed in the school and departmental sections of UB UG Catalog, School of Engineering and Applied Sciences (SEAS) and the Department of Electrical Engineering (EE) also have specific requirements for the Bachelor of Science in Electrical Engineering and for a combined degree, BS/MBA, with the School of Management.

III. Electrical Engineering Program

1. Office

Department of Electrical Engineering
School of Engineering and Applied Sciences
230 Davis Hall
North Campus
Buffalo, NY 14260-2050
(716) 645-3115
Fax: (716) 645-3656
Web: http://www.ee.buffalo.edu/
Stella N. Batalama, Chair
Kevin M. Burke and Michael Langberg, Co-Directors of Undergraduate Studies

2. Overview
The undergraduate degree offered by the Department is the Bachelor of Science in Electrical Engineering (BSEE). The program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. It provides the scope of knowledge and training needed for employment and also forms the basis for further study at the graduate level.

3. Acceptance Information

The most up-to-date information on admission to UB is given in the UB UG Catalog. The web address for the homepage of the latest UB UG Catalog is: http://undergrad-catalog.buffalo.edu/. Click Policies & Procedures.

Information about acceptance into the School of Engineering and Applied Sciences is provided in the SEAS section of the UB UG Catalog. On the UB UG Catalog homepage click on Academic Programs and then Engineering and Applied Sciences, School of. Click Degrees and Policies. Additional information about SEAS transfer admission can be found at: http://www.eng.buffalo.edu/undergrad/admissions/transfer.

4. Advisement

During the first two years of all engineering programs, students are advised by one of the senior SEAS academic advisors in 410 Bonner Hall. The SEAS academic advisors should be consulted on General Education Requirements and on required courses in Chemistry, Engineering and Applied Science (EAS), Mathematics, and Physics. Most of the early undergraduate curriculum emphasizes the physical sciences and mathematics. Starting the second year there are coordinated sequences of EE courses on circuits and electronics, digital principles and embedded systems, signal analysis and probability, electromagnetics and communications, and energy systems. Fourth-year courses are primarily technical electives designed to broaden knowledge, reinforce laboratory skills, and practice design.

5. Transfer Articulation Policy

Transfer students must first apply to the University and meet university transfer admission requirements before consideration for admission to the Department. Electrical Engineering courses completed at other colleges and considered as substitutes for UB courses are evaluated individually by instructors or the EE Undergraduate Curriculum Committee. Determination is made by evaluation of course contents. Most courses taken from accredited college-level programs are acceptable. Evaluations for transfer credits, including, general education, basic science, engineering science, and math courses completed at other universities and colleges, including community colleges, are processed through academic advisors in the School of Engineering and Applied Sciences, 410 Bonner Hall.

To begin the process of transferring courses to UB: On the UB UG Catalog homepage, click on Policies & Procedures. Click Transfer Admission. By clicking Transfer
Course Articulation you can also access the Transfer Articulation and University Requirements at UB System (TAURUS). Follow instructions to determine what transfer credit you can obtain for established transfer articulations.

IV. Electrical Engineering – B.S. Program

1. Courses and Sequence

Required Courses (in alphabetical order)
CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 202 Engineering Impact
EAS 230 Engineering Computations
EE 101 Basic Electronics (or one technical elective)
EE 202 Circuit Analysis
EE 205 Signals and Systems
EE 278 Digital Principles
EE 305 Applied Probability and Statistical Inference
EE 310 Electronic Devices and Circuits I
EE 311 Electronic Devices and Circuits II
EE 324 Applied Electromagnetics
EE 336 Energy Systems
EE 352 Introduction to Electronics Lab
EE 353 Electronic Circuits Lab
EE 379 Embedded Systems and Applications+ 
EE 383 Communication Systems
EE 408 Senior Seminar
EE 478 HDL Based Digital Design with Programmable Logic+
EE 494 Senior Design Implementation (Capstone Design Group Project)
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108 PHY 158 General Physics II/Lab
PHY 207 PHY 257 General Physics III/Lab

+ Students entered before 2013 may take CSE 379 and CSE 380 instead of EE 379 Embedded Systems & Applications and EE 478 HDL Based Digital Design with Programmable Logic.

One lower-division technical elective, such as EE 101
Two upper-division restricted technical electives
Three upper-division un-restricted technical electives
One free elective
Recommended Sequence

First Year:
Fall—CHE 107, EAS 140, MTH 141; ENG 101 or ENG 102, UGC 111, Library Skills
Spring—EAS 202, EE 101, MTH 142, PHY 107; ENG 201 or Humanities, UGC 112

Second Year:
Fall—EE 202, EE 278, MTH 306, PHY 108/158
Spring—EAS 230, EE 205, MTH 241, PHY 207/257

Third Year:
Fall—EE 305, EE 310, EE 324, EE 352; American Pluralism Gen Ed
Spring—EE 311, EE336, EE 353, EE 379, EE 383

Fourth Year:
Fall—EE 408, EE 478, two technical electives, one free elective; Social & Behavioral Sciences Gen Ed
Spring—EE 494, three technical elective; Arts Gen Ed

Technical Electives (minimum 18 credits)
Six technical electives are required. At least five must be upper division technical electives. No more than one may be a lower division technical elective, such as EE 101.

Five upper division technical electives are required. Two of the upper division technical electives are restricted to courses closely related to EE. These can be EE courses, certain CSE courses and MAE courses. Three of the upper division technical electives are unrestricted. They can be Biology, Chemistry, Geology, Mathematics, Physics, School of Engineering and Applied Sciences, i.e., BME, CBE, CSE, CSEE, EAS, EE, ISE, & MAE courses. Any exception requires the prior approval of the Director of Undergraduate Studies.

Free Elective (minimum 3 credit hours)
There is one free elective.

Summary for Students Entering UB After Fall 2011
Required technical courses 88 CH
Technical electives (minimum) 18 CH
Free elective 3 CH
General education 21 CH
Total required major credit hours 130 CH

2. Flow Sheet

The flow sheet is your guide and map to graduation. You need one to track your progress. The EE flow sheet can be found here: http://www.eng.buffalo.edu/undergrad/advisement/flowsheets/. You must carefully
follow the flow sheet for required courses. Most courses are offered in one semester only during each academic year. Do NOT deviate from the sequence. It is very important that you complete the pre-requisites and co-requisites during the semesters outlined on the flow sheet, otherwise, you may delay your graduation date by up to one year.

V. Electrical Engineering/Business Administration – B.S./M.B.A.

1. Acceptance Criteria

Good standing as an electrical engineering undergraduate student and acceptance as a graduate student by the School of Management.

2. Advising Note

The MBA Practicum may be taken during the summer before the start of the fifth year to lighten the load.

3. Courses and Sequence

Required Courses (in alphabetical order)
CHE 107 General Chemistry for Engineers
EAS 140 Engineering Solutions
EAS 202 Engineering Impact
EAS 230 Engineering Computations
EE 101 Basic Electronics or one technical elective
EE 202 Circuit Analysis I
EE 205 Signals and Systems
EE 278 Digital Principles
EE 305 Applied Probability and Statistical Inference
EE 310 Electronic Devices and Circuits I
EE 311 Electronic Devices and Circuits II
EE 324 Applied Electromagnetics
EE 336 Energy Systems
EE 352 Introduction to Electronics Lab
EE 353 Electronic Circuits Lab
EE 379 Embedded Systems and Applications
EE 383 Communication Systems
EE 408 Senior Seminar
EE 494 Senior Design Implementation (Capstone Design Group Project)
EE 478 HDL Based Digital Design with Programmable Logic
MGA 603 Financial Accounting for Managers
MGA 605 Accounting for Management Decision Making
MGB 610 Organizational Behavioral
MGB 611 Team Skills
MGE 604 Business Economics
MGF 611 Financial Analysis for Managers
MGG 601 Corp Soc Resp/Sustainability
MGG 635 Management Communication
MGM 615 Marketing for Managers
MGO 620 Operations Management
MGO 640 Business Strategy
MGO 642 Integration of Business Functions
MGO 644 Business Practice
MGQ 608 Statistical Analysis for Managers
MGQ 609 Analytics for Managers
MGS 605 IT Management
MTH 141 College Calculus I
MTH 142 College Calculus II
MTH 241 College Calculus III
MTH 306 Introduction to Differential Equations
PHY 107 General Physics I
PHY 108/158 General Physics II/III
PHY 207/257 General Physics III/III
Two restricted technical electives
MGT Electives – may include internship

For students entering prior to Fall 2011 please refer to the undergraduate catalog from the year you entered the university.

General Education Requirements can be found in UB UG Catalog. It is located under Policies & Procedures, University Degree Requirements. SEAS provides a summary which can be found at: [http://www.eng.buffalo.edu/undergrad/docs/gened1.pdf](http://www.eng.buffalo.edu/undergrad/docs/gened1.pdf).

**Recommended Sequence**

**First Year:**
Fall—CHE 107, MTH 141, EAS 140; ENG 101 or ENG 102, UGC 111, Library Skills
Spring—EAS 202, EE 101, MTH 142, PHY 107; ENG 201 or Humanities, UGC 112

**Second Year:**
Fall—MTH 306, PHY 108/158, EE 202, EE 278
Spring—EAS 230, EE 205, MTH 241, PHY 207/257; Social & Behavioral Sciences Gen Ed

**Third Year:**
Fall—EE 305, EE 310, EE 352, EE 324; American Pluralism Gen Ed
Spring—EE 311, EE336, EE 353, EE379, EE 383

**Fourth Year:**
Fall—EE 478, First Semester MBA Core
Spring—Restricted technical elective, Second Semester MBA Core, MBA Electives

**Fifth Year:**
Fall—Restricted technical elective, EE408, MBA Electives
Spring—EE494, Fourth Semester MBA Core, MBA Electives; Arts Gen Ed

Electrical Engineering Technical Electives (minimum 6 credits)
A total of two restricted technical electives are required. These upper-division technical electives must be closely related to EE. Contact the Department of Electrical Engineering for elective options.

Contact the School of Management for elective options.
Refer to the School of Management’s MBA handbook for MBA candidate requirements.

Upon completion of undergraduate program requirements and all management requirements, the combined degree will be conferred at the end of the fifth year.

VI. General Education Requirements for School of Engineering and Applied Sciences Majors

General Education Requirements depend upon the date of entry into UB and whether a student starts as a freshman or transfer student. The SEAS Senior Academic Advisors maintain an up-to-date summary of General Education Requirements at:
http://www.eng.buffalo.edu/undergrad/docs/gened1.pdf

VII. Choosing Technical Electives

Technical electives are distributed among a broad range of topics. All technical electives are only offered once each year during specific semesters. Not all technical electives are available in all years. You should choose technical electives according to your interest and course schedule. To assist students in selecting technical electives, the following list of focus areas with possible choices of courses taught by EE faculty members during the 2015-2016 academic year is provided.

The most up to date listing of technical elective offerings can be found on our website (bottom of the page):
http://engineering.buffalo.edu/electrical/academics/curriculum.html

VIII. Registration in Independent Study

It may sometimes be appropriate for seniors to engage in EE 499 Independent Study. This requires planning and approval in advance. Undergraduate students who wish to perform Independent Study should discuss their plan with a faculty, complete the EE 499 Independent Study Request Form and the Written Independent Study Plan, and submit them for review and approval. The Independent Study should include at least 40
hours of professional activity for each credit hour. In order to substitute a technical elective, the Independent Study must carry at least three credit hours or 120 hours of work. Bring the signed form and approved study plan to the EE Department before the registration period ends. The form is available on our website: http://engineering.buffalo.edu/electrical/academics/forms.html

IX. Registration in Graduate Courses for Undergraduate Credits

It may sometimes be appropriate for seniors to use graduate courses as technical electives. This takes some planning in advance. According to the UB UG Catalog, all undergraduate students who wish to take graduate courses for undergraduate credit should discuss with faculty and seek approval in advance. Permission to take graduate courses for undergraduate credit must be obtained by the end of the drop/add period of the respective semester or summer session.

Eligibility Criteria:
- Junior or senior standing and acceptance into an academic major or approved special major;
- A minimum grade point average (GPA) of 3.0 overall, including transfer credit and completion of prerequisites required for the graduate course; and
- Written recommendation from the course instructor that clearly states the academic necessity and rationale for taking the course, and the endorsement of the Director of Undergraduate Studies or Department Chair. Form is available at: http://registrar.buffalo.edu/pdfs/OutsideofCareerPetition.pdf

X. Dean’s List, Academic Honors, and Scholarships

1. Dean's List

Students will be included on the University's Dean's List if, in any single semester, they earn a 3.6 GPA or better. Students must have completed at least 15 credit hours of study during the semester, at least 12 of which are letter graded. Engineering students obtaining a 3.2 GPA or better with at least 12 letter graded credit hours and a minimum of 15 credits for the semester will be recognized on the Engineering Dean's List.

2. Latin Honors

Students earning baccalaureate degrees are eligible to receive Latin Honors based on how their UB cumulative GPA falls within the following scale:

Grade Point Average (based on 4.0 = A)
- 3.20 = cum laude
- 3.50 = magna cum laude
3.75 = summa cum laude

To qualify for Latin Honors, students must present a minimum of 60 credit hours of UB undergraduate coursework, at least 54 of which must be graded credits (i.e., not pass, no pass, satisfactory or unsatisfactory [grades of ‘P,’ ‘NP,’ ‘S’ or ‘U’]).

3. Program Distinction

Each department has the prerogative of awarding certain designation to students who achieve a certain level of academic excellence and creativity in the major or minor program.

The award of Program Distinction is based on the GPA for the program. A minimum of 50% of credits for the major or minor program must be completed at UB. Although departments may set higher GPA minimums, the University requires a minimum of 3.20 for “with distinction”; 3.50 for “with high distinction”; and 3.75 for “with highest distinction.”

4. Scholarships

Various scholarships may be available throughout the academic year. Please pay attention to your "@buffalo.edu" email account for information sent out to students about these scholarship opportunities.

XI. Honorary Societies, Student Clubs & Professional Societies

Eta Kappa Nu – Honorary Electrical and Computer Engineering Society
Eta Kappa Nu was an independent honor society comprised of both undergraduate and graduate students in Electrical and Computer Engineering. Eta Kappa Nu is now part of IEEE. The local Eta Kappa Nu chapter admits the top 1/4 of the junior class and 1/3 of the senior class, as well as all graduate EE students. The UB Zeta Pi chapter of Eta Kappa Nu can be reached at ee-hkn@buffalo.edu. Faculty Advisor: Dr. Dimitris Pados, 645-1150. More information about Eta Kappa Nu can be found at: http://www.ieee.org/education_careers/education/ieee_hkn/ieee-hkn_index.html.

Tau Beta Pi, New York Nu Chapter – Honorary National Engineering Society
Tau Beta Pi elects its membership from juniors and seniors in all engineering departments demonstrating exceptional academic performance and exemplary character: juniors in the top 12.5% of their class and seniors in the top 20%. More information is available at: http://www.eng.buffalo.edu/tbp/.

Golden Key – Honorary Society
Junior and senior students across UB with a 3.25 GPA or better are elected to membership. More information is available at: http://wings.buffalo.edu/sa/goldenkey/.
IEEE (Institute of Electrical and Electronics Engineers) Student Branch
IEEE Student Chapter participates in many events throughout the year including school and community events as well as regional conferences/competitions. More information, including the dates of IEEE events and meetings are posted on the website: www.wings.buffalo.edu/sa/ieee. You may obtain an application to join IEEE at www.ieee.org or by stopping by 406 Furnas during posted office hours. Faculty Advisor: Dr. Jennifer Zirnheld, 645-1033.

Robotics Club
UB Robotics (UBR) is an undergraduate club of the University at Buffalo, dedicated to engineering excellence. The field of robotics is by nature a multidisciplinary field with strong emphasis on electrical, mechanical, and computer engineering. Students involved in UBR are offered a unique opportunity to collaborate collectively on real world problems typically not present in a university setting. The club's continuing project involves developing a team of intelligent and autonomous robots, which are going to compete at the RoboCup World Cup. For more information, visit: http://www.eng.buffalo.edu/ubr/.

Society of Hispanic Professional Engineers (SHPE) Student Chapter
The Society of Hispanic Professional Engineers (SHPE) was founded in Los Angeles, California, in 1974 by a group of engineers employed by the city of Los Angeles. Their objective was to form a national organization of professional engineers to serve as role models in the Hispanic community. More information can be found at: http://www.eng.buffalo.edu/~shpeub/SHPE%20History.html

Society of Women Engineers (SWE) Student Chapter
The Society of Women Engineers stimulate women to achieve full potential in careers as engineers and leaders by expanding the image of the engineering profession as a positive force in improving the quality of life and by demonstrating the value of diversity. We also serve to inform young women and the general public of the qualifications and achievements of women engineers and the opportunities that are open to them. SWE serves as a center of information on women in engineering. We encourage women engineers to attain high levels of education and professional achievement. For more information, visit: http://www.eng.buffalo.edu/swe/.

XII. Internships
Students are encouraged to seek out internship opportunities as a means for obtaining real-world experience in the Electrical Engineering field early on. Internship opportunities are advertised in several ways. If the department is notified of an internship opportunity, an informational email will be sent to all students who qualify. The UB Career Services office also maintains and online service called BullsEye, which provides an updated listing of internship and employment opportunities, as well as,
resume referral services, and information related to on-campus interviews.

XIII. Graduation Requirement Check

Two reviews of academic coursework are completed during the senior year in order to verify that all graduation requirements have been met. The Registrar’s Office will check to be sure that all university requirements have been met. This is limited to ensuring that at least 120 credit hours have been completed, that the General Education requirements have been met, and the Library Skills requirement has been completed. The second check is performed by the SEAS Student Services Office in 410 Bonner Hall. The SEAS staff checks to see that all SEAS and EE requirements are met. The principal guides used for determining if all requirements have been met include HUB Academic Advisement Report, UB Engineering Academic Review, and the flow sheet. When the student enters the program, the flow sheet is started and it is filled in as courses are successfully completed. The SEAS staff members confer with the EE Director of Undergraduate Studies whenever questions arise, for example, with regards to transfer credit articulation.

UB Engineering Academic Review can be found at: http://www.eng.buffalo.edu/undergrad/advisement/academic-review/.

The EE flow sheet can be found at: http://www.eng.buffalo.edu/undergrad/advisement/flowsheets/.

It is advisable to check with the SEAS Senior Academic Advisors regularly, but especially during the next to last semester before graduation to verify that your progress is on track and that no required course has been overlooked. Once your coursework has been approved for graduation, you will need to apply for graduation at: http://registrar.buffalo.edu/degrees/undergrad.php

XIV. Degree Options for Electrical Engineering Students

Degree options can be found in the UB Undergraduate Catalog at: http://undergrad-catalog.buffalo.edu/policies/degree/major.shtml.

1. Double Majors

A double major is the awarding of one degree with two majors, e.g., the student completing a double major of Electrical Engineering and Computer Engineering earns one BS degree. Students must be accepted into each major and fulfill all requirements of each major in addition to satisfying all university requirements. Double majors must be between departments leading to the same degree. For example, a student may not have a double major between engineering (BS) and psychology (BA). Following conferral of the degree, the student's transcript will note one baccalaureate degree with two majors.
Students interested in pursuing a double major should plan early and be prepared to take additional courses beyond the normal load. Please discuss with the Director of Undergraduate Studies, if you have any questions.

2. Minors

A minor is a secondary field of study that is typically composed of six courses. The minor offers students a means to complement the major, explore a subspecialty, and/or broaden career alternatives. Minors are available in many subject areas but may not be taken within the student’s majors. Consult the UB UG Catalog (http://undergrad-catalog.buffalo.edu/academicprograms/minors.shtml) for approved minors. Consult the Academic Programs section of the UB UG Catalog for individual minor requirements. A minor alone is not sufficient for graduation: Students can receive a bachelor’s degree if they are enrolled in a major program and a minor program, but cannot receive a bachelor’s degree if they are enrolled in a minor program and not enrolled in a major program. Some departments require a formal application to the minor program. Students should contact the department for application information and deadlines.

Common minor program choices EE students include: Physics, Mathematics, and Music.

3. Combined Degrees

This degree option results in the awarding of a single combined degree that joins specific programs or disciplines from two degree levels (e.g., B.S./M.B.A., B.S./M.S., and B.S./M.E.). Combined degree programs offer UB students the opportunity to pursue their educational objectives at an accelerated pace by condensing the courses normally taken at the end of the undergraduate degree with those customarily taken at the beginning of a graduate degree. These programs are designed for students who have demonstrated exceptional promise.

In certain circumstances, the combined degree will not qualify the student for licensure if licensure is based upon the complete undergraduate curriculum. Students in professional programs should discuss licensure requirements with their advisors if they are considering the combined degree option.

Combined degrees have a two-tier tuition structure. Over the course of a combined degree program, the student will be charged the tuition that corresponds to the appropriate divisional rate. For example, if a student in the combined B.S./M.B.A. program were required to complete three years of undergraduate coursework and two years of graduate coursework, the student would be classified as an undergraduate and billed at the undergraduate rate for the equivalent of three years. At the conclusion of this period, the student’s division status would change to graduate, and the student would be classified and billed accordingly.
Students choosing to leave the combined degree program and pursue separate undergraduate and graduate degrees will have their billing altered in the following manner. Students who are in the undergraduate portion of the program when they choose to leave the combined degree program will continue with their undergraduate coursework and be billed accordingly; however, these students will not be permitted to take graduate courses until they complete their baccalaureate degree and are admitted formally into a graduate program through the regular admission process. Students pursuing the graduate portion of the combined degree program when they choose to leave the combined degree program will continue to be charged at the graduate level even for those courses taken at the undergraduate level after this point in time.

The minimum residency requirement for a combined degree program is 42 credit hours completed at UB.

Combined degrees for EE students include BSEE/MBA, BSEE/MS or BSEE/M.E. If you are interested in combined degrees, please discuss your questions with the Director of Undergraduate Studies.

XV. Planning for Graduate Studies

Students who have completed the BSEE program with high academic performance are in demand as graduate students. Opportunities exist nationwide for graduate study. There are also attractive options for graduate study at UB. You should begin planning for graduate study no later than the spring semester of your junior year. Information and applications can be found online from respective academic institutions. If you are interested in pursuing a Ph.D., you should pursue and engage in research activities as an undergraduate student, in preparation for this long-term graduate study.

The Department offers graduate studies leading to Master of Science and Ph.D. degrees. Interested students should contact the Director of Graduate Studies. Students may also consider the Master of Engineering option. Master of Engineering (M.E.) is a terminal degree and unlike the Master of Science, the M.E. cannot lead into the Ph.D. program.

The Department also offers a 5-year BS/MS Program. This program allows students to take graduate courses during their senior year. The intent of this program is to let students plan and start their graduate studies early.

**Common Requirements for Graduate Application**

Although they may differ in details, most graduate schools have three general requirements for admission: 1) a completed application form; 2) letters of recommendation; 3) an official transcript and GRE (Graduate Record Exam) scores. Research experiences, especially those resulting in publications, can be very helpful in gaining admission to graduate school.
Application form – Download or submit online. The application website will tell you what information or supplemental documents you need to provide.

Letters of recommendation – It is important that you ask faculty members who know you well to write your recommendation letters. Please note that many schools require faculty to fill in your performance in a percentile among your peers. It is important to be in the top 2%, 5%, 10%, or 25%, in order to give yourself a good chance of admission.

Transcripts and GRE scores – Generally, graduate schools require the GRE scores by January 31 of the year of proposed entrance. This requires that you take the test sufficiently in advance of the deadline date so those test scores are available on time.

You can find more information at: http://www.ets.org/gre/revised_general/register/centers_dates. It is important to note that the GRE must be taken seriously. Without sufficient preparation, you may not excel in the exam and this will affect your admission to graduate school.

**Senior Scholarships Available at UB**
Undergraduate Senior Scholarships are awarded by EE to outstanding seniors nominated by the EE faculty. The purpose of these scholarships is to encourage students to pursue graduate studies. They take effect at the beginning of the senior year, and include a stipend during the senior year. Students selected for this program are expected to complete both their undergraduate program and one or two graduate courses during their senior year, to apply for admission to the graduate program in EE, and to begin working with one or more faculty members in a research area of mutual interest.

**Taking Graduate Courses for Graduate Credit**
Some undergraduates (typically seniors) may begin their graduate studies early while completing their undergraduate degree. For example, some students find that they need to carry less than a full-time schedule in order to meet all undergraduate degree requirements during one or both semesters of their senior year. If the student’s GPA is above 3.0, they can take up to two graduate level courses. If they apply and become a graduate student in the Department of EE at UB, these two courses can be used to meet degree requirements at the Masters level. To register for a graduate course, download and fill out the form at: http://registrar.buffalo.edu/forms/documents/OutsideofCareerPetition111111_004.pdf. The student must obtain written permission from the course instructor. During the registration period, take the exceptional registration form to the departmental office to add the course.

**XVI. Grades, Academic Policies Course Repeat, Probation, Dismissal, Advice For Academic Success**
All students are expected to keep themselves in good academic standing throughout their time at UB, and make adequate progress towards their degree programs. Up to date information regarding the following topics can be found on the University Policies & Procedures website: http://undergrad-catalog.buffalo.edu/policies/grading/index.shtml

- Grades and Minimum Requirement for Maintaining Good Standing
- Course Repeat Policy
- UB Academic Warning, Probation and Dismissal
- SEAS Academic Probation and Dismissal (found here: http://www.eng.buffalo.edu/undergrad/advisement/academic-review/2015)

**Advice to help you become a successful student**

It is important to interact with your peers and classmates. Students can learn a lot from one another. You need to get acquainted with fellow students and establish connections. If you are new and don't know anybody, lectures, labs and recitations give you the chance to meet your classmates and to become more acquainted.

Class attendance – In many courses, no formal record of attendance is kept. Nevertheless, you bear the ultimate responsibility of learning the material covered in every lecture, recitation, and laboratory. It is important to attend class regularly. Should you unavoidably miss a class, inform the instructor in advance. Make up what you miss.

Know and adhere to the official academic calendar. Register early, attend classes from day one, don't take unauthorized holidays, and plan to be on campus until the very end of the final-examination period. UB Calendars can be found at: http://registrar.buffalo.edu/calendars/index.php

Academic problems – If you foresee an academic problem, discuss with the instructor or see your faculty advisor as early as possible. If the issue is dealt with immediately, the instructor or your advisor may be able to help you. If you delay, it may be too late to take appropriate action. In particular, take courses by following the flow sheet and be aware of the last date to add or drop courses. Failing a course should never be considered as an option. The consequence is far more serious than you think. Some courses are pre-requisites for other courses. If you fail one course, it may prevent you from registering in other courses. You may delay graduation up to one year, hence, suffering losses both financially and in time. The main reason for failing any course is non-participation, i.e., not turning in homework assignments, not taking examinations, not submitting reports.

English – If English is not your first language, you will need to comprehend rapidly spoken technical English. To keep up with the quick pace of technological development, the faculty frequently supplements the textbook material by covering recent developments in lecture. Your comprehension of formal written English may be much better than your comprehension of rapidly spoken English. Methods that have been used successfully by other foreign students to improve their comprehension of
spoken English include:

- Listening to and reading the English that is all around you in the media of mass communications, such as, radio, TV, movies, newspapers, and internet. Investigate programs that may be offered by UB's Intensive English Program within the English Language Institute.

- Listening to the same material several times can be helpful. You can find multimedia materials that you can listen to repeatedly on the internet. Other examples of how you can do this: all-news radio stations (locally, WBFO—FM88.7) repeat news again and again during the day. Movies shown on campus are often repeated. Some lectures are recorded and many recitations are repeated.

- A professor's office hours give you an opportunity to ask questions in a less pressured environment than in the lecture.

- Talking to Americans whose native language is English can be a big help.

XVII. Contacts

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