



Electrical & Computer
ENGINEERING

GRADUATE STUDENT HANDBOOK

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This Graduate Student Handbook has been designed to assist graduate students in the Electrical and Computer Engineering Department as they progress towards meeting degree requirements. The Graduate Student Handbook is a supplement to the Colorado State University *Graduate and Professional Bulletin* whose regulations govern all advanced degrees in the University. Students working towards advanced degrees in Electrical and Computer Engineering must meet the Graduate School requirements and, hence, should make themselves familiar with the *Graduate and Professional Bulletin*.

INTRODUCTION

Graduate programs began at Colorado State University in 1891. Graduate programs in Electrical and Computer Engineering leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees were instituted in 1957. The program leading to a Master of Electrical Engineering (M.E.E.) was instituted in 1999 and replaced with the Master of Engineering (M.E.) in 2001. These programs provide broad-based, high-quality education in the rapidly advancing scientific and technological aspects of Electrical and Computer Engineering. The graduate curriculum is structured to provide a wide spectrum of courses leading to a research specialization in an area of interest to the student. Appendix A, listing the Electrical and Computer Engineering faculty and their research interests, should be consulted when seeking an M.S. project, thesis or Ph.D. dissertation research advisor.

ADMISSION REQUIREMENTS FOR GRADUATE CERTIFICATE, M.E, M.S. AND PH.D.

Application Pre-Screen

Before you apply for admission, the ECE department will evaluate your eligibility for admission via the Application Pre-Screen. To start this process, applicants will need the following:

- GRE Scores
 - Verbal
 - Analytical Writing
 - Quantitative
- GPA (on a 4.0 scale)
- TOEFL/IELTS (international students) - Applicants must demonstrate a high level of English proficiency. For students with degrees from institutions where the primary language of instruction is not English, the TOEFL or IELTS is required.
- Resume
- Transcripts
- Statement of Purpose
- Email addresses of 3 references who will be notified to submit letters on your behalf

After the pre-screen data has been verified, students recommended for admission will complete an official application with the CSU Graduate School. The application fee will be required at this time.

Graduate Certificate

Students must have proof of an official undergraduate baccalaureate or equivalent degree to enroll in a Graduate Certificate program. Matriculated/graduate degree seeking students and guest/non-degree seeking graduate students may participate in Graduate Certificate programs. Apply via the CSU application.

Master of Engineering

Admission to the M.E. program requires a B.S. degree from an accredited electrical and/or computer engineering program and a grade point average (GPA) of 3.00 (A = 4.00) or better on the most recently earned degree. In addition, the general test of the Graduate Record Examination (GRE) is required.

Associate degrees and Bachelor of Electrical Engineering Technology (BSEET) degrees do not provide adequate background for admission to the M.E. program in Electrical and Computer Engineering.

Master of Science

Admission to the M.S. program requires a B.S. degree from an accredited electrical and/or computer engineering program and a grade point average (GPA) of 3.00 (A = 4.00) or better on the most recently earned degree. In addition, the general test of the Graduate Record Examination (GRE) is required. Students planning to work toward the M.S. degree should apply for admission as early as possible, preferably two semesters (including summer) before their intended date of entrance to give the faculty an opportunity to review their application materials.

Admission to the M.S. program from the M.E. program requires the student to have at least a 3.00 GPA in M.E. courses taken to date.

Associate degrees and Bachelor of Electrical Engineering Technology (BSEET) degrees do not provide adequate background for admission to the M.S. program in Electrical and Computer Engineering.

Doctor of Philosophy

Students who have received an M.S. degree in Electrical and Computer Engineering or equivalent will be considered for admission to the Ph.D. program. No student will be admitted to the program unless they are academically sponsored by a member of the Electrical and Computer Engineering faculty. Students who have not yet received an M.S. degree may be admitted as a 72-hour Ph.D. candidate upon approval of a member of the Electrical and Computer Engineering faculty willing to serve as the student's academic and research advisor. The general test of the Graduate Record Examination (GRE) is required for application to the Ph.D. program in Electrical and Computer Engineering. Admission requires a grade point average (GPA) of 3.00 (A=4.00) or better on the most recently earned degree.

GRADUATE CERTIFICATE PROGRAM

A Graduate Certificate is a directed academic qualification used to identify the successful completion of a focused area of study deemed important to a student's career goals, and has a stand-alone professional or marketable value. The Graduate Certificate completion will be noted on the academic transcript.

General Program Details and Requirements

- A minimum of 9-15 credits in regular coursework at the 500-level or above.
- A student's GPA must be a minimum of 3.0.
- All graduate courses must be taken at Colorado State University.
- No graduate courses can be counted toward more than one Graduate Certificate.

MASTER OF ENGINEERING PROGRAM

The M.E. degree is designed for those who desire a level of education beyond that typically afforded by a BSEE program but who are not interested in pursuing a traditional research oriented M.S. Degree. The M.E. degree is based entirely on coursework and offers considerable flexibility for designing a program of study consisting of courses in electrical and computer engineering in addition to credits in other areas such as computer science.

General Program Details and Requirements

- A minimum of 30 semester credit hours of regular coursework other than independent study, internship or research.
- No thesis, final report/defense, or oral exam is required.
- There are no required courses; the program of study can be customized to meet the student's needs.
- Up to 15 credits of coursework may be taken outside of the ECE Department. Please discuss with the department academic advisor to secure approval BEFORE registering.
- A maximum of 6 credit hours of 400-level undergraduate courses can be taken at CSU and used towards the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. Remaining credits must be in 500-level or higher courses.
- No independent study will be accepted.
- Internship may be allowed with pre-approval.
- No campus residency is required.
- Teaching Assistant and Research Assistant positions are not available for students in this program.

MASTER OF SCIENCE PROGRAM

Faculty in the Department of Electrical and Computer Engineering seek to make graduate study a personal experience. M.S. graduate students can tailor their study according to their goals, whether through a research-oriented plan of study involving a thesis, completing a project, or through a coursework-only plan. Students doing thesis research work very closely with a faculty member, and, to a certain extent, are "hand-picked" by the faculty to work on specific research projects.

General Program Details and Requirements

- Plan A – Thesis
 - A minimum of 21 credits of regular course work other than independent study, internship or research.
 - A minimum of 9 credits of thesis (ECE699).

- A final oral examination is required.
- A maximum of 6 credit hours of 400-level undergraduate courses can be taken at CSU and used towards the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered.
- A maximum of 12 credits out of the department will be counted to the degree. Please work with the faculty advisor to secure approval BEFORE registering.
- Teaching Assistant and Research Assistant positions are available for students in this program.
- Internship may be approved if it directly supports the research/thesis.
- Plan B – Project
 - A minimum of 27 credits of regular coursework other than independent study, internship or research.
 - Three credits of independent study (ECE695) with the submission of a report.
 - A maximum of 6 credit hours of 400-level undergraduate courses can be taken at CSU and used towards the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered.
 - A final examination is required.
 - A maximum of 12 credits out of the department will be counted to the degree. Please work with the faculty advisor to secure approval BEFORE registering.
 - Students will develop their graduate committee in accordance with ECE Department requirements.
 - Teaching Assistant and Research Assistant positions are available for students in this program.
 - Internship may be approved if it directly supports the project.
- Plan B – Coursework Only
 - Thirty-two credits of regular coursework other than independent study, internship or research.
 - A maximum of 6 credit hours of 400-level undergraduate courses can be taken at CSU and used towards the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered.
 - A maximum of 12 credits out of the department will be counted to the degree. Please work with the department academic advisor to secure approval BEFORE registering.
 - Teaching Assistant and Research Assistant positions are available for students in this program.
 - Internship may be approved if it directly supports course material.

Ph.D. PROGRAM

The Ph.D. in Electrical and Computer Engineering will prepare you to succeed in research in academic, government or industry environments. As a Ph.D. student, your research will be guided by your advisor and contribute to the knowledge base in the engineering community. You will be able to customize your research and courses to meet your educational and professional goals.

General Program Details and Requirements

- M.S. Earned
 - A minimum of 15-18 credits of regular coursework other than independent study, internship or research.
 - A minimum of 24 credits of Dissertation (ECE799).
 - All coursework must be at the 500-level or above. No 400-level coursework is permitted.
 - Teaching Assistant and Research Assistant positions are available for students in this program.
- No M.S. Earned
 - A minimum of 36-39 credits of regular coursework other than independent study, internship or research.
 - A minimum of 33 credits of Thesis and/or Dissertation (ECE699 and/or ECE799).
 - A maximum of 6 credit hours of 400-level undergraduate courses can be taken at CSU and used towards the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered.
 - Teaching Assistant and Research Assistant positions are available for students in this program.

ADVISOR AND GRADUATE COMMITTEE

Students enrolled in a Graduate Certificate will not have a graduate committee. The M.E. graduate

committee will consist of the Chair of the ECE Graduate Committee.

An M.S. graduate committee consists of at least three faculty members, one of whom must be from a department outside of Electrical and Computer Engineering. In order to serve as the primary advisor of a M.S. graduate committee, the faculty member must have a primary or joint faculty appointment within the ECE department. Every M.S. committee must have at least one primary-appointment ECE faculty member. To a large extent, the success of a graduate student's program can be traced to the choice of advisor and advisory committee; hence care should be taken in its formulation. The committee provides guidance in prescribing the student's program of study and ensuring that Graduate School requirements and standards are met, and serves as a source of expertise for the student's research. Plan B coursework only M.S. students will have a committee consisting of the Chair of the Graduate Committee, an ECE faculty member and a designated outside member. The committee is formalized by completion of the GS6 which should be submitted prior to completion of 12 credits or the second semester, whichever comes first.

A Ph.D. graduate committee consists of at least four academic faculty members. In order to serve as the primary advisor of a Ph.D. advisory committee, the faculty member must have a primary or joint faculty appointment within the ECE department. At least two members must have a primary or joint appointment in the ECE Department and at least one must be from an outside of the ECE department. Students are encouraged to include an ECE faculty member from outside his/her major area of specialization. It is recommended that a student's committee have several members with expertise in his/her proposed research field. Industrial participation is encouraged if appropriate, however, only academic faculty may vote at the final examination. The student's graduate committee should be formed during the first semester following admission to, and enrollment in, the program. The committee is formalized by completion of the GS6 which should be submitted prior to completion of 12 credits or the second semester, whichever comes first.

Permanent committee replacements are arranged by filing a GS9A (Petition for Committee Member Changes). Signatures are required for any member(s) dropped from the committee; additionally, advisor/co-advisor changes require the signatures(s) of the individual(s) added and dropped. This form also requires the signatures of the student, advisor(s), Department Head(s), and Graduate School representative.

Whenever a committee member will be absent for an important function of the committee, or when a member will be absent for a semester or more, a replacement will be designated by the advisor of the graduate committee, with concurrence of the faculty member being replaced. The advisor of the graduate committee shall designate any eligible replacement by letter to the Graduate School indicating the time period during which the replacement shall serve. At the expiration of the designated time period, the original member shall resume membership.

PROGRAM OF STUDY (GS6) AND COURSEWORK

The **GS6** (Program of Study) should be filed prior to completion of 12 credits of coursework or the second semester, whichever comes first. The purpose of the program of study is to ensure that the graduate student is working toward well-defined goals approved by his/her graduate committee while meeting departmental and Graduate School standards. The Graduate School reviews each GS6 and determines whether or not the program of study conforms to University policy. Problems are reported to the student and department so that they can be corrected. Any changes are recorded on the GS25 (Application for Graduation). Assistance in completing the GS6 is available on the Graduate School website.

M.E. requires completion of a minimum of 30 credits of regular coursework. A maximum of 6 credit hours of 400-level undergraduate courses can be used toward the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered.

M.S. Plan A requires a thesis and completion of a minimum of 30 credits of which 21 credits must be regular course work other than independent study or research. A minimum of 9 credits of thesis (ECE699) are required for graduation. A maximum of 6 credit hours of 400-level undergraduate courses can be used toward the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered.

M.S. Plan B requires either a minimum of 32 credits of regular coursework (other than independent study, internship or research), or 27 credits of regular courses (other than independent study, internship, or research) and 3 credits of independent study with the submission of a report. A maximum of 6 credit hours of 400-level undergraduate courses can be used toward the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered. The Plan A and Plan B options will involve a final examination as described below (see the "Final Examination" section).

Both Plan A and Plan B students may count up to 12 regular course credits outside of the Electrical and Computer Engineering Department. **It is recommended that students consult their faculty and department academic advisor prior to taking out of department courses.**

Under extremely unusual and extenuating circumstances a student may petition the ECE Graduate Committee to change from the Plan A program of study to Plan B. This change must be approved by the student's advisor and must clearly describe the extenuating circumstances involved, in writing, to the Chair of the ECE Graduate Committee. Extenuating circumstances may include, for example, financial exigencies or the advisor leaving the University. Electrical and Computer Engineering Graduate Committee approval will be **required** prior to the change.

Ph.D. requires a minimum of 42 semester credits beyond the M.S. level. A minimum of 18 of these credits must be in regular graduate course work (other than independent study and research). The courses taken for these credits can be in any technical area which is approved by the student's committee. At least 3 credits must be at the 600 level or above. Courses at the 400 level and below will not be accepted towards the Ph.D. However students who, as a result of their research, have two or more papers accepted for publication in peer-reviewed journals or peer review conference proceedings may petition their Graduate Committee to approve an "Independent Study" (ECE795) course to replace three of the required 18 credits of formal course work.

Students pursuing a 72 credit Ph.D. program will be required to meet the "Program of Study" requirements for both the Ph.D. and M.S. programs of the Department. This includes a minimum of 39 credits of regular graduate course work (other than independent study and research). At least 3 credits must be at the 600 level or above. The remaining 33 credits can be in any technical area which is approved by the student's committee. A maximum of 6 credit hours of 400-level undergraduate courses can be used toward the degree. Up to 8 credit hours at the 400-level are permitted when at least one course is a 4 credit course. No other exceptions will be considered. The Ph.D. graduate student should arrange a formal meeting with his/her committee to review and approve the program of study, which must be reported to the Graduate School on the GS6.

NOTE: There is a ten-year limit for completion of the certificate, master or doctoral degrees. Courses to be applied toward fulfilling the requirements for the certificate, master and doctoral degrees (including transfer credits) must have been registered for and completed within the ten years immediately preceding the date of completion of requirements for the degree.

Changes in the GS6

Changes in the program of study should be made with extreme care since the Graduate School makes no additional comprehensive checks until the time of graduation. **Courses that have been taken and for which a grade has been received (A through F, I, S or U) may not be removed from the Program of Study.** Modifications to the GS6 must be formally approved by the graduate advisor, Department Head and Graduate School.

Changes to the Program of Study are recorded on the GS25 which is filed during the semester of graduation and prior to the published deadline (approximately 6 weeks after the beginning of the semester). For more information about the GS25 see **Application for Graduation** on page 10.

Changing Your Degree

The GS7 (Request for Change of Department and/or Degree Program) is used when changing from one department to another or from one degree to another. Students may or may not complete the degree program from which they are changing. Students will need to submit a new GS6 for the new program he/she is changing to. Once the GS7 has been approved, the student and department will be notified via email. **Changing from Ph.D. to Masters or Masters to Ph.D. will create a new GPA for the new program.** For example, courses taken at the Master's level will not be calculated in the GPA for the Ph.D.

TRANSFER CREDIT

Credit may be transferred with approval of the advisor, graduate committee and the Graduate School. Credits used to fulfill requirements for previously earned degrees are not accepted in transfer. Courses accepted for transfer must be at the equivalent of the 500 level or above. No courses will be accepted for transfer with a grade less than B. Credits earned at institutions not accredited by one of the major regional accrediting agencies are not acceptable for transfer. The Department may petition the Graduate School to have graduate level courses earned from a foreign institution accepted as transfer credit. Grades in courses accepted for transfer will not be included in calculation of the grade point average.

For Graduate Certificates, all courses must be taken at CSU and be specifically identified as fulfilling requirements for the Graduate Certificate. Students who continue on for the M.E. degree will be allowed to transfer up to 12 credits from the Certificate to the M.E.

For the M.E. degree, a maximum of 6 credits of graduate level coursework can be transferred from other accredited colleges or universities. A minimum of 24 credits must be earned at Colorado State University, 21 of which must be earned after admission to the Graduate School.

For the M.S. degree, a minimum of 24 credits must be earned at Colorado State University, 21 of which must be earned after admission to the Graduate School. No more than 6 credits from an institution other than Colorado State may be applied toward the M.S. degree.

M.E. and M.S. students petitioning the student's graduate committee to transfer credits from another institution must attach a description of the courses taken (course content, text, grade) to their GS6 so that an effective evaluation can be made.

For Ph.D. students who do not submit a master's degree in partial fulfillment of their Ph.D. requirements, up to 10 credits may be accepted for transfer if recommended and approved by the student's graduate committee.

For Ph.D. students who do submit a master's degree in partial fulfillment of their Ph.D. requirements, up to 10 credits in courses earned after the date on which the master's degree was awarded may be accepted for transfer if recommended and approved by the student's graduate committee.

Ph.D. students petitioning for acceptance of transfer credit must submit descriptions of the courses taken (content, text, and grade) to the graduate committee with their GS6. Courses accepted for transfer must be at the equivalent of the 500 level or above. Credits earned at institutions not accredited by one of the major regional accrediting agencies are not acceptable for transfer. The Department may petition the Graduate School to have graduate level courses earned from a foreign institution accepted as transfer credit. Grades in courses accepted for transfer will not be included in calculation of the grade point average. No courses will be accepted for transfer with a grade less than B. Transfer students must complete a minimum of six credits of formal coursework at the 600 level or above at CSU.

EXAMINATIONS

M.S. Degree

During the last semester of a graduate student's M.S. program, a final examination will be administered by the student's graduate committee.

- (A) Plan A (Thesis): The examination will be an oral defense of the M.S. thesis. Fundamentals from course work may also be covered. Upon completion of the final examination it is the student's responsibility to submit the GS24 (Report of Final Examination Results) to the Graduate School. This form must be received in the Graduate School within TWO working days after the examination results are known.
- (B) Plan B (Project): Students in the Plan B option will submit a report based on their Independent Study project (ECE695); evaluation of this report constitutes the M.S. final examination. Upon completion of the final examination it is the student's responsibility to collect signatures from all graduate committee members and submit the GS24 (Report of Final Examination Results) to the Graduate School. This form must be received in the Graduate School within TWO working days after the examination results are known.
- (C) Plan B (Coursework Only): No action on the part of the student is required. The Department will handle processing of the GS24 (Report of Final Examination Results). The Final Examination will consist of verification of satisfactory performance in course work.

All examinations are held on the Colorado State University campus and should be scheduled a minimum of **two weeks** before the examination date. The form for scheduling an exam is located on the ECE Department web page. Announcement of all exams is made on the ECE Department web page.

Ph.D. Degree

Ph.D. Qualifying Exam

Before the end of the third semester following admission to the Ph.D. program, students will take an oral Qualifying Examination. The student's advisor, in agreement with his/her committee, will choose one or more "classical" published papers. The student will present an analysis, critique and discussion of the papers, and

may be questioned on the content of the presentation by committee members and others in attendance. The student may also be questioned on coursework. The title and authors of these papers shall be given to the candidate no more than two weeks prior to the scheduled examination. Anyone failing the qualifying exam will have the option of taking a second qualifying examination no more than one semester after the date of the initial exam. Scheduling and announcement to the Department of the Qualifying Examination must be completed in advance via the form on the ECE Department website. The graduate committee must sign the Report of the Qualifying Examination for the Ph.D. Degree. The Department will submit the GS14 (Report of Department Examination) to the Graduate School noting the results of the exam.

Ph.D. Preliminary Examination

Approximately one year (no less than two semesters) before graduation, a Ph.D. candidate in good standing must take an oral Preliminary Examination focusing on his/her proposed dissertation research. The purpose of this examination in the ECE Department is to determine if the Ph.D. candidate has achieved sufficient maturity in the program of study to be given final approval for completion of the research. The form for scheduling an exam is located on the ECE Department web page. Preliminary Examinations must be announced to the Department in advance via the ECE Department website.

To assist the committee in its evaluation, the student will prepare a dossier containing his/her resume and copies of published reports and papers. In consultation with his/her advisor, the candidate will prepare a clear statement of proposed continuing research activity. One copy of these materials must be delivered to each committee member **one week** prior to the examination.

Based on the examination results, the student's committee will recommend one of the following courses of action:

- (A) that he/she be endorsed as a Ph.D. candidate, or
- (B) that he/she submit to another preliminary examination no sooner than 2 months and no later than 12 months after the first exam, or
- (C) that he/she withdraw from the Ph.D. program

Preliminary Examination results will be reported on the GS16 (Report of Preliminary Examination for the Ph.D. Degree). The GS16 must be received in the Graduate School within TWO working days after the examination results are known.

Ph.D. Final Examination

At least **one month** before the final examination the student's advisor will determine the nature and scope of the examination and so inform the student and the graduate committee. In general, the format will be that of an oral defense, although the advisor may require an additional written and/or oral examination of any part of a student's program of study. It is the policy of the ECE Department that attendees at the final examination be allowed to ask questions.

The form for scheduling an exam is located on the ECE Department web page. The final examination must be announced to the Department in advance via the ECE Department website.

Upon completion of the final examination it is the student's responsibility to submit the GS24 (Report of Final Examination Results) to the Graduate School. The GS24 must be received in the Graduate School within TWO working days after the examination results are known.

THESIS AND DISSERTATION SUBMISSION

The student must submit to the Graduate School the GS30 (Thesis/Dissertation Submission Form) and submit the thesis/dissertation electronically by the published deadline date listed on the Graduate School website for the semester in which the student intends to graduate. It is important that the graduate student provide his/her committee with ample time (at least two weeks) to read the student's thesis or dissertation before the final examination. In addition, the Department Head requires that a student meet with him for approximately 30 minutes, during which time he will sign signature pages for a student's thesis or dissertation. All committee signatures must already have been obtained by the time of this meeting. Students should send an electronic copy of their thesis/dissertation to the Department Head prior to the meeting.

For thesis and dissertation submission instructions, visit the CSU Graduate School web page: <http://graduateschool.colostate.edu/current-students/thesis-dissertation/index.aspx>.

SEMINAR ATTENDANCE REQUIREMENT

All M.S. and Ph.D. students must attend ten seminars in ECE or related science and engineering departments during the course of their program. This requirement applies to those students who have begun their graduate enrollment at CSU during or after Fall 2012.

The ECE Seminar Series Coordinator and other ECE faculty and staff will send announcements to ECE students to notify them of qualifying seminars on campus. Electrical and Computer Engineering students are required to create a student account at the ECE Seminar Series Tracking site located at: http://www.engr.colostate.edu/ece/seminar_attendance/seminar_attendance_1.php , and within 48 hours of seminar attendance record their seminar attendance and answer questions related to the seminar presentation.

Students will have until the end of his/her program to meet this requirement. Failure to meet this requirement will prevent graduation. For International Students, failure to complete the seminar requirements will not provide valid reason for a Reduced Course Load request for another term. Please ensure you meet this requirement.

APPLICATION FOR GRADUATION (GS25)

The GS25 (Application for Graduation or Reapplication for Graduation) must be filed with the Graduate School prior to the deadline posted on the Graduate School website. Any changes to the original GS6 (courses added or dropped) are to be made on this form and approved by the student's advisor and the Department Head. Please note that the ECE Department deadline for receipt of the GS25 is 10 days PRIOR to the Graduate School deadline.

Graduate degree candidates must be either enrolled for at least one credit or must register for "CR", *Continuous Registration*, (see below for an explanation of "CR," Continuous Registration) during the term (fall, spring, or summer) in which they complete their degree requirements.

SCHOLASTIC STANDARDS AND SATISFACTORY ACADEMIC PROGRESS

To meet the requirements for graduation and remain in good academic standing, a student must demonstrate acceptable performance in course work after being admitted to the graduate program. This requires a cumulative 3.00 grade point average in all regular course work which is defined as courses other than independent or group study, research courses, open seminars, thesis/dissertation credits, study abroad, U.S. travel, supervised college teaching, student teaching, practicum, internship, field placement, unique title courses offered through the Division of Educational Outreach, and any courses graded pass/fail. Overall a 3.00 grade point average must be maintained in regular and non-regular courses graded traditionally (A through F). Grades of C or higher must be earned in all courses on the GS6 (Program of Study) and the grade point average in courses included on the approved GS6 must equal at least 3.00. In general, graduate students must maintain a 3.00 grade point average for each of the following:

- All regular coursework
- All regular and non-regular courses graded traditionally (A through F)
- All regular coursework listed on the GS6
- All regular and non-regular courses graded traditionally on the GS6 (A through F)

Failure to maintain good academic standing will result in being placed on *academic probation*. New regularly admitted students will not be placed on academic probation until they have completed 12 credits or two semesters of graduate work, whichever comes first. The probationary period extends for one semester beyond the semester in which this status is acquired. During this probationary period, the student must register for traditionally graded courses that affect the grade point average. With permission of the student's graduate committee, the student may register for Continuous Registration for a maximum period of two semesters after which traditionally graded courses must be taken.

Students on probation are subject to dismissal by the ECE Department or the Dean of the Graduate School at the end of the probationary semester unless good academic standing has been regained. This requires adequate improvement in cumulative grade point averages (3.00) and/or satisfactory progress as determined by the student's graduate advisory committee.

To be eligible to hold a graduate assistant appointment, students must maintain good academic standing at CSU, maintain at least a 3.0 grade point average in regular courses and overall coursework, and not be placed on academic probation.

In addition, good academic standing requires *satisfactory progress* in the overall graduate program. Students' graduate committees may render judgments as to whether satisfactory progress is being made toward the degree, taking into account all aspects of academic performance and promise, not necessarily coursework

alone. A positive judgment is required to remain in good academic standing. Students judged to be making unsatisfactory progress toward a degree or whose work is not of the quality expected by the student's advisor and/or graduate committee may be recommended for academic probation or immediate dismissal from the graduate program (see "Scholastic Standards" in the Graduate and Professional Bulletin) and/or termination of assistantship (see "Assistantships" in the Graduate and Professional Bulletin). The Dean of the Graduate School will be informed of students who are making unsatisfactory progress.

A student's graduate committee or the ECE Graduate Committee may recommend immediate dismissal upon a finding that the student is making unsatisfactory progress toward the degree and that satisfactory progress cannot reasonably be anticipated. Such a recommendation must be documented in writing with substantive justification for this action in lieu of probation. It must be referred to the Department Head for approval and the Dean of the Graduate School for final action. The student may appeal such an immediate dismissal through the existing Graduate School appeals procedure.

INDEPENDENT STUDY

Link to apply for all independent study (ECE795, ECE695, ECE587):

http://www.engr.colostate.edu/ece/pdfs/current_students/graduate_independent_study.pdf

ECE795 – Publication Replacement

- At least two peer-reviewed journal or conference publications are required. Peer-reviewed abstracts are not sufficient. Ph.D. research must have been performed while enrolled at Colorado State University.
- If the student has already published: they must provide a list of citations and validating documentation when submitting the Independent Study form.
- If the student has NOT yet published, submit the Independent Study Form with signatures, your faculty will give you a grade of "I"-incomplete and change it to a grade when you supply the publication citations.
- NOTE: ECE795 is ONLY for Ph.D. students substituting publications for regular coursework.

ECE 695 - Independent Study

- With assistance from the project advisor, the student is required to prepare a proposal explaining the scope of the Independent Study and the tasks that will be performed.
- ECE 695 is required for M.S. Plan B (project) students. Upon completion of a graduate project, it is the responsibility of the student to collect original signatures on the GS24 (Final Examination Form) and submit the form to the Graduate School.
- If the student is requesting to participate in Curricular Practical Training (CPT) to provide additional research necessary for completion of the student's Independent Study, all related CPT approval forms from the Office of International Programs must accompany the application for ECE695 – Independent Study.

ECE 587 – Curricular Practical Training (CPT)

- This course number is used by M.S. Plan B coursework only and M.E. graduate students seeking internship credit for CPT.
- Registration for CPT will be approved ONLY when the internship is **directly related** to the student's academic studies and provides a strong educational opportunity to support the learning outcomes of the program.
- ECE587 course must be noted on the GS6 (Program of Study).
- International graduate students must enroll for 1 credit of ECE587 – CPT per semester for the duration of the internship opportunity.
- A maximum of 2 credits of ECE587 can be taken (two academic terms).
- CPT may not be used to meet the standard coursework requirements set by the ECE Department or the Graduate School.

CURRICULAR PRACTICAL TRAINING (CPT) REQUESTS

International students with F-1 or J-1 immigration status who wish to pursue internship opportunities outside of the University are required to receive approval and authorization of CPT through the Office of International Programs. Forms are located at the International Student and Scholar Services website, http://isss.colostate.edu/immigration_forms/. CPT approval is not guaranteed; students are encouraged to seek

assistance as soon as they locate a potential internship. Students wishing to obtain approval for CPT must adhere to all requirements and deadlines set by the Office of International Programs.

International Students pursuing the M.S. coursework track or M.E. will work with the department academic advisor when requesting Curricular Practical Training (CPT). Students must complete the required forms and gain required signatures from an ECE faculty member to register for 1 credit of ECE 495 (effective Spring 2016, ECE 587) per term for the duration of the internship employment for a maximum of 2 credits. Students are required to locate a faculty member who can speak to the technical aspects of the internship opportunity and establish the basis for relevance to curriculum and career goals. Students will work with ECE faculty to outline the requirements of a report due upon completion before a grade can be assigned. **Internship credit is not considered regular coursework and is not applicable to the regular course requirements noted on the student's GS6.**

Students pursuing Thesis, Dissertation or Project requirements for their degree must work with their faculty advisor and the department academic advisor to gain approval for CPT. It is at the discretion of the faculty advisor to approve CPT based on applicability to the research area.

CONTINUOUS REGISTRATION (CR)

All graduate students at Colorado State University are required to be continuously registered in the fall and spring semesters throughout their degree programs. This policy applies from the time of the first enrollment through the graduation term. Registration is also required during the summer term if the student is graduating in the summer term or if University resources are used. Students may fulfill this requirement by registering for any graduate credit-bearing course. As an alternative, students may opt for Continuous Registration (CR) status. Registration for CR status is accomplished in the same way as registration for courses. The course reference numbers (CRN) for Continuous Registration appears in the class schedule under the subject "CR."

CR students are assessed a fee to cover their use of certain University resources. CR students have access to the Library, computer, and research laboratories, or other University facilities as determined appropriate by their advisor or as generally available with payment of part-time student fees.

Subject to the established time limits for the earning of a graduate degree, students who register for CR will not need to apply for readmission should they wish to take additional graduate courses. Such students are ensured a place in their graduate program as long as they remain in good academic standing. Students who do not register for credit or CR will need to reapply for admission for their next semester of enrollment.

Students are limited to a maximum of 10 semesters total of CR. Students actively using CSU resources such as labs for their research must not register for CR. Students in their first, fourth, and eighth semesters of CR are required to submit a CR Student Plan for Degree Completion to their advisors, and then to the Graduate Advisor for the ECE Department. Please read the full policy for CR here:

<http://graduateschool.colostate.edu/policies-and-procedures/continuous-registration-graduate-enrollment-policies/>

REDUCED CREDIT LOAD & FULL TIME EQUIVALENCY REQUESTS

International students with F-1 or J-1 immigration status must carry a full academic course load each semester. For graduate students, 9 credits per semester (fall/spring) is considered full time. There are very few exceptions for students to drop below full time and not all options are available to all students. International students may only count one course of online/distance learning per semester toward their full course of study requirements. In addition, in the last semester, international student cannot be enrolled only in online courses. Eligibility to take online courses varies by student - please check with the Office of International Programs to verify your eligibility to take online courses. In the final semester, students cannot solely take distance education classes. Audited courses do not count toward your full course of study requirement.

A request for a Reduced Credit Load (RCL) must be supported by the student's academic advisor or a licensed medical professional, as well as International Student and Scholar Services. Forms are located at the International Student and Scholar Services website, http://iss.colostate.edu/immigration_forms/

International Students pursuing the coursework-only track should work with the department academic advisor when requesting Reduced Credit Load & Full Time Equivalency. Students pursuing thesis, dissertation or project requirements for their degree will work with their faculty advisor and the department academic advisor to gain approval.

ECE will consider a request for Academic Difficulty RCL for students who are taking at least 6 credits at the 5XX level or above. Students must meet one reason for the Academic Difficulty below:

- Initial difficulty with English language or reading requirements (1st year only)

- Unfamiliarity with U.S. teaching methods (1st year only)
- Improper course level placement

Students may only be authorized for **ONE** Academic Difficulty RCL per degree level. If a student utilizes an Academic Difficulty RCL, they may not use an additional RCL unless:

- The student is in the final semester of required coursework and is taking all available courses to meet graduation requirements as outlined on the GS6 and has less than 9 credits remaining to meet the degree requirements (can be authorized for only one semester)
- The student has completed required coursework and is working on thesis, dissertation or project and the student is registered for CR (can be authorized for more than one semester)
- Medical reason supported by a medical physician or licensed clinical psychologist with supporting medical documentation

GRADUATE STUDENT RESPONSIBILITIES

Graduate students are responsible for knowing any special expectations and requirements of their department and program and are expected to remain in good academic standing by making satisfactory degree progress and must at all times have an advisor.

With regard to meeting Graduate School deadlines, ultimate responsibility for a graduate student's program lies with the student. The student's advisor, graduate committee, the Graduate School office, the ECE department office, and the ECE Graduate Committee are all available to help and advise. Several deadlines are critical, and each semester the Graduate School publishes a list of deadlines which must be met in order to graduate during that term.

GRADUATE STUDENT APPEALS PROCESS

Graduate students may appeal decisions concerning unsatisfactory performance on graduate preliminary or final examinations, academic probation for reasons of unsatisfactory progress toward the degree other than insufficient grade point average, termination of an assistantship for reasons of unsatisfactory performance, or dismissal from the graduate program.

The Dean of the Graduate School, together with the Director of Conflict Resolution and Conduct Services, shall examine the appeal and determine whether the actions are disciplinary or academic.

If deemed to be disciplinary, the Dean of the Graduate School shall refer the complainant to the University Discipline Process.

If deemed to be an academic matter other than a grading decision, the Dean of the Graduate School shall implement the procedures as outlined below:

- A review panel, composed of two faculty members and a graduate student, will be appointed;
- The Review Panel will consider the case in detail;
- The Panel will make appropriate recommendations to the Dean of the Graduate School;
- The Dean of the Graduate School and the dean of the college involved shall jointly review the case;
- Following consultation with the Provost/Academic Vice President, the Dean of the Graduate School shall make the final decision.

GRADUATE STUDENT REPRESENTATION

The Graduate Student Council represents and advocates for Colorado State University graduate and professional students. The goal of the council is to improve the experience of graduate education at CSU. For details about the GSC and to get involved, visit: <https://sites.google.com/a/rams.colostate.edu/gsc/home>.

APPENDIX A

Electrical and Computer Engineering Faculty and Areas of Research

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