

University of Central Florida

Department of Electrical and Computer Engineering

**GRADUATE STUDENT HANDBOOK
Electrical and Computer**

June 2019

INTRODUCTION

The heart and soul of any academic program resides in its students and in their accomplishments. Promoting student success is a primary goal of the Electrical Engineering (EE) and Computer Engineering (CPE) Programs in the department of Electrical and Computer Engineering. This Graduate Handbook serves as a guide for Master's and Doctoral students (as well as faculty and staff) of the ECE program. In this handbook, we explain many of the details of the graduate student policies and procedures at UCF, as well as specific rules observed by ECE. The objective of the Graduate Handbook is to provide effective direction and guidance to graduate students that will lead to each individual's success at UCF. Although the Graduate Catalog serves as a source for general policies, it does not explain in great detail the policies and procedures of specific programs; that is the role of this document in the context of ECE.

The Electrical and Computer Engineering Department at the University of Central Florida covers a wide variety of areas related to electronics, power electronics, microelectronics, electromagnetics, communications, controls, digital signal processing and optics. It is one of the few programs that has a lot of connections with a number of other disciplines on campus such as optics within the College of Optics and its strong connections with the area of microelectronics, Computer Engineering because of the many course overlaps in their undergraduate programs and Computer Science because of the interdisciplinary nature of many of the graduate Electrical Engineering areas (e.g., there is a strong connectivity between digital signal processing and image processing that are typical Electrical Engineering areas and computer vision which is a typical Computer Science area).

More specifically, faculty in the Electrical Engineering program are involved in research related to power electronics, dc-to-dc power supplies, dynamic and control of power converters, power factor correction, controls, system theory, robotics and automation, power systems, robust stabilization and control of certain unstable plants, semiconductor device modeling, device simulation and characterization, computer aided integrated circuit design, surface acoustic wave technology, surface acoustic wave device modeling, surface acoustic wave device computer aided design, semiconductor device technology, solid state device fabrication, analog/digital circuit analysis and design, microelectronics, optoelectronic materials, thin films, micromachining, digital signal processing, adaptive signal processing, multidimensional signal compression, filtering, transversal filter design theory, image processing, audio processing, voice recognition systems, adaptive median filtering, neural networks, pattern recognition, modeling and simulation, applications of neural networks in communications, electromagnetics, antennas and antenna arrays, microwave components, wireless sensors, remote sensing, satellite communications error control, coding, information theory, fast simulation, signal processing, RF communications, systems engineering, and optical propagation through random media, amongst others.

The Computer Engineering program at the University of Central Florida covers a wide variety of areas related to computer systems and VLSI design, software engineering and algorithms, intelligent systems and Machine Learning, computer networks and computer security, as well as simulation systems. More specifically, the Computer Engineering program in ECE supports a number of technical research areas in which a PhD student is expected to do research. These technical areas are: Computer Networks and Computer Security (CNCS), Computer Systems and VLSI Design (CS/VLSI), Intelligent Systems and Machine Learning (ISML), and Software Systems and Algorithms (SSA). Other related areas include such as Networking and Wireless

Systems, Network Economics, Architecture and Management, Big Data Networking, Device-to-Device Networking, Peer-to-Peer Computing, Distributed Systems, Autonomous and unmanned Autonomous Systems, Big Data and High Performance Computing, and Spectrum Sharing.

The primary objective of this Handbook is to help students understand the process of completing an EE/CpE graduate program at UCF, provide information on resources that will help them develop academically and professionally, and define all expectations required to complete the degree programs by making the implicit explicit. The handbook serves as a reference tool to guide graduate students through their graduate programs and help students stay on track for degree completion. It should also help faculty and staff to better guide these students.

The Graduate Catalog is the university's official record of graduate policies and this Graduate Handbook must be consistent with university policy. In any case where the two documents appear to disagree, the Graduate Catalog is the final authority. In this handbook we sometimes will directly reference the Graduate Catalog on policies that are comprehensive and intricate in detail, providing only a short description of the policy, and then giving the direct website link to the section of that particular policy.

If anyone has any questions about the content of this handbook, please do not hesitate to contact the ECE Graduate Coordinator, Dr. Kalpathy Sundaram, at 407-823-5326 or via e-mail at kalpathy.sundaram@ucf.edu

MISSION STATEMENT

The mission of the M.S. degree program is to provide students with an in-depth education geared toward meeting the needs of business and industry in Florida and throughout the U.S. Our goal is to produce graduates with a good, solid understanding of Electrical Engineering with a strong emphasis on at least one of the major areas of focus in the Electrical Engineering program, such as electronics, power electronics, microelectronics, controls, communications, digital signal processing, electromagnetics, and optics. In the Computer Engineering area, our goal is to produce graduates with a high level of competency in understanding, applying, and enunciating the modern concepts, principles, methods, and theories necessary for the design and implementation of computing systems. Such graduates will be prepared to continue studies towards a PhD or directly enter industry or government positions.

The mission of the PhD program is to produce professionals trained at the highest possible academic level in the theory and practice of Electrical Engineering/Computer Engineering to meet current and projected market demand for Electrical Engineering/Computer Engineering experts. Our PhD students graduate with proven abilities in research and instruction, suitable to make immediate contributions in academia, industry and government, conducting original research in the area of Electrical Engineering/Computer Engineering and its allied disciplines, and educating others in the discipline.

GRADUATE STUDIES AT UCF

College of Graduate Studies

Graduate programs and their students at UCF are supported at the university-level by the [College of Graduate Studies](#) which operates under the leadership of the Dean of Graduate Studies. It works collegially with the Faculty Senate, various committees of the Senate, the deans of the other colleges, and other campus entities that serve graduate students. In essence, the College of

Graduate Studies works as a convening authority within the university, providing leadership among campus stakeholders to establish a vision and take action on major issues affecting graduate education at UCF.

Global UCF

Global UCF helps international students, assisting with admission to the university, obtaining immigration documents, and adapting to a new academic environment and culture. It is necessary that all international students keep Global UCF informed of any potential changes in status. This office provides the guidance needed to understand and abide by regulations for international students.

College of Engineering and Computer Science

The [College of Engineering and Computer Science](#) has an Associate Dean for Graduate Studies with a staff dedicated to helping students at every stage from admission through graduation. Keep in mind your primary contacts as a ECE graduate student lie within the faculty and staff of the department. The day-to-day operations are overseen by the Graduate Program Coordinator and a Graduate Admissions Specialist. The longer term goals and procedures are established by the Graduate Program Committee, with approval from the faculty as a whole. However, from an individual graduate student's perspective, the most important person in his or her academic life is the faculty advisor, a person who will guide students by helping in the selection of courses and, in the cases of a PhD student or thesis option MS student, in the choice of a research topic.

GRADUATE PROGRAM COMMITTEE AND COORDINATORS

The Graduate Program Committee in the [Department of Electrical and Computer Engineering](#) (ECE) is composed of administrative and research faculty within ECE and makes all recommendations to the ECE faculty body concerning changes in the academic program and the procedures associated with qualifying reviews, candidacy, etc. It is chaired by the ECE graduate coordinator.

The ECE Graduate Program Coordinator checks and approves all programs of study (POS) of MS and PhD students before they are advanced to the College and Graduate Studies for final approval. The graduate coordinator is also the primary academic advisor for all non-thesis option Master's students. With guidance from the Graduate Program Committee and many individual faculty members, the coordinator makes decisions concerning graduate teaching, assistantship offers, and recommendations for university fellowships.

Together with his or her faculty advisor the graduate student plans courses and research topics. Furthermore, the faculty advisor is typically the one who commits funding to support a student on a research grant. However, many others within the department and the college play an important role in a graduate student's experience while at UCF.

ADVISING/MENTORING

Advising and mentoring are two very important elements in a graduate student's career. Upon acceptance into the ECE program, the graduate coordinator acts as an academic advisor for non-thesis graduate students. This person advises the student on course selections during the early

stages of the student's graduate career. For thesis-option MS students and PhD students, the graduate coordinator needs to be subsequently replaced by a research advisor who serves as course advisor and research mentor. The research advisor may or may not be the person initially assigned as academic advisor, depending primarily on the research path the student chooses.

In many cases, students entering the PhD program will already have been contacted by and reached an accord with a faculty member willing to advise and support them during their studies. Otherwise, PhD students need to seek out a research advisor in their chosen area by the end of the first or second semester.

The student/research advisor relationship is not irrevocable for either the student or the faculty member. The most common reason for change is incompatibility of research agendas between the advisor and the student. For this reason, students should not only talk to potential advisors, but also to students already in the advisor's research group to learn first-hand the dynamics of the group and the expectations of students in the group. While changes are natural and acceptable, we highly discourage students from jumping from one advisor to another, especially when there is financial support involved. Moreover, when a student starts a research project with an advisor, that student has a professional obligation to complete the agreed-upon research tasks to the best of his or her capabilities, leaving everything in a state that makes it easy for another student to continue the work. Additionally, the student has a moral obligation to not use the unpublished research results of one advisor's group when moving to another group, unless that is agreed upon by the first advisor. Of course, this does not preclude use of published results or of general knowledge gained in the research area and its accepted practices, results and tools.

It is highly recommended that admitted PhD students contact potential advisors in advance of their arrival at UCF to explore mutual research interests. Regardless, new students should meet with the graduate coordinator upon their arrival at UCF. The graduate coordinator will provide initial guidance on overall academic requirements, program and university policies and procedures, while the research advisor serves more as a mentor providing direction on research, advice on programs of study, and guidance on other areas of academic life.

Roles and Responsibilities:

- Faculty Advisor
 - The advisor helps the student select which courses to take.
 - The advisor (in consultation with the student) develops the student's program of study
 - The advisor directs the student's research
 - For MS thesis-option and PhD students, the advisor reviews and approves the student's thesis or dissertation
 - The advisor can provide financial support for the student (based upon a research grant)
- Student
 - The student takes coursework as required, maintaining a minimum 3.0 GPA
 - The student maintains a full course load when they are either an international student or the student is under contract and works diligently to complete all requirements in a timely manner
 - The student (in consultation with the faculty advisor) develops a program of study prior to completing the first 12 hours of coursework by the middle of their second semester.

- The student identifies (in consultation with the faculty advisor) a suitable research topic.
- The student works in the lab or field or other venue as needed to complete his or her research
- The student is responsible for knowing and meeting all university deadlines, rules, and regulations – see the section titled [Student Responsibilities](#) in the Graduate Catalog
- In those cases when a student wants to change faculty advisors, the student should discuss the situation with his or her current faculty advisor first, and then request the change through the graduate coordinator. The change must be approved by the current faculty advisor, the new faculty advisor, and the graduate coordinator. When approved, a new program of study must be completed and signed by the new advisor.

Another kind of mentoring is by one's peers, particularly by the associations established through student professional clubs and societies. The largest professional society in the field of Electrical and Computer Engineering is the Institute of Electrical and Electronics Engineers (IEEE). IEEE has a local UCF Student's chapter where graduate students can get involved in professional activities and networking. Female students in our school have formed [Women in EECS/WIE](#) and host many activities important to women in a scientific and technical area including an active mentoring program. Membership is free.

DEGREE REQUIREMENTS

This section describes the process for degree completion. Students must follow a prescribed, yet flexible path, achieving milestones along the way. Although there is no guarantee that each student will be able to complete all the requirements, if a student is hard working and diligent, and is a full-time graduate student, he or she should be able to complete a Master's program within 1 to 2 years and a PhD program within 4–5 years (typically 2 to 3 years beyond the MS). For non-thesis Master's students who are working full-time and going to school part-time, it may take 4 to 6 years to earn the degree. It is important to note that courses taken that are not part of an earned degree are subject to the 7 year rule and will expire after 7 years. A student could initiate a petition if they see that a course may be expiring and that course is needed to graduate. Petitions should also not be done in your graduating semester.

A summary follows. Please visit the [EEMS Program](#) and the [EE PhD Program](#) for a more detailed description of degree requirements. You can also visit the [CpEMS Program](#) and the [CpEPHD Program](#) for more detailed description for Computer Engineering Programs. A current list of EE courses can be found at [Graduate EE Courses](#). A current list of CpE courses can be found at [Graduate CpE Courses](#). Typically, students can begin registering for Summer, Fall, and Spring of the following year in mid to late March. See [UCF Registration Practices](#) to get an idea of how to do this. Changes to a preselected schedule can be made up until a few days after classes in a particular term begin (the "add/drop" period). One exception is the registration for a one-on-one course – Independent Study, Doctoral Research, Thesis, and Dissertation. These require the submission of a form entitled, “Special Registration Access” form which you can google online, access on the CECS website under Graduate Forms or pick up in the Academic Affairs Office (ENGR 1-107) indicating an agreement between the student and a faculty member, at least one week prior to the start of classes. Registration for any independent study must be approved by the Associate Dean of the College before the student is formally registered for this course. Doctoral Research, Dissertation and thesis hours require the same form which is signed by the students and their advisor before registering in person in the Academic Affairs Office, ENGR

In all programs, students must maintain a 3.0 GPA or better in all coursework taken from admission into the program. No course can be listed on the POS with a grade below a C (2.0) and at most two C grades are allowed provided that the student's GPA does not fall below a B (3.0) in order to be able to graduate. This requirement is not able to be petitioned.

Masters students can choose one of two options – the thesis or non-thesis option. Both are 30 credit hour programs. The non-thesis option requires slightly more coursework and of course, does not require that a thesis be written. One might think of a thesis as being a "mini" PhD dissertation. MS non-thesis option students must, in their last term, submit to the ECE Graduate Coordinator, a Portfolio detailing three major activities in which they have participated as a result of their tenure in the program. This should include a table of contents, resume, and details of 3 term papers or projects that they have completed as part of their coursework. Summary pages of how each of these projects or papers contributed to their degree specialization within their program must also be included along with listing the UCF course in which each paper or project was completed. The Portfolio is due approximately 4-5 weeks after your final semester begins and is submitted to the Graduate Admissions Specialist. Once you apply to graduate for that term, a due date for the Portfolio will be assigned.

MS Degree

- a) This program requires 30 semester hours of credit at the 5-6000 level. At least half of these must be at the 6000 level, and under no circumstances can they contain Doctoral Research, Directed Research or undergraduate credits.
- b) Most of the courses should be taken from one of the technical areas of concentration, listed in the Graduate Catalog. The EE areas of concentration are: Signal Processing and Systems, Micro and Nano Systems, Electromagnetics and Optics. CpE areas are: Computer systems and VLSI design, software engineering and algorithms, intelligent systems and Machine Learning, computer networks and computer security, as well as simulation systems
- c) Thesis option –This masters option requires 24 credit hours of coursework, 6 hours of Thesis (XXX 6971) with no option for any Independent Study credits.
- d) Non Thesis option –This masters option requires 30 credit hours of formal coursework which can include at most 6 hours of Independent Study credit, as well as a Portfolio submission.

Although there are no required courses in the EE/CpE areas of concentration, an MS student must have his Program of Study Approved by the Graduate Coordinator, before the completion of 12 credit hours into the program. If an approved Program of Study is not on file by your 12th credit hour, then you will be put on registration hold by the College of Graduate Studies and you will not be able to register for future courses.

PhD Degree

- a) At least 72 semester hours of credits are required at the 5000–7000 level, beyond the BS degree. At least one half of these must be 6000–7000 level and none can be undergraduate

credit.

- b) A total of at least 36 credit hours of formal coursework which excludes Independent Study, Doctoral Research and Dissertation credits.
- c) 15 credit hours of Dissertation are required and no more than 24 credit hours of Dissertation (XXX 7980) are allowed.

Although there are no required courses in the EE PhD program, a PhD student must have his Program of Study approved by the Graduate Coordinator, before the completion of 12 credit hours into the program to avoid the risk of being placed on registration hold.

A typical PhD degree program - once all 72 hours are completed and providing that the above requirements are met the student can defend their Dissertation defense, and graduate upon the dissertation committee's approval.

PLAN OF STUDY (POS)

The Plan of Study (POS), sometimes referred to as the [Program of Study](#), is an agreement between the student and the program listing requirements for completing the degree. All ECE graduate students must have an approved Plan of Study (POS) developed by the student and his/her advisor that lists the specific courses to be taken as part of the degree. The student must maintain a minimum GPA of 3.0 in his or her POS, as well as in all coursework taken since entering the program.

No coursework can appear on a POS that is more than 7 years old at the time of graduation unless a petition has been filed and approved by the College of Graduate Studies. No petition will be allowed to be submitted for approval in your graduating semester.

The POS must be filed prior to the completion of 12 credit hours after admission to the program. The College of Graduate Studies automatically places a "hold" on future registration for non-compliance. The POS can, and usually will, be revised later to reflect changes in the courses actually taken, but it is crucial that an initial POS be on file, signed by the student and the faculty advisor, and approved by the Graduate Program Coordinator and the College of Graduate Studies. Any variation from the current POS must be approved by your research advisor and the Graduate Program Coordinator and then immediately reflected in an updated POS.

The POS for students is flexible and unique to each student. However, it must meet university, college, and department rules for minimum number of hours, etc. (see Program Requirements, above). The doctoral candidate's updated POS must be completed, submitted, and approved before the student will be allowed to pass Candidacy and register for dissertation hours (XXX 7980).

Transfer of credit

MS students, with the approval of their advisor and the graduate coordinator, can transfer up to 9 credit hours, of B grade (3.0) or better, in graduate coursework (no Independent Study or Thesis credit) from another program at UCF or from a regionally accredited institution. This must appear on the initial POS submitted by the student within their first 12 credit hours in the ECE graduate program. If you have earned graduate credit in a UCF undergraduate degree, you can transfer up to 9 credit hours provided all grades are a “B” or better grade. If you have been accepted to the Accelerated BS to MS program, you are allowed to transfer up to 12 credits with a “B” or better grade. These credits are however subject to the 7year rule even though they are earned in an undergraduate degree. This transfer work would require the graduate coordinator’s approval on a Program of Study.

PhD students may also transfer up to 9 credit hours of external or internal transfer work which is not part of an earned degree with the same restrictions as their MS counterparts. If the student has earned an MS degree in a related area, they may upon the approval of the advisor and graduate coordinator transfer up to 30 credit hours of non- thesis masters credits into the POS. This must be approved prior to entering candidacy status via an approved Program of Study. In addition, students could transfer an additional 6 hours of coursework for a maximum of 36 hours of transfer work. All transfer work must be approved by the Graduate Coordinator of the department with a Transfer Request form. This form can be obtained from the Graduate Admissions Specialist.

In no case can courses with a grade below a B (3.0) be transferred, nor can undergraduate credit be used on a Program of Study. Students need to keep in mind that transfer work does not contribute towards their GPA in a graduate program so at least a minimum of one course depending on the amount of transfer work must be taken at UCF in order for the student to have a GPA and the ability to graduate with a minimum of a 3.0 GPA.

PhD MILESTONES

After a student has been admitted into the PhD program and has a research advisor, there are several points in their academic career that require special attention. We cover these in more detail in the following.

QUALFYING REVIEW

To better ensure that PhD students have acquired the requisite background and are prepared to make a successful transition into the research phase of their academic career, the department requires students to complete an Annual Review containing evidence of their academic performance, their research progress to-date, and an evaluation of this and related intangible evidence as provided by the student’s research advisor. The student’s part of the Annual Review should contain a complete record of their coursework in the Graduate Plan of Study (GPS report), list of publications and submissions of conference and journal papers, and any related information the student believes bolsters their case of being ready to embark upon a research career. An initial evaluation must occur prior to entering the students 19th credit hour of graduate work in the program. In most cases a second review will take place prior to beginning the 37th credit hour. In rare cases there will be some students who enter the program "better prepared" than others, a single review may be sufficient. At the other extreme, again hopefully rare, students can be

removed from the program for poor academic performance and/or inadequate performance in their assigned GTA/GRA responsibilities. Review files must also contain an evaluation and recommendation by the research advisor on the advisor form of the Annual Review.

The Annual Review will be conducted every spring term and is mandatory for all PhD students every year up until the time they graduate. The main reason a student is asked to resubmit a second time is that the research component has not sufficiently emerged in the advisor's opinion. That is something that normally takes more than an additional term to establish.

The criterion for the Annual Review as it relates to the Qualifier is as follows: If a student has taken at least 18 hours of coursework and is doing well both academically and is progressing in his/her research, then his advisor can decide if he/she is ready to pass the Qualifier and will note this progress on the advisor form by checking the box labeled "PhD Status". There is also a box on the advisor form for a second review should a second review be required which is typically the following spring. Once the Qualifier has been passed, it is still mandatory for the student to complete the Annual Review each spring term until they graduate. Students who have not successfully navigated their way through the review by the 37th credit hour will be removed from the program. As with many decisions of this type, there is a degree of subjectivity in judging whether there is a sufficiently high probability that the student can, in fact, finish the PhD degree. To err is costly, to both the student and the program. We believe, in addition to a good academic record, one of the strongest indicators of success is the relationship forged between the student and advisor that has arisen from the advisor watching the student "in action" in a research environment and which has resulted in the advisor's belief that the student has the drive and ability to make a significant contribution to the discipline.

Technically, students admitted to the PhD program are initially given "Pre-Doctoral" Status. After successfully completing the qualifying review, they are officially placed in "Doctoral" status.

CANDIDACY

A student must demonstrate his or her readiness for the PhD program in Electrical/Computer Engineering by authoring an accepted journal article or high quality conference paper. The student must be a first author on this paper and the research advisor must also be an author on this paper to be used for Candidacy. This should occur by the time the student is nearing the end of their coursework (57 credit hours). The appropriateness of the work and venue will be judged by the student's dissertation advisory committee and, if deemed satisfactory, will result in a recommendation that the student be given Candidacy status. Admission to candidacy requires the approval of the program director and the Associate Dean and is forwarded to the UCF College of Graduate Studies for status change. Only after a successful admission to candidacy may a student register for doctoral dissertation hours (XXX 7980).

The ECE department requires 5 members for a doctoral committee. Three of the five members must be full ECE Graduate Faculty. One member must be completely outside of the ECE department which means that they cannot have a secondary joint appointment with ECE and the final 5th member can either be inside or outside the department or they also could have a secondary joint appointment with the ECE department. Approved Graduate Faculty Scholars can also serve as members of committees in addition to the mandatory 3 full ECE Graduate Faculty.

By general University guidelines, a student and his or her dissertation advisory committee must

formally convene for the committee to appraise the student's progress at least once per calendar year.

All transfer of credits, grade changes, and incomplete grades must be resolved prior to entering candidacy status

Upon entering candidacy status, students must be registered for XXX 7980 continuously (including summer) as full-time students until graduation. Students in candidacy status are considered "full-time" when enrolled in 3 credits of XXX 7980, Dissertation.

Another requirement for passing Candidacy is the completion of the CITI modules which should appear on the student's checklist on MyUCF. Some of the modules can be completed online and others are face to face sessions and must be registered for in advance. The student must also have an updated Program of Study with the first 2 sections showing "satisfied". At a minimum, the student can pass Candidacy with 51 hours completed, provided they have a published paper, all modules of CITI training completed and are a registered student in the semester they are passing Candidacy. These 6 hours must be completed in conjunction with their dissertation hours in order to achieve the 72 credits needed to complete the program.

DISSERTATION PROPOSAL

All PhD students must write a dissertation. Please visit [UCF Thesis and Dissertation](#). This must be preceded by an oral presentation of a written dissertation proposal, which, in turn, cannot occur until a term after admission into candidacy status. The purpose of the written proposal, given to members of the research committee at least two weeks prior to the presentation, is to show the student has sufficiently explored the literature of a significant research problem in electrical and computer engineering to be able to embark upon solving that problem. The written proposal should also detail a proposed methodology and plan for undertaking the research work and its completion. Rules governing the proposal, scheduling and committee attendance can be found in the [UCF Graduate Catalog](#).

The oral presentation should last approximately 45 minutes to an hour and it should show the student is aware of the background, has a good idea of the problem being addressed, and has a reasonable plan for carrying out the research. The committee's role is to assess the significance of the proposed problem, the feasibility of the proposed solution, and to offer advice.

The proposal is not to be interpreted as "cast in stone." It is a proposal. The research may change direction as new information is uncovered. That is perfectly acceptable and expected. Of course, if the direction of the research becomes too "off target" a new proposal should be considered. This is at the discretion of your advisor, committee, and the graduate coordinator. In order to document completion of the proposal, the student will have his committee members complete a "Thesis/Prop/Defense form which the student can request from the Graduate Admissions Specialist prior to the proposal. The proposal should be done a semester or two before the defense. This is a mandatory milestone; students will not be allowed to defend and graduate without completing the dissertation proposal. The Thesis/Prop Defense form should be submitted to the graduate office following the proposal.

Furthermore, the defense is usually not scheduled in the same term as the proposal. Please see [UCF Thesis and Dissertation](#).

DISSERTATION and DEFENSE

The dissertation consists of an original and substantial research study designed, conducted, and reported by the student with the guidance of the Dissertation Committee. The written dissertation must include a common theme with an introduction and literature review, details of the study, and results and conclusions prepared in accordance with program and university requirements. The dissertation is expected to represent a significant contribution to the discipline. Since this work is original, it is very important that care is taken in properly citing ideas and quotations of others. Failure to do so is academic dishonesty and subject to termination from the program without receiving the degree. An oral defense of the dissertation is required.

If a committee member is not able to attend the defense, a maximum of 2 faculty or Graduate Faculty Scholars can skype in. Both the student defending and the chair of the committee must be physically present.

Students are responsible for being completely aware of the rules and regulations in the "UCF Thesis and Dissertation Manual" which can be obtained from the Graduate Studies website. Once the dissertation is in its final stages, it must be submitted electronically to the UCF "Turnitin.com" system for format approval. Then, again, two weeks prior to the defense, for a check of originality (i.e., don't plagiarize – it will get you).

The defense presentation is open to the public. Once the date, time and place of the defense are established, the student must post his/or her defense on the College website with an abstract a minimum of 2 weeks prior to the defense date on this link: www.cecs.ucf.edu/graddefense. Failure to post your defense with this 2 week window could delay your graduation until a later term. All other deadlines can be viewed on the UCF Academic Calendar for your graduating semester.

GRADUATION

Graduation is the culmination of a challenging and arduous journey in the pursuit of a higher degree. To get to this pinnacle, it takes dedication, sacrifice, and hard work (and meeting all the bureaucratic processes and deadlines of UCF). In order to eliminate or reduce the potential for any unnecessary delays or complications with graduation, each student must be aware of and comply with all degree requirements and deadlines, and must submit all necessary forms on time. University requirements for courses, numbers of hours, etc. are in the Graduate Catalog as noted earlier in the Handbook. The student is responsible for keeping up with his or her course records and knowing where they are in the program. In the last semester (the semester in which the student plans to graduate), several additional steps must be taken, as explained below.

- i. File the intent to graduate online early in the semester.
- ii. Finish writing the thesis or dissertation early enough to allow time for the committee to review at least two weeks before the defense deadline.
- iii. Obtain format review and approval by the graduate studies thesis editor before giving copies to the committee.
- iv. Contact each member of the thesis or dissertation committee to schedule a date for the defense.
- v. Coordinate with the ECE Graduate Admissions Specialist, your advisor and the Graduate Coordinator to ensure that your GPS report is “clean” and shows all sections of the report “satisfied” in order for you to be able to be Pre-Certified for graduation by the College.
- vi. Complete clean -up of lab space (after you have passed the exam and have

been told that no more work is needed), and check out with your advisor and the lab manager. Remember that all university property must be returned in good working order and any keys you may have turned in to the department.

GENERAL POLICIES

In this section, we recap program and university general policies that commonly affect the majority of graduate students. For the final word on policies, please see the Graduate Catalog.

For Master's Programs, see: [Electrical Engineering Masters Program and Computer Engineering Masters Program](#)

For Doctoral Programs, see: [Electrical Engineering Doctoral Program and Computer Engineering Doctoral Program](#)

- Satisfactory academic performance means that you must maintain a GPA of 3.0 in your graduate POS, with no more than 2 courses with a grade of “C”, as well as an overall GPA of at least 3.0 in all graduate coursework taken since entering the program.
- The department will accept no more than 9 hours of transfer credits for Master's students (not more than 12 credit hours of transfer for Accelerated BS to MS students) and up to 30 hours of Master's work for PhD students, provided a Master's degree was earned. These include courses taken at UCF in non-degree seeking status where a maximum of 9 credits with a “B” grade or higher can be transferred. A maximum of 36 hours can be transferred for the PhD programs and this may include an additional 6 hours from an unearned degree providing the grades are “B” or better. No “C” grades or “B-” grades will be accepted to transfer.
- Each research lab has a policy on laboratory safety and procedures. Please coordinate directly with the lab's manager if you work in a lab.
- Before passing the candidacy exam, PhD students may not enroll in dissertation hours, but they may enroll in doctoral research hours (XXX 7919). After passing the candidacy exam, PhD students may be considered to be full-time if they enroll in 3 dissertation hours (XXX 7980) per semester until they graduate. Prior to this point, nine credits in Fall/Spring and six in Summer are required to retain assistantship support.
- All graduate students are expected to abide by UCF's Golden Rule. See [UCF Golden Rule](#).
- Students have available an Academic Grievance Procedure. See [UCF Grievance Policies](#).
- Students may withdraw from a class meeting all conditions stated in the Graduate Catalog. However, this may result in the loss of a tuition waiver, and, for international students, this may place them in jeopardy of being considered out of status. See [UCF Graduate Admission Policies](#).

PROFESSIONAL DEVELOPMENT

In this section, we identify university resources available to students for professional development. A graduate student's professional development goes beyond completing course work, passing exams, conducting research for a thesis or dissertation, and meeting degree requirements. Professional development also involves developing the academic and non-

academic skills needed to become successful in the field of choice.

- UCF has an active professional development program for graduate students, including the Professoriate Program, sponsored by Faculty Center for Teaching and Learning, the GTA Certificate Program, sponsored by FCTL, the Graduate Student Association Seminar Series, the Graduate Research forum, sponsored by the Division of Graduate Studies, and special award recognitions such as the Award for Excellence by a Graduate Teaching Assistant, the Award for Excellence in Graduate Student Teaching, the Award for the Outstanding Master's Thesis, and the Award for the Outstanding Dissertation.
- The university has active student chapters of the ACM and the IEEE. The cost for student membership in the national organizations is subsidized by professional memberships. This is a "bargain" that no student should pass up.
- ECE sponsors regular colloquia talks by leading researchers in the discipline. All students are strongly encouraged to attend as many as feasible within the constraints of their courses and other academic obligations.
- Various research groups hold their own seminars in which students present their research in front of other members of their research group.
- Doctoral students have the opportunity to develop grant-proposal writing skills by working closely with faculty mentors.
- Students are expected to publish the results of their research. In fact, the ECE PhD program requires publication to enter candidacy.
- Graduate students in ECE are encouraged to present papers at conferences. Often their faculty mentor will be able to fund one or more such opportunities. Office of Graduate Studies and the Student Government Association are other sources of such support.
- Graduate students in ECE are also encouraged to participate in summer research internships when this is compatible with their research agendas – see your research advisor for more information and guidelines.

FINANCIAL SUPPORT

Financial support is a major concern for graduate students, especially since many rely on financial support from the university to pursue graduate study. In combination, the college, the university, and the department provide financial assistance to graduate students in several ways: (1) Fellowships and Scholarships are available to academically outstanding students, (2) Graduate Teaching Assistantships – GTA's (for grading, recitation instruction, or laboratory teaching) are available. (3) Graduate Research Assistantships – GRA's (for participating in sponsored faculty directed research) are available depending on the current funding levels of the faculty. Rapid progress by the student, especially in completing the qualifying review and publishing research results, aids in further commitment from the student's faculty advisor. Students must maintain satisfactory academic progress through earning good course grades, registering and completing a full course load and passing the Qualifier, completing acceptable research or grading or teaching work to maintain their financial support.

- All students must maintain a 3.0 GPA in their Program of Study, as well as overall courses taken since entering the program. They must not receive more than 2 "C" grades, and those must be balanced to maintain the 3.0 overall GPA necessary to graduate. Students on contract are expected to work 10 to 20 hours per week on their assigned tasks (whether it be grading, teaching, or research), while they are

maintaining satisfactory progress in completing their academic courses. Note that satisfactory progress for a supported student is not the same as maintaining the minimum grades, or of just barely performing at research. Support is a privilege not a right.

- All GTA's (especially international students) who have any contact with undergraduate students must take all training required by Graduate Studies. These training modules include:
 1. GTA/GTG Training: [UCF GTA/GTG Training](#).
 2. SPEAK Exam: [UCF SPEAK Exam](#).
 3. GTA Legal Module
- Students must meet their obligations to continue to receive their financial support. If the students are on time cards, the cards must be filled out properly and filed on time. If they are on contract, they must maintain satisfactory work as defined by their supervisor. Also, being on contract requires that the students register for the proper number of hours of classes in time to process the tuition waiver.
- The duration of financial support may vary from one semester at a time to up to a 4-years.
- International students are expected to be here as full-time students, and may not work off campus except under very strict conditions. Please see the [UCF Global](#) website for more information.

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see [UCF Financial Information](#), which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The [UCF Student Financial Assistance](#) section of the Graduate Catalog is another key resource.

Key points about financial support:

- If you're interested in financial assistance, you're strongly encouraged to contact the professors early. A complete application for admission, including all supporting documents, must be received by the priority date listed for your program under "Admissions." However, no explicit application is needed for consideration for Graduate Teaching Assistantships, Graduate Research Assistantships or Fellowships. The primary source of support for the MS students are research assistantships.
- You must be admitted to a graduate program before the university can consider awarding financial assistance to you.
- If you want to be considered for loans and other need-based financial assistance, review the UCF Student Financial Assistance website at <http://finaid.ucf.edu> and complete the FAFSA (Free Application for Federal Student Aid) form, which is available online at <http://www.fafsa.ed.gov>. Apply early and allow up to six weeks for the FAFSA form to be processed.
- UCF Graduate Studies awards university graduate fellowships, with most decisions based on nominations from the colleges and programs. All admitted graduate students are automatically considered in this nomination process. To be eligible for a fellowship, a student must be accepted as a graduate student in a degree program and be enrolled full-time. University graduate fellowships are not affected by [FAFSA](#) determination of need.
- Please note that select fellowships do require students to fill out a fellowship application (either a university fellowship application, an external fellowship application, or a college or school fellowship application). For university fellowship applications, see [Financing Grad School](#).

Contact Information

Dr. Kalpathy Sundaram, PhD, Professor

Phone Number: 407-823-5326

kalpathy.sundaram@ucf.edu

MISCELLANEOUS

- Department of ECE Faculty and Staff Involved in Graduate Student Support
 - Dr. Zhihua Qu– Chair
 - Dr .Parveen Wahid– Associate Chair
 - Dr .Kalpathy Sundaram– Graduate Program Coordinator
 - Diana Camerino Graduate Admissions Specialist

- Department and college resources available for supported (GTA and GRA) students. ECE provides:
 - office space, desks, etc.
 - e-mail accounts, server space and software to all full-time graduate students
 - campus mailboxes to graduate students
 - use of telephones, and copy and fax machines (for university business).

- Most faculty members in the ECE department are active in research. Their areas and current research projects can be found by starting on the school’s home page www.ece.ucf.edu and following the links under “Research” and “Faculty and Staff.”

- UCF provides University resources for students. Some examples are:
 - Library
 - Computer facilities
 - Student Associations and Student Support Groups
 - Campus social life
 - University Writing Center
 - The Counseling Center

- The University Academic Calendar can be found at [UCF Academic Calendar](#)

FORMS

During their career at UCF, graduate students will be required to complete forms to progress through their degree program. The most relevant forms are listed below and a complete listing can be found at [UCF Graduate Forms](#)

Program of Study – must be filed and signed before the 12th credit hour of graduate coursework (may be amended later). This is usually completed by the middle of your second semester. The template for your admitted term and program can be accessed with the following link:

www.ece.ucf.edu/graduate/EE.php

Other department forms can be requested from the Graduate Admissions Specialist: Diana Camerino
E-mail: diana.camerino@ucf.edu