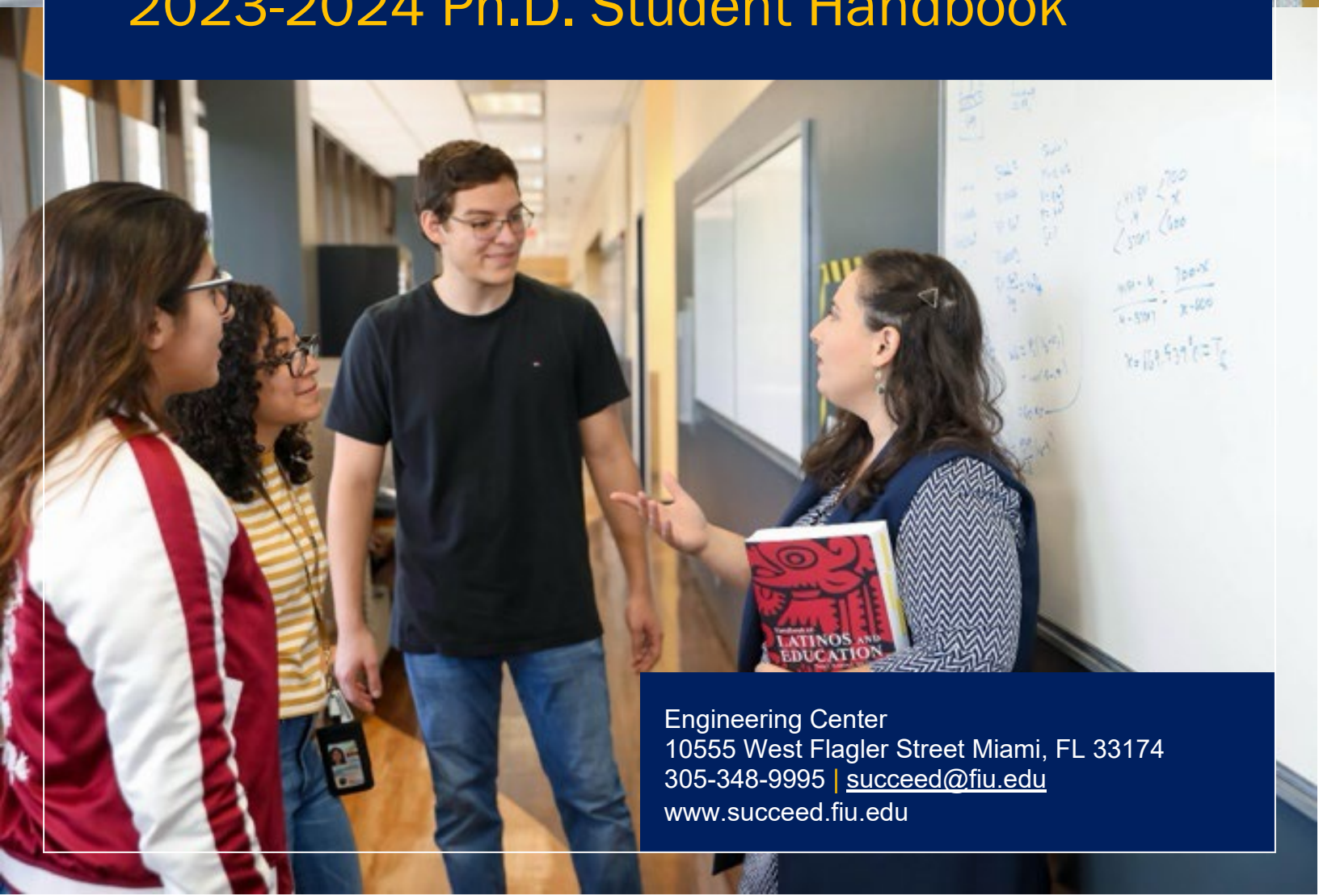
FIU | Engineering & Computing

School of Universal Computing, Construction and Engineering Education

Graduate Program in Engineering and Computing Education

2023-2024 Ph.D. Student Handbook



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Introduction

Welcome from the Graduate Program Director

August 7, 2023

Welcome ECED Graduate Students!

My name is Dr. Stephen Secules and I'm your ECED program Graduate Program Director (GPD). Last year I greeted you as Co-GPD alongside our SUCCEED Director, Dr. Monica Cardella. This year I am taking on the official role. Dr. Cardella will continue to support our graduate program as Director and will step in in any GPD capacities I'm unable to fulfill. In addition to Dr. Cardella we will be supported by our graduate committee, including Senior Program Coordinator Ileana Lindsay, former GPD Dr. Alexandra Strong, Dr. Stephanie Lunn, and student representatives Collins Vaye and Nivedita Kumar. Thanks in advance to all for their help.

With the addition of our newest cohort of students, the SUCCEED community is over 25 PhD students supported by six core faculty members (Drs. Berhane, Cardella, Fletcher, Lunn, Secules, Strong) and one staff member (Ms. Lindsay). With members of our first cohort reaching candidacy, we are maturing into a program with all levels of students, and with new capacities for peer mentorship. We also have a significant presence in the engineering and computing education community, with SUCCEED community members taking leadership in national conferences and winning national recognition. Our impressive growth also means we must continue to advocate for more resources for our department, and we hope to have some good news to share with you in the near future. In the meantime, we are grateful for all that each of our community members does, including our new and returning graduate students, postdocs, faculty, staff, undergraduate researchers, and other friends and collaborators.

As the program grows, we will adapt some systems for working together as a community. This year I will continue to host GPD office hours (virtual and on campus) to allow you to ask questions, get advice, or generally stay connected. Remember as a student in ECED you are also supported by your student representatives, Collins Vaye and Nivedita Kumar, who will help represent your voice in our graduate committee meetings.

As we begin the new year, I encourage you to:

1. ***Dream big***. Imagine what you can do in and outside of the program this year and look to make it happen.
2. ***Mentor and seek mentorship***. Informally or via our new peer mentorship program run by our ECED student representatives. Visit GPD office hours if you'd like to talk to me or set another appointment if you can't make that time.
3. ***Socialize***. Have fun, practice self-care, enjoy each other's company and Miami. You can co-organize socials with the help of your graduate student representatives, Ms. Lindsay, and/or

me.

4. ***Develop yourself.*** Take advantage of professional development offerings we have available. Particularly pay attention to what's happening at STEM TI Tuesday meetings and DBER seminars and through national conferences and webinar workshops.
5. ***Look outwards.*** Look for what impact you can have, on FIU, on the College of Engineering and Computing, on the local Miami community, and in your national and international communities.

In conclusion, welcome to a new academic year! We look forward to working with and learning from you all.

Stephen Secules
he/him pronouns
Assistant Professor, SUCCEED and STEM Transformation Institute
Graduate Program Director, ECED PhD Program

Purpose & Usage of Handbook

The Engineering and Computing Education Graduate Handbook provides a detailed description of the requirements for the Ph.D. in Engineering and Computing Education. This Graduate Handbook is intended to familiarize you, a graduate student in ECED, with the requirements, policies and procedures involved throughout your graduate and research experience. The rules and regulations provided in this handbook govern our academic programs and describe the duties and responsibilities of graduate students in the School of Universal Computing, Construction and Engineering Education (SUCCEED). We encourage you to utilize the information and resources included in this handbook to ease and enhance your experience in the program. There is an expectation that each student will be familiar with the contents of this handbook.

> These rules and requirements are in addition to and subordinate to those described in the University Graduate School (UGS) requirements and policies that can be found at the Florida International University (FIU) website. Any inconsistencies within this handbook or between this handbook and the University Graduate School should be brought to the attention of the Graduate Program Director (GPD).

Note: in semesters when there are two Co-Graduate Program Directors, you should communicate with BOTH GPDs.

Any doubt regarding the interpretation of any procedure or requirement in this handbook, or if there are questions about the graduate program involving matters not covered in this handbook, please consult with the GPD.

This handbook is a living document that may change each academic year. Students may choose to follow the handbook of the first term of enrollment, or they may request the Graduate Program Committee to consider them under a more recent handbook if changes made are favorable to the student. Any changes made to the Graduate handbook will be communicated to the graduate students by the beginning of the academic year (August). This document will reside on the SUCCEED website.

SUCCEED & STEM TI

> *Discipline-based education research (DBER) is a term that has emerged in the last few decades to describe research that 'investigates learning and teaching in a discipline using a range of methods with deep grounding in the discipline's priorities, worldview, knowledge, and practices. It is informed by and complementary to more general research on human learning and cognition' (National Research Council [NRC], 2012, p. 9). DBER seeks to develop evidence-based knowledge and practices that improve teaching and learning in the science, technology, engineering, and mathematics (STEM) disciplines… An important feature of DBER is the strong role that the discipline plays in setting the priorities for the research, and in making sure it is relevant and focused on improving what is most important in moving undergraduates towards expertise in the discipline. Each discipline has bodies of disciplinary content, a culture that shapes how members of the discipline think about and approach their work, and established research methods and tools that practitioners use. Each DBER field combines these discipline-based perspectives with theoretical frameworks and research methodologies from education research.*[1]

In 2018, SUCCEED was established through a collaboration between FIU's STEM Transformation Institute, Dr. Mark Weiss and others within the College of Engineering and Computing. Since then, SUCCEED has been one of two major units within FIU whose main focus is discipline-based education research (DBER). SUCCEED is modeled after other engineering education departments and programs within the United States with three critical exceptions: (1) This is the first Ph.D. program with an Engineering and/or Computing Education at a Minority-Serving Institution, (2) This is the first doctoral program to explicitly integrate engineering and computing education, and (3) SUCCEED's relationship with STEM Transformation Institute creates a strong DBER community across many departments and colleges. One of the challenges for many DBER researchers is finding community on their campuses. The experience of being the sole education researcher or education expert (a "lone wolf") among traditional STEM faculty is not uncommon and has even become the subject of many research studies. At FIU, however, DBER researchers and graduate students arrive to campus with a community already in place.

The other unit focused on DBER, the STEM Transformation Institute (STEM TI), was founded to support, expand, and conduct research on the improvement of STEM teaching across the K-20 spectrum. STEM TI is comprised of a diverse group of researchers, instructors, post-doctoral fellows, graduate and undergraduate researchers, and staff. This group comes from a variety of STEM disciplines (e.g., engineering, math, physics, geoscience, biology, computing) and as the quote above from Henderson and colleagues (2017) suggests, brings cross-disciplinary perspectives and ideas. Through STEM TI, DBER community members work across disciplines to impact change within their own disciplines as well as within K-12, undergraduate, and graduate STEM education systems. The close relationship between STEM TI and SUCCEED enables cross-disciplinary learning, fosters a strong support network for students, faculty, and staff, and encourages creativity in research and change projects. As part of SUCCEED, you are now also part of STEM TI and this FIU DBER community.

The opening quote from Henderson and colleagues (2017) calls for a national DBER alliance as an approach to integrating ideas, frameworks, and research findings for the benefit of all disciplines. Within STEM TI, we have a local version of that alliance here at FIU. As SUCCEED graduate students and members of STEM TI, you have an opportunity to learn from many talented researchers inside and outside engineering and computing. We see engagement in the interdisciplinary STEM TI community as a critical part of your participation in SUCCEED – please explore the STEM TI section of the handbook for more information and particular opportunities for engagement.

[1]Henderson, C., Connolly, M., Dolan, E., Finkelstein, N., Franklin, S., Malcom, S., Rasmussen, C., Redd, K., and St. John, K. (2017). "Towards the STEM DBER Alliance: Why We Need a Discipline-Based STEM Education Research Community." *Journal of Engineering Education.* 106:3, 349-355.

Program Overview

The graduate program in Engineering and Computing Education in SUCCEED at FIU was developed in 2018 as the first Engineering and Computing Education department at a Minority Serving Institution, and the first cohort of students started in the program in 2020. The program provides an enriching academic environment to students seeking to address the critical issues facing engineering and computing education, particularly in areas involving educational equity, diversity, and inclusion.

SUCCEED was created in alignment with FIU's vision to be a "leading urban public research university focused on student learning, innovation, and collaboration." SUCCEED faculty, along with the students and staff, seek to connect research and innovation with student learning through collaboration with other members of the college of engineering and computing and the FIU community more broadly.

Vision

SUCCEED's vision is to be an internationally recognized leader in engineering and computing education research and design, enhancing the experiences of engineering and computing students from all backgrounds and at all levels.

Mission

SUCCEED's mission is to serve our diverse student population, engage with the engineering and computing industry, and support our international community of researchers:

- ✓ We consider equity, diversity, and inclusion as core values and principles of our research, teaching, and community engagement work.
- ✓ We develop our students as leaders, capable of collaborating across disciplines, following diverse career trajectories, and changing the way we think about and approach local, national, and global challenges.
- ✓ We collaborate with the engineering and computing industry through research and curricular projects in K-12 and at the college level, preparing graduates to become leaders at global, regional, and local corporations.
- ✓ We engage the engineering and computing education community through innovative research and the use of evidence-based approaches in our teaching. This work supports our faculty's intellectual growth, develops future independent scholars and leaders, and improves the educational success of all current and future engineering and computer science students at FIU and beyond.

About the Doctoral Program

Engineering education research and computing education research originally focused predominantly on understanding how people learn engineering and computing respectively and how to improve instruction. Yet, that was only the beginning. Over the last two decades, research in these fields has expanded to examine the experiences of learners, explore work and learning environments of engineers and computer scientists, and critically evaluate the educational and professional systems of engineering and computing. For instance, a significant research area in ECED focuses on broadening participation in engineering and computing, fields that have long exhibited underrepresentation and marginalization of populations due to gender, race, ethnicity, and socio-economic status. Through the continual development of scholars and change agents in engineering and computing education, SUCCEED hopes to strengthen the quality and inclusivity of the educational systems impacting graduate and undergraduate engineering and computer science students.

This degree program merges two existing strengths: those of the STEM TI, whose researchers conduct nationally impactful research in STEM Education primarily in physics, biology, chemistry, and mathematics, and the strength of FIU's College of Engineering and Computing, which graduates more Hispanic engineering students than any other university in the continental US and is #11 in graduating Black engineers. Students are offered a learning experience in a supportive academic community, celebrating the intellectual energy that flows from an extremely diverse student population.

By the end of the program, engineering and computing education doctoral students will have developed and strengthened their abilities to: (1) conduct and direct research in engineering and/or computing education, (2) design equitable and inclusive educational experiences, and (3) address critical issues facing engineering and computing education, especially in equity, diversity, and inclusion. Additionally, this program seeks to develop students for a diverse set of professional trajectories both inside and outside a university/college setting.

Administration & Contact Information

The Graduate Program Director (GPD) and the Graduate Program Committee develop all requirements, policies, and procedures for the ECED Graduate program with input from students, staff, and faculty. The Graduate Program Committee leads the admissions process and assists with the monitoring of current graduate students, oversees graduate-level curriculum matters related to the graduate courses offered by the department, and implements all graduate program, college, and university graduate school policies. The GPD is the chair of the Graduate Program Committee, and the graduate program is led by those faculty members in the department that hold Graduate Faculty Status with UGS along with the Senior Program Coordinator.

The Senior Program Coordinator serves as the administrative support to the Graduate Program Director, which entails the maintenance of all files for the graduate program. The Senior Program Coordinator can provide advice and support for students on topics related to the graduate program including but not limited to: course registration, application for admission, fellowships, scholarships and financial assistance, and other routine paperwork relating to the graduate program. Additionally, the Senior Program Coordinator works on marketing for the department.

The administrative staff of the graduate program of SUCCEED includes:

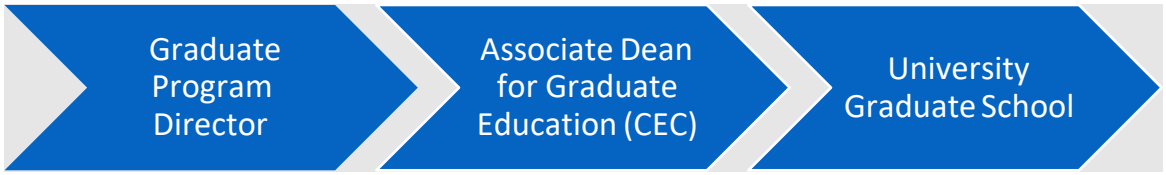
Director of SUCCEED:	Dr. Monica Cardella 305-348-5076 mcardell@fiu.edu
Graduate Program Director:	Dr. Stephen Secules 305-348-4705 eced-phd@fiu.edu
Senior Program Coordinator:	Ms. Ileana Lindsay 305-348-9995 ilindsay@fiu.edu

Submitting Forms for Approval

It is each student's responsibility to ensure that forms that require approval are received on time and that all deadlines are met. Students should submit forms well before the deadline to allow sufficient time for approval and signature. A full list of student forms (paper and online) can be found here: https://gradschool.fiu.edu/students/. Most student forms, including Dissertation Milestone Forms and Annual Graduate Student Evaluation, are now submitted via an online form found here: https://my.fiu.edu/. Once you log into the system, you will see a Student tab. For submitting a paper form, contact Ileana Lindsay to help coordinate.

Typical Approval Process

Below is the typical chain of approval for graduate student forms.



You will typically see a similar chain of approval in my.fiu. If something appears to be stalled at the SUCCEED GPD or Director level, you can reach out to GPD and/or Program Coordinator (Ileana Lindsay) for support.

A similar process is in place for paper forms, and many paper forms can be signed electronically through DocuSign. Please check with the Program Coordinator to initiate routing for a paper form.

Petitions

Petitions that are requesting an exception to a UGS policy require UGS approval. Examples of UGS petitions would include, but are not limited to, the UGS policy limiting outside work for Graduate Assistants and limits on total number of course credits transferred from prior degrees. These UGS petitions are routed by the above process and should allow an additional week for UGS to approve. To begin a UGS petition you should work with your Major Professor to draft a memo making a case for the petition and then the GPD will add their own memo / commentary and submit the petition on your behalf. In light of the timeline listed above for routing through CEC and UGS, you are advised to submit all petitions at least three weeks before the situation in question would be impacted (i.e., the start of a new outside work internship in addition to a graduate assistantship).

Petitions that are requesting an exception to ECED policy are only internal to ECED graduate committee. One prominent example of a graduate committee petition is for a course substitution or waiver of a required ECED course. This type of petition should be submitted in the Fall or Spring semester **before** the student's course registration would be affected. For situations where this petition is not possible (e.g., a starting student needs to assess how their transferred prior coursework will be counted to know how to register their first semester) the GPD and advisor can make initial decisions that help guide the student's course selection. A formal petition should be presented to the graduate committee as soon as possible. ECED petitions are also collaboratively prepared by you and your Major Professor and are presented by the Major Professor on behalf of the student to the graduate committee. The Major Professor should know when upcoming graduate

committee meetings are and should submit the petition to the committee members by 1 week in advance of the meeting.

In both types of petitions, the memo should clearly identify the ECED or UGS policy in question and provide a strong case for the exception to the policy. You may provide additional documentation to help strengthen your case. For instance for course substitution petitions, it is useful to provide annotated syllabi that identify overlaps in learning objectives, readings, and/or course deliverables. For a UGS petition, it is helpful to provide sufficient detail and to use examples of successful prior petitions as a guide.

Getting Started

Admission Requirements and Application Process

The admission process begins with the completion and submission of the application, which can be found here: https://admissions.fiu.edu/how-to-apply/graduate-applicant/steps-to-apply/index.html

Your application must meet the following requirements for admissions consideration:

1. Have a bachelor's degree in engineering or computing or a closely related field.
2. Have either an upper division GPA of at least 3.0 in the bachelor's degree, calculated based on the last 60 credits attempted, or GPA of at least 3.0
3. Have three letters of recommendation, a copy of the transcript, and a copy of the university graduate application.
4. A one to two-page, single-spaced Statement of Purpose that describes your professional goals, how the program would help you achieve those goals, and what experiences have prepared you to pursue a doctoral degree in Engineering and Computing Education.
5. International students whose native language is not English must obtain a score of 80 or higher on the TOEFL iBT (this corresponds to 550 on the old TOEFL test) or 6.3 overall on the IELTS, or equivalent test as approved by the University Graduate School. The UGS has a list of countries that are exempt from this requirement.
6. Curriculum vitae or resume.

Application Deadlines

The current priority application deadline is December 15th of the year prior to Fall semester admission. The Graduate Program Committee will continue to review and consider applications after this deadline.

Please note, for international students, additional time is required to process visa applications. Therefore, although the committee will review applications after December 15th, the committee cannot guarantee an international student, if admitted, will be able to enroll the following fall semester due to the necessary visa processing time.

The ECED program is designed for cohorts of students to enroll in the fall semester each academic year. In rare cases, the Graduate Program Committee may consider spring enrollment. Please reach out to either the Graduate Program Director and/or the Senior Program Coordinator if you are interested in spring enrollment. Deadlines will be posted on the SUCCEED website as appropriate.

International Admission & Funding

In addition to the requirements mentioned above, international applicants must:

- ✓ Demonstrate proficiency in English by achieving a minimum score of 80 on the TOEFL iBT, 6.3 overall on the IELTS, or equivalent test as approved by the University Graduate School. This requirement applies to international students whose first language is not English; UGS has a list of countries that are exempt from this requirement.
- ✓ Must complete a declaration and certification of financial ability to support themselves while a student (contact the FIU International Students Office for further information):
- ✓ Must have their transcripts translated and certified; information on translation service companies is available on the University Graduate School website at the bottom of the Admissions page: https://internationaladmissions.fiu.edu/

Funding

SUCCEED offers financial assistance for qualified graduate students in the forms of Graduate Assistantships (GA), Research Assistantships (RA), and Teaching Assistantships (TA). Students are assigned this funding at the time of their admission. The assistantships are typically 20 hours a week but can also be 10 hours a week. Additional fellowships are also available through the University Graduate School, which are subject to a competitive, university-wide selection process. The stipend amounts for GAs/RAs/TAs vary depending on the nature of the assistantship. All assistantships provide a tuition waiver (for students matriculated at a full-term status) and health insurance is subsidized by the graduate school for students holding a full-term appointment for 20 hours per week. Graduate assistants can consult the UGS graduate assistant handbook for additional rules and guidelines.

Only full-time students as defined by FIU are eligible for graduate assistantship and university fellowship funding. Full time students are required to enroll in 9 credit hours in Fall / Spring and 6 credit hours in Summer. Students are not permitted to have any additional employment outside or inside of FIU while they are on an active GA contract. Petitions for exceptions for temporary internships and traineeships may be pursued with the help of the GPD.

A student receiving a GA/TA/RA must agree not to accept additional employment, within or outside the University, without expressed written prior approval (petition approval) from the University Graduate School.

For those who currently have other employment, there are a few options for receiving additional funding and tuition support. For example, please speak with your Major Professor about opportunities to conduct research at an hourly rate (see HR for pay ranges). Hours cannot exceed 20 hours per week. UGS also offers a Provost Employer Supported Fellowship which provides a tuition waiver for

recipients.

We also recommend all prospective and current students regularly explore doctoral fellowships (e.g., through the Ph.D. project, ProFellow). Students who are funded on fellowships administered by FIU (e.g. the FIU Inclusion Fellowship; the National Science Foundation Graduate Research Fellowship; the Ford Foundation Fellowship) are typically expected to be enrolled full time, with similar restrictions on outside employment

Funding decisions are based on a variety of factors, including budget constraints, graduate positions available, student academic standing, progress, timeline to degree, and more. The different types of funding opportunities are explained in detail below.

Costs & Fees (UGS)

For a detailed breakdown of the current tuition and fees provided by the University Graduate School, click here. These amounts are updated annually and will be provided to graduate students at the start of each academic year.

Tuition Waivers

Tuition waivers are issued to graduate students who are on an FIU assistantship employed for 20 hours per week (0.5 FTE) and are matriculated at a full-term status (9 graduate credits in Fall and Spring; 6 graduate credits in Summer). Tuition waivers are also issued to current full-time (1 FTE) FIU employees, by way of the employee tuition waiver benefit program. We encourage FIU employees to explore the program to learn more about their options. If you are not an FIU employee, we recommend speaking with your current employer to see if they offer tuition support for graduate programs. All graduate students with a tuition waiver are responsible for paying the per credit fees along with the standard semester fees. Laboratory, on-line, and other special fees are also the responsibility of the student. Part-time students can consider applying for a tuition waiver through UGS's Provost Employer Supported Fellowship.

Assistantships

Research Assistantships (RA)

A Graduate Research Assistant is a degree-seeking graduate student who performs research duties related to their academic program. The RA will perform general duties related to research, documentation, experimentation, and other activities that support a specific funded research project. The funding for an RA position comes directly from a faculty member's funded research program and may vary depending on the project. The RA position may be for a single semester or academic year and is renewable based on the availability of funding and at the discretion of the faculty member. Graduate students working as an RA are responsible for supporting the research agenda established by the Principal Investigator (PI)/Co-PI on the grant, which could be the Major Professor or another faculty member.

While the specific requirements of an RA on a grant will be determined by the PI/Co-PI for the project, RAs on a research project are typically responsible for at least the following:

- ✓ Making progress on research tasks (e.g., literature reviews, data collection, IRB submissions, data analysis, writing) in conjunction with guidance provided by the project's PI/Co-PIs.
- ✓ Preparing for and attending research group (and individual) meetings.
- ✓ Meeting research deadlines or communicating the reasons for deadlines that are not (or will not be) met.
- ✓ Seeking out publication opportunities for both conferences and journals in conjunction with the PI/Co-PI on the project.

Teaching Assistantships (TA)

A Graduate Teaching Assistant is a degree-seeking graduate student who assists a faculty member with a teaching assignment. The duties may include, but are not limited to, preparing lectures, grading assignments, researching class topics, and substituting for Faculty of Record on select class days. A Graduate Teaching Assistant who is the Instructor of Record must have completed 18 graduate credit

hours in the subject area and perform teaching duties related to their academic program.

Graduate Assistantships (GA)

Graduate Assistants are degree-seeking graduate students who assist in the teaching and/or research function, but do not have primary responsibility for teaching and/or research. The duties may include those outlined in either the teaching or research classifications as well as other duties assigned that relate to their academic program.

External Funding

Whether students are supported by an assistantship or are seeking funding sources to support their research, considering other options for external funding is always encouraged. The University Graduate School provides a list of available external funding opportunities to students, both domestic and international. Click here to learn more about external funding opportunities.

Funding Academic Eligibility

To maintain academic eligibility for GA/TA/RA, a student must maintain a cumulative GPA of 3.0 or higher for all courses taken while in the doctoral program. Both SUCCEED and the University Graduate School continuously monitor the progress of each graduate student. Annual reviews are conducted at the end of the spring semester in addition to the meetings graduate students are expected to have with their Major Professor throughout the academic year. Students who fall below a cumulative GPA of 3.0 for their prior semester of graduate work or whose review materials are found deficient will be automatically placed on academic warning and may be required to appear before the Graduate Program Director and/or Graduate Program Committee. During this time, the Graduate Program Director, Major Professor, and/or Graduate Program Committee will work with the student to identify the difficulties related to the unsatisfactory progress and to outline adjustments to assist the student with improvement. Failure to maintain good academic standing will result in placement on academic warning, probation, or dismissal.

Students who receive an “incomplete” grade must make up the missing work within two academic terms or it will automatically default to an F grade. According to official university policy, there is no extension of the two terms deadline, which includes the summer term. Students must consult with the instructor who will define the remaining requirements for successful course completion.

Change of Funding

A student who has been offered and accepted an assistantship contract for a given semester or academic year can switch their funding for the following reasons:

- ✓ Major Professor has informed the student and department that a change of funding is available based on current or new grant projects.
- ✓ Department has supplementary assistantships available.
- ✓ Student has requested to transition from full-time enrollment to part-time enrollment.
- ✓ Student has been awarded a university graduate school fellowship (DYF, DEA, and any other FIU fellowships available) or obtained external funding in the form of a fellowship on their own.

Prior to the start of each term, the Senior Program Coordinator will notify faculty that there is an open

call for submission of change of contracts (funding) for graduate students. Consideration in this decision made by Major Professors is based on the availability of funding. Students will be notified by the Senior Program Coordinator to complete any required paperwork and submission of documents.

Health Insurance

FIU provides subsidized health insurance to all graduate assistants holding a full-term appointment for 20 hours per week. All graduate assistants are required to participate in this health insurance plan unless their insurance company will certify equivalent coverage.

Graduate assistants are responsible for 25% of the health insurance premium which will be deducted from their paycheck throughout the semester. University Graduate School automatically enrolls graduate students in their health insurance and coverage information will communicated directly to the student. The option to opt-out of the plan is available to graduate students each year. Communication to opt-out will be sent from the University Graduate School.

International students on an F-1 or J-1 student visa who wish to opt-out of the University's health insurance plan must complete the International Health Insurance Compliance Form provided by FIU's Student Health Services.

For more information regarding the GA insurance, please visit: https://go.gallagherstudent.com/Universities/Florida%20International%20University/Home.

If you need help with a health insurance hold, you contact the health compliance office (insure@fiu.edu, 305-348-2688).

If you have other issues with health insurance or pay, please contact Betty Sigler (bsigler@fiu.edu 305-348-0394). While your advisor, GPD, and Program Coordinator don't have any direct control over health insurance, keeping them informed about issues may help get things resolved.

Course Registration

Within the ECED program, courses are an important opportunity to deepen one's understanding of a research area or method, develop communication, reading, and critical thinking skills, and build community with faculty and students. As described in later sections, the choices of when to take which courses can depend on many factors. As a result, we view course registration as a collaborative process between the student and their Major Professor, with input from the students' other committee members. Ultimately the student is the final decision-maker.

*Note: FIU's Graduate School uses the term "**Major Professor**" but you might hear us also refer to this person as your "Advisor", you "Major Advisor", or your "Committee Chair" or "Chair" (of your doctoral committee)*

Prior to the start of each semester, graduate students should meet with their Major Professor to review their plan of study and the listing of available courses. Students are required to register for courses and/or dissertation credits each semester (as per their plan of study) until the Dissertation is concluded, unless a formal Leave of Absence is requested. Registration deadlines are sent out prior to the start of each term. It is the responsibility of the student to register by the deadline to avoid incurring a late registration fee.

Registration codes and/or authorization for courses that require departmental approval can be obtained directly with the instructor or the Senior Program Coordinator. Graduate students supported on an assistantship must be enrolled in nine credit hours during the fall and spring semesters, and six credit hours during in the summer semester, to be considered in full-time status. The only exception to this is for post-candidacy students who register for dissertation credits, in which case the minimum requirement is three credit hours per semester, including the summer term. Graduate students cannot enroll in more than **15 credit hours per semester** without the Dean's approval.

Students considering dropping a course must discuss the implications of this option with their Major Professor prior to finalizing their decision, as it may incur changes to their plan of study, or their full-time status. Students who fail to notify their Major Professor may jeopardize their progression in the graduate program.

Registration is conducted entirely online through the my.fiu.edu web portal. The OneStop office provides information on how to access courses, add courses, and any additional steps that need to be taken in the registration process. For more information, visit https://onestop.fiu.edu/classes/register-for-classes/.

Housing Information

FIU occasionally offers housing to graduate students based on available space, after the assignment of all continuing students and freshmen is completed. For more information about on- campus housing, please visit https://housing.fiu.edu/. Here you will find more information on applying for housing, deadlines, and costs.

FIU also offers students a variety of off-campus housing options in a wide range of prices and distance. The Off-Campus Housing Service website assists students with finding both housing and roommates within a radius of all FIU campuses. To access the Off-Campus Housing, visit: https://www.fiuoffcampushousing.com/

Be sure to consult a local realtor for options and more information. Some apartments may not include utilities (electric, water, phone, or cable) as part of their lease agreement. There may be a need to make further arrangements to have certain services connected through the utility companies directly. Either a property manager or landlord should be able to provide the appropriate contact information.

Transportation

FIU's Parking and Transportation has a variety of transportation services available to students. Services include access to free shuttles between campuses and around campus, discounted rates for Miami-Dade Transit services, and the use of Zipcars. The most used service for College of Engineering and Computing students is the CATS Shuttle. The CATS shuttle travels between Modesto A. Maidique Campus and the Engineering Center. The free service operates two shuttles running continuously from 6:00 AM to 11:00 PM. Shuttles stop at the following locations:

- ✓ Lot 3
- ✓ East of PG5 109 Tower
- ✓ Identity Miami
- ✓ 4th Street Commons
- ✓ Engineering Center (EC)
- ✓ Lot 5 (Miami-Dade transit hub located at 107th Ave and 17th street)

For more information about the different transportation services offered by Parking and Transportation, visit their website: https://operations.fiu.edu/.

Orientation

Prior to the start of the Fall semester, there is a mandatory orientation conducted by the ECED graduate program for all new incoming graduate students. In the rare case that a student begins the ECED program in a Spring semester, a Spring orientation will be provided. The mandatory orientation provides new students with an overview of the graduate program requirements, procedures for fulfilling those requirements, graduate student academic responsibilities, and information related to STEM TI. In addition, SUCCEED faculty and the Senior Program Coordinator will be available to answer any questions or concerns regarding the graduate program and department. Communications regarding the orientation will be sent directly by the Senior Program Coordinator. For students serving as teaching assistants, additional University training will be required. An additional graduate student orientation session will be offered by the University Graduate School. Communications regarding the SUCCEED orientation will be sent directly by the Senior Program Coordinator.

Information for International Students

ISSS Orientation

All students at FIU in F1 or J1 student status are required to attend a MANDATORY Immigration Orientation conducted by the Office of International Student & Scholar Services (ISSS). This is a separate orientation from other academic, departmental, or university-wide orientations and it will cover information specific to international students that you MUST be aware of. This orientation is offered at both the Biscayne Bay Campus and the Modesto Maidique Campus every semester.

During the fall semester only, the ISSS Immigration Orientation will be offered in combination with the Graduate Student Orientation offered by the University Graduate School at the Modesto Maidique Campus. If you do not attend this orientation, you will be expected to attend a separate ISSS Immigration Orientation offered for all new international students. If you are unable to attend an ISSS Immigration Orientation before the semester begins, you must schedule an appointment with an ISSS advisor at your earliest convenience to receive counseling related to your immigration status. For more information, please visit: http://isss.fiu.edu

Degree Requirements

The Engineering and Computing Education (ECED) doctoral program aims to prepare students:

- ✓ To conduct and direct research in engineering or computing education,
- ✓ To design and assess inclusive, innovative, and effective educational experiences in engineering, computing, and/or engineering and computing education,
- ✓ To address critical issues in equity, diversity, and inclusion within engineering and computing education, and
- ✓ For a diverse set of professional trajectories both inside and outside the classroom.

These learning outcomes are achieved and assessed through coursework, teaching and service experiences, a comprehensive exam, and independent research in the form of a doctoral dissertation. The subsequent sections outline the degree requirements in detail as well as various resources for students. For additional information on the Ph.D. milestones, please see the *Ph.D. Milestones and Benchmarks* section.

Curriculum

The doctoral curriculum is designed to expose ECED students to a breadth of engineering and computing education research topics, methods, and theories, as well as broader educational and social science methods and theories. Students will also develop their knowledge and skills within an engineering or computing discipline to prepare them for teaching experiences in the discipline. Lastly, doctoral students will explore an engineering and computing education specialization of their choosing, in collaboration with their Major Professor, to prepare them for their dissertation research and/or for a particular career trajectory.

Overall, an ECED Ph.D. requires a minimum of 75 credit hours, which include:

- **Engineering and Computing Education Core Courses** (9 courses, 20 Credits)
  - 4 Foundational Courses (11 credits)
  - Seminar on STEM Education Research (0 credits)
  - 3 Research Methods and Statistics Electives Courses (9 credits)
- **Teaching Requirement/Pedagogy Courses** (2 courses, 4 credits)
- **Engineering and Computing Education Specialization Courses** (3 Courses, 9 credits)
- **Discipline-Specific Specialization** (5 courses, 15 credits)
- **Dissertation Research Credits** (15 credits)
- **Additional credits in the form of graduate research or other coursework** (12 credits)

Students are only eligible to enroll in dissertation research credits once they have completed 60 credits, passed their comprehensive exams, and have an approved Candidacy form on file. This is discussed further within later sections of the handbook. Prior to dissertation research credits, students may enroll in graduate research sections under the advisement of their Major Professor. The graduate research credits can go towards the additional 12 credits necessary to complete the program.

The subsequent sections go through the 48 credits of coursework students will take at the start of their

doctoral experience.

Core Courses

As part of the ECED Core Courses, students must complete the following four **foundational courses:**

- ✓ **EGS-6008 Foundations of Engineering and Computing Education Scholarship (3 credits)** - Introductory course providing a conceptual understanding of engineering and computing education through philosophical theories for research and practice. Theory-based methods will guide students through a historical context of engineering and computing education and its impact on current and future aspects of the fields.
- ✓ **EGN-6957 Professional Development in Engineering and Computing Education Research (2 credits) -** An exploration of professional development tools and techniques within engineering and computing education research and practice.
- ✓ **EGN-6900 Engineering and Computing Education Research Methods in Context (3 credits)** - Foundational course in research methods and practices of engineering and computing education researchers, focusing on research design decisions, research quality, ethical implications, and publishing. *Prerequisite: EDF-6481 or permission of instructor*
- ✓ **EGS-6057 Equity in Engineering and Computing Education: Research, Policy and Practice (3 credits)** - An analysis of diversity and inclusion through research, policy and practice within science, technology, engineering, and mathematics (STEM) education for the private and public sectors. The primary focus of this course will be engineering and computing education with topics in science, technology and math incorporated as applicable.

Students are required to register for a **seminar course,** preferably while enrolled in EGN-6957, and attend weekly seminars hosted by the STEM Transformation Institute.

- ✓ **EGN-6935 Seminar on STEM Education Research (0 credits)** - Weekly interactive and engaging presentations featuring faculty, students and guest speakers sharing research topics in science, technology, engineering, and mathematics (STEM) topics.

Students are required to complete **three research methods courses**. One course must be an educational/social science research methods survey course (e.g., EDF 6481 or SCE 7761). In conjunction with their Major Professor, students will choose two additional research methods courses:

- ✓ 1 Educational/Social Science research methods survey course (e.g. EDF 6481 or SCE 7761; full list held by SUCCEED)
- ✓ **2 Research methods electives**

To further students' development as inclusive and innovative educators, ECED has a teaching requirement that is fulfilled by completing **two pedagogy courses:**

- ✓ **EGS-6055: Foundations of Engineering and Computing Teaching and Learning (3 credits) -** Introduction to learning theory and inclusive, learner-centered, and evidence-based pedagogy and assessment in engineering and computing, using a human-centered

design approach to educational design.

- ✓ **EGN-6942 Mentored Teaching Practicum in Engineering and Computing Education (1 credits)** - Structured application of educational theories and pedagogy through classroom teaching experiences and weekly learning community meetings. Requires students to find a faculty teaching mentor. *Prerequisite: EGS-6055*

Students with teaching experience from previous graduate programs or students currently teaching may petition to waive the teaching requirement (EGN 6942 and in some instances, EGS 6055), in which case the courses could be replaced with alternate courses or experiences.

Waivers will be granted at the discretion of the Graduate Program Director.

Engineering and Computing Education Specialization Courses

Given the diversity of interests and potential future pathways within ECED, the curriculum holds space for exploration (e.g., research areas, methods, and disciplines) of the student's choosing. The specialization is a nine credit hours course requirement that was designed to (1) support students' doctoral research, (2) support students' preparation for post- graduation careers, and/or (3) support students' development as change agents in engineering and computing education. These courses are an opportunity to venture outside of SUCCEED, engineering/computing, and education, as desired. We recommend students consult with their Major Professor and explore the FIU course catalog to leverage this opportunity to its fullest.

Discipline-Specific Specialization

The purpose of these five courses (15 credits) from a discipline-specific specialization is to expand a student's options for teaching/mentoring post-graduation. Engineering and computer science departments in the United States require 18 credit hours of graduate coursework in that or a related discipline in order to teach courses in that department. As such, students must complete 15 credit hours from one of the specialization tracks listed below and the 3-credit hour pedagogy course to be eligible for those 18 credit hours. The graduate committee will consider petitions to combine tracks or to include a limited amount of coursework in STEM outside of engineering and computing fields, although we note that these alternatives may result in reduced career trajectories for teaching in engineering or computer science departments.

The list of courses is maintained by the department/school that houses the track and students can work with their Major Professor to design sub-specializations within these disciplines (e.g., aerospace engineering, biomechanics, sustainability). This requirement can be satisfied by an appropriate Master's degree from an accredited university.

- ✓ Biomedical Engineering
- ✓ Civil Engineering
- ✓ Computer Engineering
- ✓ Computer Science
- ✓ Data Science
- ✓ Electrical Engineering

- ✓ Engineering Management
- ✓ Environmental Engineering
- ✓ Information Technology
- ✓ Mechanical and Materials Engineering

Advanced Special Topics

Advanced Special Topics courses are similar to traditional classes, but are typically "temporary" in the sense that may be offered only a single time, or might be offered as a pilot for consideration of development as a future permanent class. Advanced Special Topics courses can be used to satisfy program requirements (e.g. ECED Concentration or Research Methods) – similar to permanent courses, students should discuss this with their advisor.

- ✓ **EGN 6939 Advanced Special Topics (1-3).** An advanced special topics course for PhD students to pursue and study areas in engineering or computing education at an advanced level that are otherwise not offered. The list of topics will be announced in advance for prospective students.

Independent Study, Internships and Cooperative Education Experiences

As part of a student's specialization, the ECED program includes opportunities for independent study, cooperative education, and internship experiences. Specifically, students may receive course credit for independent study and cooperative education experiences. These opportunities can provide critical hands-on and field experiences that can support a student's dissertation research as well as their preparation for the job market. Interested students should speak with their Major Professor about the appropriateness of these opportunities and timing for designing and participating in them.

- ✓ **EGN 6907 Independent Study (1-10 credits).** A variable credit independent study course for Ph.D. students to work on topics where standard courses cannot be offered. Topics must be related to engineering or computing education. The outcomes and goals of the course for the student must be approved by department.

The following additional stipulations apply to Independent Study courses:

- Independent Study experiences are designed and led by students. Typically, they are individual (i.e. a single student), but on occasion Instructors will meet with a small group of students who are focusing on the same topic. Instructors typically meet with students for approximately 1 hour per week (regardless of the number of credit hours). Typically, your total time commitment for Independent Study is approximately 40-45 hours per credit hour (across the semester). For example, if you signed up for 3 credit hours, you would spend about 1 hour/week meeting with the instructor, and an additional 7-8 hours/week working independently.
- Please ask for Instructor Permission before you enroll. Independent Study courses are typically not "counted" as part of the instructors' teaching load, so please keep in mind that instructors are doing additional work to help you succeed.
- To enroll in Independent Study, the student needs to create an Independent Study contract that is then signed by the student, the instructor, the student's advisor, and

the GPD. This should be done prior to enrolling in Independent Study credits and should ideally be created and signed before the semester begins, but will also be accepted during the first week of the semester. Contact the GPD for the contract template.

- Independent Study credits can be used to satisfy program requirements (e.g. ECED Specialization or Research Methods) – if the advisor and GPD agree that the proposed Independent Study reasonably satisfies the requirement.

- ✓ **EGN 6920 Cooperative Education in Engineering (1-3 credits).** A variable credit cooperative education in engineering course is for current Ph.D. students who have a position with an organization focused on their area of study. Topics must be related to engineering or computing education.

Transfer Credit

As stated in University Graduate School (UGS) policy (Number 380.085),

*Doctoral programs may accept up to **20%** of the required total coursework, subject to approval of the Program Director, of graduate credit earned from another institution beyond a bachelor's degree. An exception to the 20% limitation is made for courses contained within an earned master's or doctoral degree. For such courses, **the maximum is one credit fewer than half of the total credits required for the program.***

Therefore, the transfer credit policy breaks down as follows: The 20% requirement (15 credit hours) is for t*hose who have an incomplete Master's or Doctoral degree*. *Students who have earned a Master's degree* can apply to transfer up to 36 credits hours (Half of 75 required credits of coursework minus one). For *undergraduates who have taken graduate courses*, up to 12 credit hours of the graduate coursework (not applied to their undergraduate degree) can be transferred into ECED.

To be considered eligible, UGS outlines the following requirements for transfer courses:

- ✓ The student received a grade of 3.0 or better on a 4.0 scale.
- ✓ The course was taken at FIU or an accredited institution.
- ✓ The course must be relevant, as judged by the Graduate Program Committee, to the graduate program to which the student is accepted.
- ✓ The course must be listed on an official transcript sent to the University Graduate School Admissions Office by the institution where the course was taken.
- ✓ The date of completion will be no longer than 6 years or 9 years at the time of graduation with a master's or doctoral degree, respectively (NOTE: This requirement does not apply to credits earned as part of a completed graduate degree).

The course transfer process needs to occur before the student completes their Doctoral Degree and Application for Candidacy form, and the transfer credits will need to be approved by the Graduate Program Committee within ECED as part of this process. Therefore, within ECED, we recommend that students who are eligible to receive transfer credit speak with the Graduate Program Director during the application process as well as following admittance to prepare the necessary paperwork for approval of transfer credit. In addition, students should gather syllabi for the courses that they wish to

transfer and use the ECED Program of Study form to examine their transfer credit options.

Final notes from the UGS policy:

- ✓ *Waiver of the limit on the maximum number of credits that may be transferred requires the approval of the program director or chairperson of the degree granting program, the dean of the appropriate school or college and the dean of the University Graduate School.*
- ✓ *Waiver of any of the requirements for transfer courses (listed above) requires the approval of the program director or chairperson of the degree granting program, the dean of the appropriate school or college and the dean of the University Graduate School.*

Program Milestones and Example Timelines

The completion of the ECED curriculum is one component of the doctoral program. To achieve all of the outcomes of the program, doctoral students will also be required to:

- ✓ Select a **Major Professor** and assemble a **Dissertation Committee.**
- ✓ Successfully complete the **Comprehensive Exam**.
- ✓ After completion of the required coursework and the Comprehensive Exam, the student advances to Candidacy.
- ✓ Successfully present and submit a **Dissertation Proposal.**
- ✓ Successfully submit and present a **Dissertation** based upon original research in Engineering and/or Computing Education.

Lastly, to support each student's professional development, all students in the program will annually have to complete (1) a **Service and Professional Development Requirement** and (2) an **Evaluation and Mentoring Plan Review.**

The subsequent sections of the handbook discuss each component of the doctoral program in detail. We recognize that at the start of a graduate degree it can be challenging to know how and when one will complete each program requirement. Still, we recommend that students meet with their Major Professor early (and often) to discuss a potential plan of study based on their transfer credits, educational background, interests, and part-/full-time status. During these discussions, be sure to refer to the deadlines described in the subsequent sections as well as all UGS deadlines, which are based on a student's expected graduation. While every student's experience in ECED is and will be different, Appendix A includes three examples of plans of study to use as a starting point for discussion:

- Full-time students who are not transferring in graduate coursework
- Full-time students with a Master's degree/15 credits of Master's level coursework,
- Part-time students taking 6 credits each semester who are not transferring in any graduate coursework.

Doctoral students must complete their degree within nine years of first enrollment. Full-time students should aim to pass the Comprehensive Exam by the end of the seventh semester (excluding summers) in the program if they were admitted without a Master's degree or by the end of the fifth semester (excluding summers) if admitted with a Master's or the equivalent 15 credit hours. Part-time students

should aim to pass the Comprehensive Exam by the end of their fifth year, or as soon as possible depending on their pace for taking courses.

Dissertation (Advisory) Committee

Each graduate student will be required to form a dissertation committee in consultation with their Major Professor by the end of their second year in the Ph.D. program. However, we recommend that students work to form their committee sooner, as the committee can help provide input on course recommendations and opportunities for professional development. The dissertation committee will consist of at least four members, including the Major Professor. As a group, the basic responsibilities of the committee members will include:

- ✓ supervising research needs and academic performance,
- ✓ providing guidance for the student's research program,
- ✓ providing guidance on opportunities for learning and professional development
- ✓ administering the comprehensive examination,
- ✓ actively participating in the proposal and dissertation preparation process,
- ✓ attending annual (or more frequent) committee meetings, and
- ✓ administering and evaluating the proposal and dissertation defense.

The composition of this committee and the selection of a Major Professor are critical decisions within an ECED student's experience. To support ECED students' exploration of and selection of a Major Professor, the subsequent sections outline the first-year Interim Advising program, areas of consideration for selecting a Major Professor, and the process for selecting a dissertation committee.

Engaging in Interim Advising

At the completion of the admission process, incoming graduate students will be matched with an Interim Advisor. The purpose of Interim Advising is to provide students with an opportunity to meet and get to know SUCCEED Faculty before selecting a Major Professor. Interim Advisors will serve the role of Major Professor for a student's first two semesters, helping students acclimate at FIU, supporting the student as they register for courses, and in many cases, collaborating with them on research projects. They will also lead the first Annual Evaluation of the student's progress to be completed by the end of the Spring semester (see Annual Evaluation and Mentoring Plan section).

Interim Advising is about learning and engagement with the entire SUCCEED community. In addition, it is also a trial period that allows students to explore the possibility of working with one particular advisor before making the choice of a Major Professor. To support students' explorations over the course of the first semester, students will be expected to:

- ✓ Have a one-on-one meeting with SUCCEED faculty members
- ✓ Attend research meetings led by SUCCEED faculty members
- ✓ Engage in course (e.g., EGN 6957) and co-curricular activities that focus on getting to know the community and the diversity of advising relationships, and

- ✓ Participate in check-in meetings with the GPD and Senior Program Coordinator (through GPD Office Hours).

Beyond these opportunities, the GPD and Senior Program Coordinator will collaborate with the ECED students to co-design opportunities for peer mentoring and coaching. These activities, along with other formal and informal activities, will provide students with an opportunity to explore possible options for a Major Professor and help students get to know the larger SUCCEED community.

Matching with a Major Professor/Co-Major Professor

The Major Professor must be a member of the SUCCEED Graduate Faculty (tenure-track or tenured) and have Graduate Faculty status. You can check with the GPD or Senior Program Coordinator if you are not sure if a faculty member has Graduate Faculty Status. Students should select their Major Professor based on communication about and clear understanding of alignment between the student and the Major Professor's:

- work styles
- advising style as well as research and academic expectations
- research interests and expertise (e.g., topics, population, methods, and/or theory)

Other factors to consider include:

- student career goals and interests
- faculty funding availability

Second Semester of first year:	
January:	✓ learn about advisor matching from EGS 6957 and/or GPD office hours
	✓ check-in meeting with interim advisor
February:	✓ submit advisor matching form
	✓ graduate committee meets for matching

At the start of the second semester, students will meet with the GPD and Senior Program Coordinator to learn more about the process of advisor matching. The process has three parts: (1) Check-In meeting with the Interim Advisor, (2) Completion of Advisor Matching Form, and (3) Graduate Committee Matching. Part 1, the Check-In meeting, allows each student-Interim Advisor pairing to talk about how things are going as well as the evolution of the student's goals and needs. This meeting will take place in January to give students time to consider multiple advising alternatives. Part 2, the Advisor Matching Form, will be completed in February. Students will be asked to share their reflections on what they are looking for in a Major Professor, who they are interested in working with, and why. This form will be used in Part 3, the Graduate Committee Matching. During the matching process, the Graduate Program Committee will review the forms and create matches based on students' interest, funding availability, and faculty capacity. These matches will be reported to the students by the GPD and Senior Program Coordinator.

Considering Co-Major Professors. Students have the opportunity to select another faculty member to serve as a co- major professor. If there is a co-major professor, students should ensure the co-major professor is listed in this role on the Dissertation Committee form. Additionally, co-major professors must have Graduate Faculty status. Students interested in having a co-major professor should discuss this with their Major Professor and the Graduate Program Director.

Switching Major Professors. While we aim for each advisor-advisee relationship to be successful, we recognize that there may be situations where a student may need to switch Major Professors. The

process of switching Major Professors is specific to each case and is dependent on a variety of factors, including, but not limited to, funding circumstances, timing, occurrences motivating the switch, etc. Nevertheless, there are certain steps that will need to be taken to facilitate a switch. If a student is considering switching Major Professors, the first step is to set up a meeting with the GPD to discuss the situation and possible next steps. One of these next steps may include a meeting between the GPD, the Major Professor (and any co-Major Professor), and the student to identify an approach for moving forward. In addition, the student may need to work with the GPD and another SUCCEED faculty member to determine a new Major Professor. Please note that the SUCCEED faculty member who will serve as the new Major Professor will need to provide their consent to serve in that role and clarify if they intend to provide assistantship funding (if necessary).

In the event that a student switches their Major Professor and their Dissertation Committee form has been fully approved in the electronic systems, the student will need to complete the Appointment of Revised Dissertation Committee D-1r Form and submit it to the GPD for approval. The student should ensure that the faculty member has given their consent to serve in the capacity of their Major Professor and consulted with established committee members prior to submission of the form.

Selecting Dissertation Committee Members

The student's Major Professor will serve as the chair of their Dissertation Committee, and the student should collaborate with their Major Professor in identifying faculty members who might serve on the committee. This committee plays a critical role as advisors in the doctoral process, evaluators, and mentors. When considering who to include in one's committee, students may want to reflect on (1) their research interests for their dissertation and individuals who could provide expertise in specific topics, theories and/or methods and (2) their career interests and individuals who may be able to help them build their network and/or craft their research in a way that would support their career goals.

The dissertation committee will be comprised of at least four members, at least three of whom hold FIU Graduate Faculty (GF) status. At least two members of a student's committee must be SUCCEED faculty and at least one member must come from outside SUCCEED. Students are encouraged to meet with all SUCCEED faculty before making the decision about which faculty to include on their committee.

PhD Committee (at least 4 people)

- ✓ Major Professor
- ✓ At least one other SUCCEED faculty member
- ✓ At least one person outside SUCCEED
- ✓ Optional: someone outside FIU

Select people with expertise related to your proposed:

- ✓ Methods
- ✓ Theory/ies
- ✓ Topic/Practical Application
- ✓ Context/Population

Committee members that are not FIU faculty will complete the Non-FIU Graduate Faculty form along with the Dissertation Committee Form. Non-FIU Graduate Faculty members must submit a CV, a brief statement of expertise related to the student's project, and complete the required Commitment Form for Non-FIU Committee Members. Non-FIU Graduate Faculty must be ***approved*** by the UGS.

Graduate students are responsible for forming their dissertation committee and maintaining communication about their progress. The committee is appointed via the Dissertation Committee

online form and subject to approval by the Major Professor, GPD, and University Graduate School. While we expect SUCCEED students to formally establish their committees via the Dissertation Committee form by the end of the second year, we recommend that students consider *informally* (i.e. without completing the online form) forming a tentative committee by the end of the first year or beginning of the second year in order to have an expanded support network earlier in the program.

Changing Dissertation Committee Members

Students who wish to change dissertation committee members should complete the Appointment of Revised Dissertation Committee D-1r Form and submit it to the GPD for approval. The student should ensure that the faculty member has given their consent to serve in the capacity of their dissertation committee member prior to submission of the form.

Rights & Responsibilities of the Student

The University has developed policies and procedures on the rights and responsibilities of students and a code of conduct assuring that these rights can be freely exercised without interference or infringement by others. The code of conduct, academic misconduct policies, student grievance procedures and policies on student records are reported in detail in the University publication Rights and Responsibilities of Students. Additionally, all administrative procedures and deadlines must be met, whether they are specifically mentioned in this document. Students must operate within the rules and guidelines of the Graduate Program in Engineering and Computing Education Graduate Student Handbook, the FIU Graduate Catalog and the FIU Regulations for Thesis and Dissertation Preparation Manual. Accordingly, graduate students should obtain copies of these publications from the University Graduate School website: http://gradschool.fiu.edu/ and become familiar with their contents. Students should pay attention to the deadlines posted annually in the University Academic Calendar.

Responsibilities of Major Professor/Co-Major Professor

While advising styles differ across faculty members, there are responsibilities that are required of every Major Professor:

- ✓ Be accessible to the student, which includes providing feedback to student in a timely manner and annually as part of the review process
- ✓ Actively support student's holistic development as an independent scholar, change agent, and leader
- ✓ Supervise, encourage, and support the student in their dissertation development and their preparation for their post-graduation career
- ✓ Advise students concerning the ethics of the profession, encourage the practice of research and publication consistent with ethical standards, and help students navigate ethical questions throughout their projects
- ✓ Collaborate with the committee to evaluate and support the student throughout the proposal and dissertation development process
- ✓ Connect student with resources within and outside FIU to support their research and professional goals
- ✓ Be objective in the evaluation of research and academic performance and communicate that

evaluation fully and honestly to the students
- ✓ Be open to feedback from the student to improve the advisor-advisee relationship
- ✓ Be a model of equitable and inclusive behavior towards students, faculty, and staff within and outside of the University

Responsibility of Dissertation Committee Members

Committee members work together to provide formative and summative evaluation throughout the dissertation development process. In particular, they are expected to:

- ✓ Be accessible to the student, especially for annual meetings, proposal presentation, and the final dissertation defense.
- ✓ Individually and/or collectively provide feedback to students in a timely manner and annually as part of the review process
- ✓ Actively participate in the comprehensive exam process
- ✓ Be objective in the evaluation of research and academic performance and communicate that evaluation fully and honestly to the students
- ✓ Actively participate in the student's development of a scholarly dissertation
- ✓ Actively participate in the dissertation proposal and defense presentations and provide written feedback on the dissertation documents, as appropriate
- ✓ Complete the formal evaluation of the comprehensive exam, proposal, and final dissertation
- ✓ Support the student's preparation for their post-graduation career (e.g., help them build their network within the field, connect them with appropriate resources)

Dissertation Forms

Students are responsible for ensuring that all completed forms are received by the University Graduate School (UGS) on time and that all deadlines have been met. For UGS deadlines please refer to https://gradschool.fiu.edu/calendar-deadlines/. To access online dissertation milestone forms and monitor the status of their submitted forms, students must: (1) log in to https://my.fiu.edu/ and select your Student Environment, (2) navigate the to the Tasks tile, (3) navigate to the To Do List section. To begin a new submission, click on the Pending Milestone you wish to initiate. each dissertation milestone will have its status reflected at the top of the page. More information (with screenshots) is available in the Online Dissertation Milestones Training Guide for Doctoral Students.

Below is a list of the required UGS dissertation forms for completion of the doctoral program:

- ✓ **Appointment of Dissertation Committee**
  To be submitted no later than four semesters before the anticipated graduation term to formally establish the dissertation committee. A 250-word abstract of your proposed research project and statements about the expertise of proposed committee members (in relation to the proposed research project) are required.

Tip:
If you include committee members from outside of FIU, it will take ~4 weeks longer to process your Appointment of Dissertation Committee form.

  - **Non-FIU Commitment Form:** To be used when you plan to include committee members

from outside of FIU.

- **D1r Form: Appointment of Revised Dissertation Committee**
  To be completed as soon as a revised committee is formed. This form is currently completed as a PDF; it will be integrated to the Online Dissertation Milestone system in Phase 2.

✓ **Program for Doctoral Degree and Application for Candidacy**
To be submitted after finishing coursework, as soon as results of candidacy examination's results are available and before registering for dissertations credits. Due at UGS five days prior to the first day of classes in the term in which dissertation credits enrollment will commence. May be submitted before, after, or concurrently with the Doctoral Dissertation Proposal form.

- You cannot register for dissertation credits until your candidacy form has been approved by UGS.
- Once your candidacy form has been approved, you should only register for 3 credits of dissertation credits/semester. Any additional credits/courses will not be covered by tuition waivers. However, in your final semester you may register for additional dissertation credits if needed to reach the required 15 credits of dissertation credits.

✓ **Doctoral Dissertation Proposal**
Submit a copy of proposal and IRB approval memo(s) no later than three semesters before the anticipated graduation term. UGS will also check that the required Responsible Conduct of Research Certification has been completed.

✓ **Preliminary Approval of Dissertation and Request for Oral Defense**
Must be submitted to UGS three weeks before the date of the defense or by the deadline whichever date is the earliest. Click Here to Learn about the Request for Oral Request Process: https://gradschool.fiu.edu/oraldefensesubmission/

NOTE: This form must be submitted to the Dean's Office in the College of Engineering and Computing ***no later than one week prior to the deadline for UGS.*** Prior to the submission of the Preliminary Approval of Dissertation and Request for Oral Defense to the Dean's office, students must also give their committee at least two weeks to review their dissertation. Major Professors, committee members, and the GPD/Director must act on the form within two weeks of receiving it, whether with an electronic signature or an explanation that the dissertation is not ready.

✓ **Final Electronic Dissertation Approval**
To be submitted after successful dissertation defense and after all revisions to the dissertation have been finished. This milestone includes:

- Final written dissertation for preservation in the University's Digital Commons.
- For SACS accreditation, a full version of the Curriculum Vitae must be provided (this is different from the 2-page VITA).
- A Certificate of Completion from Survey of Earned Doctorates is required. Complete this at https://sed-ncses.org/login.aspx.

Click Here to Learn about the Final ETD Process: https://gradschool.fiu.edu/the-final-etd-process/

Ph.D. Milestones and Benchmarks

Service and Professional Development Requirement

A critical component of SUCCEED's mission is to cultivate leaders who are prepared for diverse career trajectories. Part of that development, in alignment with our values of *community and collaboration*, will be supported by the **service and professional development requirement** for our students. Each year, all doctoral students will be asked to participate in significant service work within SUCCEED (which includes the Center for Diversity and Student Success in Engineering and Computing, CD-SSEC) and/or STEM Transformation Institute. This service requirement can be fulfilled in many ways such as assisting with SUCCEED and CD-SSEC events, leading the STEM Transformation Institute student groups, or volunteering to oversee the FIU/SUCCEED booth during a national conference. Full-time students are expected to take **a leadership or organizing role in at least one major service event or activity** (e.g., grad committee membership, organizing grad socials), and to participate in a number of departmental events. Part-time students are expected to participate in a number of departmental events, any leadership or organizing roles are optional and not required.

In addition, all doctoral students should participate in **at least one professional development event/workshop** each year. Many are offered around FIU and within the national societies for engineering and computing education. These events and workshops can support a student's development as a researcher, as an educator, in preparation for the job market, and/or as a leader. Please speak with your Major Professor, the Graduate Program Director, and/or the SUCCEED program coordinators to learn more about possible professional development opportunities.

Each year, students will record their service work and professional development participation in their annual evaluation and mentoring plan. See subsequent section for more information. Appendix B contains a worksheet for tracking service and professional development activities throughout the year to be discussed during each student's annual evaluation.

Annual Evaluation and Mentoring Plan

To facilitate the success and development of every Ph.D. student at FIU, the University has designed an annual evaluation and mentoring plan procedure for completion each year. Within the Engineering and Computing Education program, all doctoral students will be required to meet with their Major Professor and provide an update on their progress from the prior year and plan for the next academic year **at the end of each spring semester (Mid to Late April).**

There are two parts to this Annual Evaluation and Mentoring Plan. The first part is mandated by FIU and is to be completed within your my.fiu.edu portal. This part is only required for doctoral students (1) who have completed at least 18 credit hours of courses and (2) who do not have an approved Preliminary Approval of Dissertation and Request for Oral Defense form. The second part is SUCCEED-specific and has to be completed by all doctoral students each year of the program.

The purpose of these plans, reflections, and evaluations are to help YOU as the student not only check-in as to your progress towards your doctoral and career goals, but also to enable your Major Professor and Dissertation Committee to better support you as you work towards your goals the following year. If you have created an Individual Development Plan (IDP) or similar reflection documents, please feel free to incorporate them into this process.

To complete each part of the Annual Evaluation and Mentoring plan (the FIU-specific and the SUCCEED-specific parts), students will need to:

- Complete the **online Doctoral Student Annual Evaluation and Mentoring Plan** within their my.fiu.edu accounts. *[Only if you are completing or have completed 18 credit hours and do not have an approved Final Electronic Dissertation Approval form.]*
- Send an email to your Major Professor, the Graduate Program Director, and the Senior Program Coordinator with the **three SUCCEED-specific attachments** described below. *[Every year]*
- **Schedule a meeting with your Major Professor AND, if you have formed your committee either informally or through an approved Dissertation Committee form, your Dissertation Committee**, to complete the process. *[Every year]*

This meeting should take place **no later than April 30th** each year – so that your plan has the appropriate time to be submitted to UGS by the late May deadline stated on the UGS website. UGS will place a fall semester enrollment hold on students who do not have an **approved** (including the Dean of UGS approval) Annual Evaluation and Mentoring Plan.
Accordingly, it is important to meet all UGS deadlines.

A workflow of the tasks is presented at the end of this section.

FIU Annual Review Form (online at my.fiu.edu)

This form will ask you to think about your accomplishments for the year (i.e., milestones completed, publications/presentations, awards, fellowships, leadership positions, service participation, professional development), your performance goals for the subsequent year, and any topics you wish to discuss during your meeting with your Major Professor and, when appropriate, your dissertation committee.

For the ***performance goals*** section, we ask that you think about *at least ONE goal* in each of the following four categories:

- Courses/Program Milestones
- Career Development
- Researcher Development (includes research)
- Professional Skills (e.g., work-life balance, communication, leadership, collaboration, time management)

Additional goals are welcome. Again, this instance is another where if you have an existing IDP, you should incorporate what you have developed on that document so far into the Annual Review form.

SUCCEED Annual Evaluation and Mentoring Plan Documents

There are three specific documents that you will need to share with your Major Professor, the Graduate Program Director, and the Senior Program Coordinator each year. You may format these documents as you prefer (e.g., using the IDP format for the reflection document).

Annual Reflection

In a 1-2-page attachment distributed by the GPD, ECED we would like you to reflect on the past year and tell us what went well and what could have gone better. The most recent version of ECED annual evaluation reflection is included in Appendix C, but we will update it and send out the current version each year.

Updated Copy of CV/Resume

Provide an updated copy of your CV or Resume, as relevant depending on which career route you are currently planning to pursue following graduation. Please highlight items that have been added since the previous Annual Evaluation in a different color (using the "Track Changes" feature is also fine) to make it easy to identify updates from the past year.

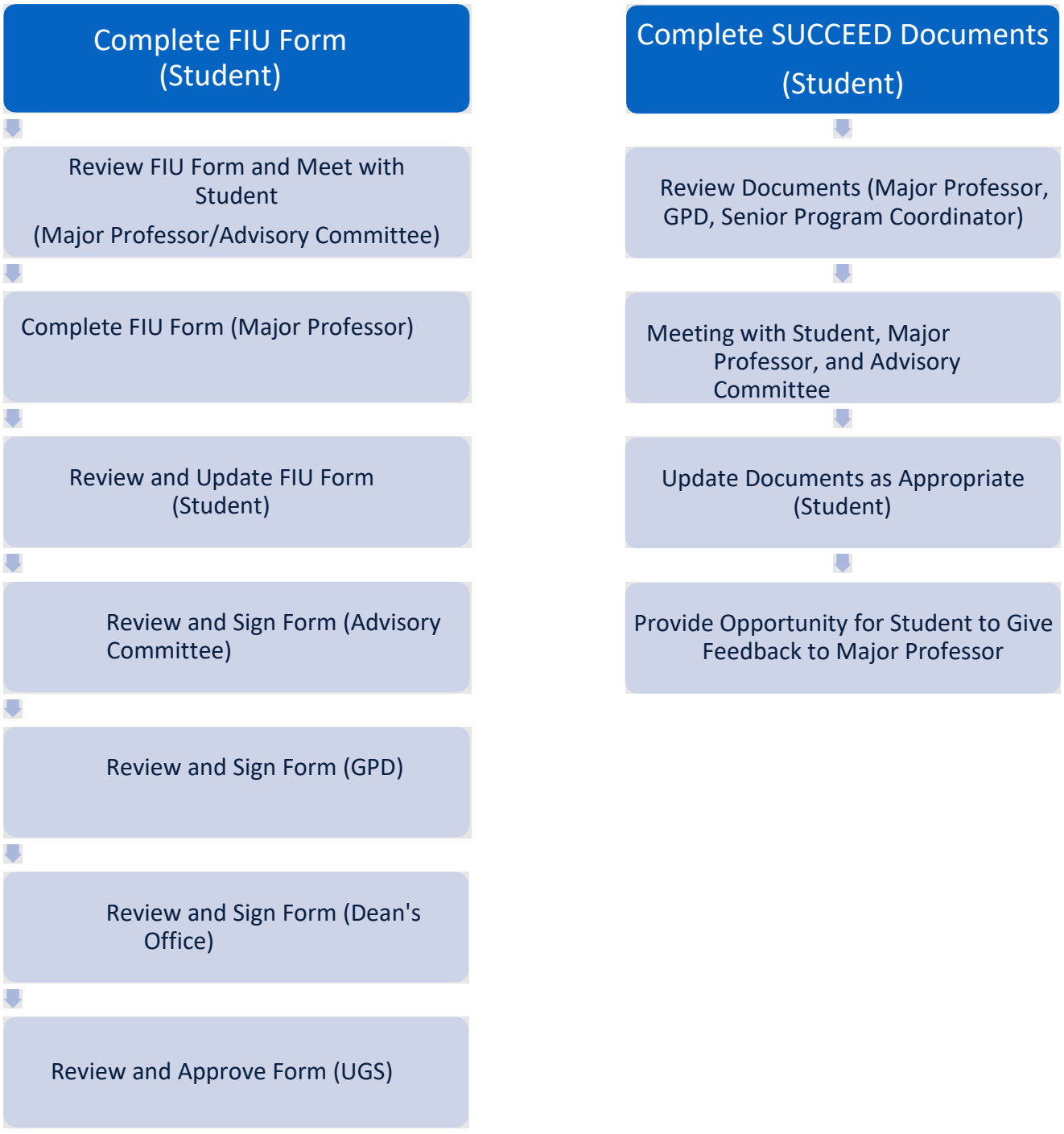
Service and Professional Development Component.

See Appendix B for the document.

Updated ECED Program of Study

Each year, you should review your progress towards completing the necessary credits for the program with your Major Professor. Therefore, you should submit the most updated copy of the ECED Program of Study along with the other documents. See Appendix A for the document.

Annual Evaluation and Mentoring Plan Workflow



Notes for the Major Professor

For each doctoral student, you will need to:

- Complete the items on the Annual Review Form (my.fiu.edu)
  - If applicable, include language in your review regarding the student's preparation for upcoming milestones (i.e., comprehensive exams, proposal defense, dissertation defense)

- Review the SUCCEED Annual Reflection, the CV/Resume, and the ECED Program of Study
  - Provide feedback on the CV/Resume as appropriate
- Meet with student (with the Dissertation Committee, as appropriate) to discuss progress and goals. At this meeting, shape goals as appropriate for the following academic year. Work with your student to co-develop their goals for the following academic year.
- Have a separate meeting with the student to give them an opportunity to debrief the committee meeting and to provide you with feedback.

Comprehensive Examination

The Comprehensive Examination serves the two important purposes of a) evaluation of student preparedness for doctoral study and b) continual assessment of the core courses and the program as a whole. This examination assesses a student's understanding of the field of engineering and computing education and the major theoretical concepts, applied issues, and means of inquiry for undertaking research in the field. As such it serves as a critical precursor to the dissertation proposal. The structure of the examination seeks to 1) incorporate a student's research interests, 2) support their preparation for their proposal development, and 3) provide multiple mediums for sharing knowledge. **The comprehensive exam includes both written and oral components that must be completed over a five to seven-week period.**

ECED students are eligible to take their comprehensive exam when the following conditions have been met:

- ✓ They have completed at least 27 engineering and computing education and/or education research credits. *Note: this may change as UGS policy changes.*
- ✓ They have assembled a dissertation committee and the Appointment of Dissertation Committee has been fully approved.
- ✓ The student and their Major Professor/co-Major Professors agree that the student is prepared for their comprehensive exams.

The student may consult their Major Professor/co-Major Professors and GPD to determine that the student is eligible will complete the comprehensive examination. Upon determining eligibility, the student should set up a meeting with their Advisory/Dissertation Committee to discuss possible topic areas for their examination as well as the schedule for the exam, including the period when students are developing written responses and the date and time of the oral presentation. *When the exam schedule is set, the student must notify the Graduate Program Director of the schedule.*

The next paragraphs communicate the current guidelines for the comprehensive examination. However, as more students complete their comprehensive exams, we will be revising these guidelines for additional clarity.

The examination and the exam schedule are comprised of the following:

Step	Who	Duration
Development of Exam Prompts	Advisory Committee	1 week
Development of Written Responses	Student	2-4 weeks*
Review of Written Responses	Advisory Committee	2 weeks
Preparation for Oral Presentation of Responses	Student	
Complete Revise & Resubmit (if required)	Student	Max. 6 weeks

*Defined by committee and student

1. **Development of Exam Prompts –** Following the committee meeting, the Advisory Committee will have one week to prepare three exam prompts based on the discussion with the student about their interest areas. These exam prompts must include:
   a. A theory-focused prompt
   b. A synthesis/literature review prompt
   c. A third artifact that is relevant to the student's research interests (e.g., a critical review of 1 or 2 existing papers, resubmission of a term paper from an ECED course).

   The first two responses must include a discussion of research methods. The Major Professor will share those prompts as well as any requirements for page limits with the student, the Advisory Committee, and the Graduate Program Director via email at the beginning of the student's exam period (i.e. the 2-4 week period identified for the student to develop their written responses).

2. **Development of Written Responses –** The student will have two to four weeks to craft responses to each of the exam components. The exact timing for the submission must be decided by the committee in consultation with the student as part of the exam schedule. Extensions on response submissions will be granted under extenuating circumstances (i.e., exceptional short-term events outside of a student's control that may have a negative impact upon their ability to take or complete the exam) and requires the approval of the Major Professor and the Graduate Program Director. Extensions should be discussed with the committee but do not require their approval.

   Given the individual- nature of this examination, the student can consult whatever resources (e.g., class notes, books, papers, the internet) they choose EXCEPT other people. The student, however, may utilize the Center for Excellence in Writing and ask clarifying questions to the Advisory Committee members and the Graduate Program Director.

   The student should use APA format in their submissions and the final submissions should be sent no later than the predetermined deadline via email to the committee.

3. **Committee Review of Written Responses –** The Advisory Committee will have two weeks to review the three exam components. The Advisory Committee should provide written feedback that can be shared with the students.

4. **Student Presentation of Responses –** Following the submission of the written responses, the student should prepare for the Oral portion of the exam. The Advisory Committee and student should allot two

hours for this meeting. The student will need to prepare a 30–45-minute presentation (10-15 minutes per exam component) on their responses.

5. **Oral Presentation and Evaluation of Responses -** Following the student's presentation, the Advisory Committee and student will discuss each response, with the committee posing additional questions and providing feedback.

   At the conclusion of the discussion, the student will be asked to leave the meeting while the Advisory Committee determines a final assessment on each response. Advisory Committee members will discuss their individual assessments and come to a final rating for each prompt:

   - ✓ PASS – The response demonstrates the student's deep understanding of the prompt area and shows preparedness for progressing to the Dissertation Proposal.
   - ✓ REVISE & RESUBMIT – The response demonstrates an overall understanding of the prompt area, with a small number of areas that require improvement prior to receiving a PASS rating.
   - ✓ RETAKE REQUIRED – The response demonstrates minimal understanding of the prompt area, and significant changes would be necessary with the response to warrant a PASS rating. Failing to respond to a question results in an automatic RETAKE REQUIRED rating.

   The student will then be invited back into the meeting to discuss the final ratings and appropriate next steps. Following this meeting, the Major Professor needs to share the ratings and rubrics with the Student and the Graduate Program Director via email.

   Making Sense of the Evaluation Ratings

   Passing the Comprehensive Exam requires a rating of a PASS on all three responses.

   If the student receives a REVISE & RESUBMIT rating on any response, the committee will develop a resubmission plan with the student. This resubmission plan could include an updated written and/or oral response. The resubmission plan should take place within 6 weeks of the original oral presentation. If the student does not complete the resubmission process or the resubmission does not result in a PASS rating on that question, their rating will change to a RETAKE REQUIRED.

   If the student receives a RETAKE REQUIRED on any response, they will need to wait until the subsequent semester to retake ONLY the particular prompt area(s). At that time, the student will receive a new exam prompt for that area or those areas. For students who do not pass this second attempt on that prompt area, their case will be reviewed by the Graduate Program Committee, and they may be ineligible for a Doctoral degree within SUCCEED.

   Outcomes of the comprehensive examination process will not be subject to appeal, except where it is the consensus of your Advisory Committee that procedures set forth were not followed.

Dissertation

The dissertation serves as the culminating milestone in a student's doctoral experience. Through the document and associated presentation, the student demonstrates their ability to conduct and direct research in engineering or computing education. In addition, the dissertation may also fulfill additional outcomes of the program, if the project seeks to (1) address critical issues in equity, diversity, and inclusion within engineering and computing education and/or (2) design and assess inclusive, innovative, and effective educational experiences in engineering, computing, and/or engineering and computing education.

The format of the dissertation is determined through discussions between the student and their committee and can take one of two forms:

1. ***Traditional/ Book Chapter Format –*** This format considers the dissertation research as a single study that may include multiple phases or parts. Like chapters in a book, the dissertation chapters would capture the motivation, literature argument, research design and theory, results and discussion, future work, implications, and general conclusions of a comprehensive single study. The exact chapter titles and the number of chapters should be defined by the student and their Major Professor, in collaboration with the committee.

2. ***2-3 Manuscripts Format –*** This format includes two to three scholarly manuscripts written in a manner suitable for publication in appropriate venues (could include journals and/or conferences). Possible venues could also be outside of engineering and computing education if aligned with dissertation and career goals (e.g., education or other social science journals, engineering or computer science journals). This structure enables the student to prepare and present their graduate work in a format that facilitates publication. While this format is often called a three-manuscript format, the decision to scope the number of manuscripts should be made in consultation with the committee and in recognition that some manuscripts will differ in length and intensiveness. In this format, the middle 2-3 chapters would be the scholarly manuscript text itself. The manuscript could be a version that is fully published in a journal, under review by a journal, or a conference paper or recent draft created for the dissertation. If the manuscript was coauthored, please include a note as the first page of the chapter disclosing that fact and about the authorship contributions of the student candidate. Typically, the student should be the first author, conduct the primary research activities, and author of most of the sections of the paper. In addition to these 2-3 manuscript chapters, please add two additional chapters: (1) an introduction chapter that defines the objectives and questions within all manuscripts and links those manuscripts together and (2) a conclusion chapter that discusses future work and the overall implications of the research.

The final document at the time of the Preliminary Approval of Dissertation and Request for Oral Defense electronic form submission should follow the stylistic guidelines defined by UGS. See

Dissertation Defense section.

We recommend that students and their committees finalize the format of the dissertation in advance of or at the time of the proposal to help shape the dissertation research and prepare for the dissertation document such that it is most helpful to the students and the project.

Dissertation Proposal

To initiate the research effort, the student is required to prepare a research proposal that describes the background, purpose, and methods of the research, the outcomes anticipated, and the expected contribution to the field. This proposal provides an opportunity for the student to demonstrate their abilities to:

- ✓ Define research goals and/or questions,
- ✓ Deeply examine theory and previous work relevant to that research area,
- ✓ Scope and plan the work leading to the completion of the project,
- ✓ Identify ethical and appropriate methods for responding to the goals and questions, and
- ✓ Describe the work in accessible and professional style.

The research proposal structure is designed to enable flexibility given the type of project proposed by the student, but also align with the objectives defined previously. In particular, students will work with their committee to define ***two to three chapters*** that describe the:

1. *Motivation* – Why is the research project important? How might it contribute to engineering and computing education?
2. *Literature argument* – What work has previously been done in this area? Where will the project be situated in the literature once completed? How will the project enhance and/or shape the literature?
3. *Framework (theoretical or conceptual, as appropriate)* – How does a particular theory or combination of theories or concepts help the student frame and conduct the project?
4. *Research design* – How will the study be conducted? How will the student ensure research quality, validity, and/or reliability as appropriate? What is the project timeline?

The student may add appendices to this proposal as needed to share preliminary research instrument designs or findings.

Over the course of proposal development and the subsequent dissertation research, SUCCEED faculty highly recommend that students share details of the research plans with their committee. For example, students may consider meeting individually with members of their committee before the proposal defense to receive feedback on a shorter version (e.g., the five-page UGS version or a two-page project summary).

The subsequent sections outline the procedures for the proposal and dissertation defenses in more detail.

Proposal Defense

The proposal defense is typically conducted when the student has completed all required and elective coursework so that the student can focus on the dissertation following the completion of their defense.

SUCCEED requires the submission of two to three chapters that outline the research to be conducted as well as an oral defense of the proposal. In addition, an abbreviated, 5-page proposal is required by

the University Graduate School (UGS) along with a copy of Responsible Conduct of Research (RCR) Completion Report and Institutional Review Board (IRB) approval forms that are submitted with the electronic Doctoral Dissertation Proposal form. The student may choose to work on a draft of the 5-page proposal in advance of the oral defense but may also choose to wait until the oral defense has been completed to craft the UGS version. Students should monitor all UGS deadlines and speak with their Major Professor about a plan for completing all of the UGS Doctoral Dissertation Proposal requirements.

Dissertation Proposal and Defense Steps

1. **Initial Proposal Preparation**: The student, Major Professor, and the Advisory Committee collaborate to determine the appropriate format for the final dissertation and for the proposal. Ultimately, the Major Professor is responsible for guiding the process. Some Major Professors prefer Advisory Committee members to work closely together throughout the entire proposal development process. Other Major Professors work closely with the student throughout much of the process, interspersing Advisory Committee members' feedback and support as needed and then including the Advisory Committee members more extensively towards the end of the process.

   Recommended Practice: *SUCCEED highly recommends that the student meets one-on-one with all Advisory Committee members at least once prior to submitting the proposal to the Advisory Committee.*

2. **RCR Training Modules and Certificates:** For the Graduate School and the University IRB, to conduct research, students must participate in training to improve research integrity. Students are responsible for securing and keeping evidence of earning the necessary certification to be submitted with the Doctoral Dissertation Proposal form. This evidence is provided in the form of a completion certificate presented at the end of the modules. The student must print out the certificates. FIU provides the CITI Course in the Responsible Conduct of Research (RCR) section, which is designed to be used by institutions or organizations. Go to the UGS website at http://research.fiu.edu/rcr/training/and follow directions to secure this training.

3. **Submission of Proposal to Committee and Oral Defense Scheduling:** Once the Major Professor deems the proposal ready for the Advisory Committee's review, the student should schedule the proposal defense. The student may then submit the proposal to the Advisory Committee members and allow them time to review the document prior to the defense.

   Note: The submission timeline decision is made on an individual student basis, but Advisory Committee members must be allowed at least two weeks to review the proposal document.

   Recommended Practice*: The proposal defense should be scheduled two to three weeks after the Advisory Committee receives the proposal and a two-hour time slot should be scheduled.*

4. **The Proposal Oral Defense Announcement:** Once the oral defense is scheduled, the student needs to email the title of the proposal as well as the date/time/location of the defense to the Senior Program Coordinator and Graduate Program Director. This information will be shared with

SUCCEED and STEM TI doctoral students.

5. **Committee Initial Review/Feedback:** The committee may share feedback on the proposal with the student in advance of the oral defense, but it is not required. The committee will, however, share feedback on the proposal at the time of the defense.

6. **The Dissertation Proposal Oral Defense**: The student prepares a 25–30-minute presentation of the dissertation proposal with the guidance of their Major Professor. This presentation will only be open to the committee, the Graduate Program Director, the Senior Program Coordinator and doctoral students from SUCCEED and STEM TI. The student can invite additional faculty, students, or outside guests if they wish. Following the presentation, the Major Professor will welcome questions from the audience members and the committee. Then, the Major Professor will request that all non-committee audience members applaud the presenting student and leave the presentation. At this point, the committee may ask additional questions and discuss particular details of the proposal. Shortly thereafter, the student will be asked to step out of the room while the committee discusses their evaluation and makes a recommendation for moving forward with the project. Finally, the student will return to the room to discuss the evaluation and recommendation with the committee.

   Recommended Practice: *Students may consider practicing their presentation at the STEM TI Research Meetings and in their research group meetings. Students may also choose to present their proposal publicly at a later time within SUCCEED or STEM TI for broader community input.*

7. **Post-Defense Revision(s):** After the defense, the Major Professor and the student work to implement the suggestions of the committee and/or others. The revised version may or may not need to be sent back to the committee for their review.

8. **UGS Five-Page Proposal Summary:** Students are also required to prepare a five-page proposal summary for submission with the Doctoral Dissertation Proposal form. This can be done prior to, at the same time as the research proposal development, or after the proposal defense. Please refer to UGS guidelines for the formatting and structural requirements for this proposal summary:)

9. **IRB Approval:** If IRB is not already in place for the dissertation study, once major components of proposal have been approved, the student applies for IRB approval/exemption. Also, necessary approval(s) from any research sites must be obtained. (Note: Necessary PHRP and RCR training modules are to be done earlier in the process. IRB documents should be completed as early as possible and should be completed prior to this step, if possible.) IRB guidelines, procedures and forms can be found at http://research.fiu.edu/irb/. If an existing IRB is in place for the dissertation study, it should be modified to note that it is part of a dissertation and make any adjustments to the protocol.

   Recommended Practice*: IRB can take more than two weeks to approve a study protocol. Start the IRB process before the proposal defense. If the student needs to make changes*

following the defense, they can submit an amendment, which has a faster turnaround time.

10. **Submission of the Doctoral Dissertation Proposal form:** The student uploads the final 5-page proposal summary along with IRB approval and RCR certificate documentation in the online Dissertation Activity system and submits the Doctoral Dissertation Proposal form. See https://gradschool.fiu.edu/wp-content/uploads/2022/06/DoctoralStudentMilestoneInstructionsGuide2022.pdf for more information on the electronic form submission process.

11. **UGS Approval/Data Collection Begins:** UGS provides final approval to begin the dissertation research. Students can check the status of their Doctoral Dissertation Proposal approval in the my.fiu.edu portal. Upon notification of UGS approval, data collection may now begin under guidance of the Major Professor.

Dissertation Research, Document and Defense

Following the research proposal, it is time to do the research!

Once a student advances to candidacy, Dissertation Research credits become part of the discussion. In particular, the now Ph.D. Candidate (from this point on, the student will be referred to as a candidate!!!) must be continuously enrolled in at least three Dissertation Research credits each term including summer term until they graduate. Candidates will receive In Progress (IP) grades for Dissertation Research until the final term. Grades will be changed from IP to Pass (P) as soon as the candidate successfully defends the dissertation, and the Major Professor files a grade of P for all the Dissertation Research credits.

As Candidates conduct their dissertation research, they should (1) meet with their Advisory Committee to discuss research progress (this could include individual meetings) and (2) continue to work on their dissertation document using the format decided on at the time of the proposal. Please note the final dissertation format (book chapter or 2-3 manuscript structure) must conform to the format outlined in the Regulations for Thesis and Dissertation Preparation Manual available to students online from the Graduate School (http://gradschool.fiu.edu/documents/Graduate_Packet_For_Dissertations.pdf).

This section defines the steps for completing the dissertation defense. **It is critically important that students keep in mind all deadlines (UGS, CEC, and SUCCEED)!** A completed Preliminary Approval of Dissertation and Request for Oral Defense form must be submitted through the online Milestone Activity system **5 weeks** before the defense date (the College deadline is 4 weeks before the defense and the UGS deadline is 3 weeks before the defense or the UGS deadline – whichever is earlier). If these deadlines are not met, the student will need to reschedule their defense and may need to enroll in an additional semester.

Scheduling the Defense

5+ weeks prior	submit the Request for Defense form
4 weeks prior	College deadline for reviewing the form
3+ weeks prior	UGS deadline
	Defense!

Documents to be included with the Preliminary Approval of Dissertation and Request for Oral Defense form that is submitted at least 5 weeks prior to the Dissertation Defense:

- ✓ Near-final draft of dissertation
- ✓ Dissertation Defense Announcement
- ✓ Originality Report from Turnitin (or other plagiarism detection check)

1. **Submission of Near-final Dissertation Draft to GPD and Advisory Committee**: When deemed appropriate by the Major Professor, a digital copy of the dissertation is submitted to the GPD. In addition, paper and/or digital copies are submitted to the committee for review, as requested by committee members. The Major Professor can determine whether the GPD and Advisory Committee reviews occur simultaneously or at different times. Candidates MUST give their Advisory Committee at least two weeks to review their dissertation and the Advisory Committee members MUST return drafts (with comments/corrections) to the candidate within two weeks of receiving them. Once the Advisory Committee approves this initial draft and a defense is scheduled (see point 3), the Preliminary Approval of Dissertation and Request for Oral Defense form is submitted to the GPD and subsequently the Dean's Office.

2. **Originality check:** The candidate's Major Professor should run the near-final dissertation draft through Turnitin (or another plagiarism check). The originality report should be included with the Preliminary Approval of Dissertation and Request for Oral Defense form submission.

3. **Oral Defense Scheduling and Dissertation Announcement:** When scheduling the defense, remember UGS requires synchronous participation of all committee members and the student. Although physical presences is strongly encouraged, synchronous participation by telephone/video conference is allowed for all members, except the committee chair and student, who both must be physically present for the entire duration of the defense at an FIU location. Under special circumstances the chair may participate via telephone/video conference upon approval by the Dean of the University Graduate School.

   Once scheduled, the candidate needs to create an announcement in accordance with the UGS template (http://gradschool.fiu.edu/thesis-dissertation/). This announcement will be submitted with the Preliminary Approval of Dissertation and Request for Oral Defense form.

4. **GPD Review and Submission of the Preliminary Approval of Dissertation and Request for Oral Defense form:**
   a. The GPD will review the dissertation and contact the Major Professor and candidate when the dissertation review is completed via email with comments or concerns.
   b. The Senior Program Coordinator and GPD will review the dissertation announcement and contact the Major Professor and candidate if any changes are needed.
   c. Once approved, the GPD will sign off on the Preliminary Approval of Dissertation and Request for Oral Defense form in the online system and it will advance to the Dean's Office for approval. NOTE: The candidate will need to work with the GPD to be sure this is submitted on time.
   d. When the dissertation and announcement are approved for defense by UGS, the dissertation defense date/time/place is publicized by the Senior Program Coordinator, with support from the candidate.

After preliminary approval of the dissertation, the candidate will give a public presentation on their doctoral work. The subsequent paragraphs outline the steps for this process and final submission of the dissertation.

5. **The Dissertation Oral Defense**: The candidate should prepare an approximately 45 minute presentation of their doctoral work with guidance from their Major Professor. Candidates defend the dissertation at a presentation with the Advisory Committee and others from SUCCEED, STEM TI and the general public in attendance. The presentation follows a similar structure to the proposal defense:
   - ✓ Oral presentation by the candidate,
   - ✓ Questions from the audience with an emphasis on non-Advisory Committee members,
   - ✓ Audience exclusive of Advisory Committee are asked to applaud the candidate and leave,
   - ✓ Closed question and answer session with just the Advisory Committee and the candidate,
   - ✓ Candidate will be asked to leave the room briefly so the Advisory Committee can discuss their evaluation of the doctoral work and come to a final recommendation, and
   - ✓ Candidate will return to the room to meet with the Advisory Committee and discuss next steps.

   Recommended Practice: *Candidates may consider practicing their presentation at the STEM TI Research Meetings and in their particular research group meetings.*

6. **Post-Defense Revision(s):** After the dissertation oral defense, the Major Professor and the candidate work to make revisions as recommended by the Major Professor and the Advisory Committee as deemed appropriate.

7. **ETD Form Signatures:** Upon the completion of the dissertation revisions, the candidate, Major Professor, and Advisory Committee Members sign the Final Electronic Dissertation Approval form!!!!!!

8. **Submission of final dissertation and supporting documents.** With guidance and support from the GPD and Senior Program Coordinator, the candidate will submit their dissertation electronically to UGS. Detailed information about these procedures can be found at https://library.fiu.edu/etd and is summarized below.

   In particular, the candidate submits the following**:**
   a. The completed ***digital copy of the dissertation*** to keep on file.
   b. A ***completed signature page*** (page ii) with original signatures of the Advisory Committee members. This page will be included in the final published dissertation. The forms are available for a 4-member Advisory Committee or a 5-member Advisory Committee. Go to https://library.fiu.edu/c.php?g=159937&p=3843783
   c. ***ETD Submission Approval Page*** - This page allows FIU to release the document to its ETD archive. It also allows the candidate to determine how they want their work distributed. The form asks the candidate to name a proxy so that decisions as to how the document is distributed can be made in their absence. The form is included in the online Dissertation Activity system.

d. ***Survey of Earned Doctorates*** - This survey is completed as a UGS requirement upon submission of the dissertation. It is a questionnaire about the student's experiences in their doctoral programs. A certificate of completion is required as part of the final ETD approval. https://sed-ncses.org/login.aspx

9. **UGS Approval.** UGS reviews all dissertation materials. This is often done at the end of the semester even if they are submitted earlier in the semester. It is the candidate's responsibility to continue checking their FIU e-mail until they have received word that their dissertation needs additional changes or has been approved. It is the candidate's responsibility to make changes required by UGS following the submission of all the materials.

Policies and Procedures

Student Conduct

The Student Conduct and Honor Code is a compilation of policies, regulations, and rights designed to serve the Florida International University Community. Graduate students are expected to obtain, read and follow the University's Student Conduct and Honor Code which can be found at https://studentaffairs.fiu.edu/get-support/student-conduct-and-academic-integrity/student-conduct-and-honor-code/index.php

SUCCEED expects each graduate student to approach all their graduate education endeavors in a professional manner while maintaining compliance of all rules and guidelines committed to the completion of their degree. Professionalism includes, but is not limited to, satisfactory academic conduct and performance. In addition to meeting the academic standards of both the University Graduate School and the College, students pursuing their graduate degree in SUCCEED courses must demonstrate professionalism in the classroom. Students should have a clear understanding of the concept of professionalism in addition to also practicing the development of those behaviors and attitudes during the program. These behaviors and attitudes include but are not limited to increasing maturity, competence, integrity, regard for human dignity, respect for social justice, accountability, responsibility, and caring as they progress through the program. Students are expected to respect the rights of others regardless of their race, religion, nationality, sex, age, sexual orientation, physical condition, or mental state.

Administrators, faculty, and staff of SUCCEED reserve the right to interpret, maintain, and enforce the standards of professional conduct and performance for all doctoral students. In addition, administrators, and faculty also reserve the right to recommend dismissal of any student who has violated the standards of professional conduct or demonstrates a lack of professional development. Any violation of professionalism or academic conduct will be brought to the attention of the SUCCEED Director and Graduate Program Director. Further recommendations and decisions will be decided following formal communication to the student and their Major Professor.

Academic Integrity

Graduate Students at FIU are expected to adhere to the highest standards of integrity in every aspect of their lives. Honesty in academic matters is part of this obligation. Academic Integrity is the adherence to those special values regarding life and work in an academic community. In instances where the academic standards may have been compromised, FIU has a responsibility to respond appropriately to any charges of misconduct of academic integrity. For a summary of FIU's policy on academic integrity, please visit the Student Affairs website: https://studentaffairs.fiu.edu/get-support/student-conduct-and-academic-integrity/academic- integrity/index.php

Violations of academic integrity and student conduct include, but are not limited to cheating,

fabrication of data, tampering, plagiarism, or aiding and/or facilitating such activities. Graduate students are expected to be familiar with these issues and to take personal responsibility in their work. It is the student's responsibility to become familiar with the academic integrity policies at the program, college, and university levels.

Student Travel

SUCCEED endeavors to provide graduate students with the opportunity to attend conferences, trainings, workshops, and other activities related to a student's program of study or professional development whenever possible. A limited number of travel awards may be available through UGS:
https://gradschool.fiu.edu/students/funding/
https://dasa.fiu.edu/all-departments/student-government-association/committees/graduate-professional-student-committee/index.html
and through some professional societies or conferences.

Aside from these options, the primary travel support can be offered by Major Professors (or Interim Advisors). Typically travel is supported through funded grants (or startup funding for new faculty) and may require students to publish and present research related to the Major Professor's grant work. We recognize some students' graduate assistantship research does not align with their personal research interests. In this situation, one strategy for securing travel funding for personal research interests is to plan to present two papers at a time: one related to a grant, and one more connected to personal interests. Coordinate these options early with your Major Professor or Interim Advisor.

Leave of Absence

All ECED graduate students, both part-time and full-time status, are expected to maintain continuous enrollment during fall, spring, and summer semesters. The graduate program makes every effort to schedule all required courses to ensure students can easily maintain their enrollment.

A graduate student who is requesting to be excused from registration while in the Ph.D. program, and any student who has reached candidacy status must formally request a leave of absence a semester before the anticipated leave. Prior to requesting a leave of absence, students must discuss this with their Major Professor.

A leave of absence must be approved by the Graduate Program Director and the Dean of UGS and in accordance with UGS policy 380.048, Leave of Absences from a Graduate Program. Leave will be granted only under exceptional circumstances and in accordance to UGS procedure. The leave of absence policy allows for three consecutive terms (including summer as a term), that is, one full year.

Students have the right to appeal a decision of their leave of absence with the Dean of the College. Leave will generally be granted in cases involving parental leave, personal hardship, or other family need. Academic standing is not considered a reason for granting a leave of absence. When a student returns from a leave of absence, decisions concerning previous plan of study will be mutually agreed

upon by the student's Major Professor and the student.

Withdrawal

Admitted graduate students who have not been registered for three consecutive terms, including the summer session, will be removed from the graduate program and must apply for readmission through the Graduate Admissions Office. Graduate students who withdraw voluntarily from their graduate studies are required to apply for readmission under the admission regulations in place at the time of reapplication. Withdrawal must occur only during the first eleven weeks of the semester. In the summer semester, withdrawal deadlines will be adjusted accordingly. Students who voluntarily withdraw from the University must file the appropriate paperwork. A withdrawal form must be completed and submitted to the OneStop Enrollment & Services. See the Student Withdrawal form for additional policies/procedures related to withdrawal and refer to the Academic Calendar for the deadline dates. International students should consult with the ISSS to ensure all required international documents are considered and submitted when taking a leave of absence.

Grades & Academic Standing

All graduate students are expected to maintain good academic standing. A GPA of 3.0 or higher is required. Students who fail to maintain a 3.0 may be dismissed from the program. Students are required to attain a grade of B or above in all courses. Failure to maintain good academic standing will result in placement on academic ***warning, probation, or dismissal***.

A graduate student whose cumulative graduate GPA falls below a 3.0 will be placed on ***warning***. When a student has a GPA that falls below 3.0, they are also not eligible for a graduate, research or teaching assistantship.

A graduate student on warning whose cumulative graduate GPA remains below 3.0 will be placed on ***probation***, indicating academic difficulty. It will be to the discretion of the Graduate Program Committee and Graduate Program Director to determine the conditions which must be met for the student to continue enrollment.

A graduate student on probation who's cumulative and semester GPAs fall below a 3.0 will be automatically dismissed from their program and the University.

Incomplete Grade

A grade of incomplete (IN) is a temporary symbol given at the discretion of the instructor for work not completed because of serious interruption not caused by the student's own negligence. An incomplete must be made up as quickly as possible but no later than two consecutive semesters (including the summer semester) after the initial taking of the course or it will automatically default to an "F" grade. There is no extension of the two-semester deadline. The student must not register again for the course to make up the incomplete.

Students who have incomplete grades on their records must remove the incomplete by the end of the fourth week of the term in which they plan to graduate. Failure to do so will result in a cancellation of their graduation. The student will need to reapply for graduation. For more information about the UGS Policy 380.0449 Graduate Incomplete Grades, click here.

Dissertation Credits

Once a graduate student advances to candidacy, they must be continuously enrolled in at least three credits each term, including the summer term, until they graduate. Students will receive in progress (IP) grades for Doctoral Dissertation credits until the final term. Grades will be changed from IP to P (pass) as soon as the candidate successfully defends the dissertation, and the major Professor files a grade of P for Doctoral Dissertation.

Dismissal

As noted in previous sections, certain circumstances may lead to a graduate student being dismissed from the program. Those circumstances may include:

1. Falling out of GPA compliance two consecutive semesters (see *Academic Standing* section)
2. Not passing the comprehensive exams (see *Comprehensive Examination* section)
3. Failure to maintain continuous enrollment
4. Failure to meet conditional admission requirements – These would have been communicated to the student at the time of admission.
5. Student no longer has a sponsoring major professor (See *Switching Major Professors* section)
6. Student is not making satisfactory progress as reflected by unresolved unsatisfactory status on the ECED Annual Evaluation (see *Annual Evaluation and Mentoring Plan* section)
7. Student engages in Academic or Research Misconduct, Illegal/Fraudulent, or Unethical Behavior
8. Other serious issues as determined by the ECED Graduate Program Committee

Students dismissed from the Program have 10 business days to appeal to the ECED Graduate Program Committee for reinstatement. If one of the committee members or the GPD has a conflict of interest with the student, the member in conflict will be replaced by the SUCCEED or STEM TI Director as appropriate. The Committee will evaluate the appeal and render a decision within two weeks. Note that for reinstatement after dismissal for items 1 and 3, a petition to UGS will also be required. Appeals from students failing their comprehensive exams (item 2) and petitions from students not meeting conditional admit requirements (item 4) will not be considered.

SUCCEED Community Events

The following are some of the SUCCEED community events that typically happen in a school year and you can look out for!

- **SUCCEED socials** – SUCCEED socials are usually either department-wide or graduate student-specific events, and can involve socializing off campus or on campus. If you have ideas for social events you'd like to help lead, you can get in touch with GPD or student representatives to have their support! We appreciate these socials as a time to stay connected as a community.
- **Writing group and Writing retreats** – Writing is particularly important part of a PhD process. From time to time, graduate students or professors organize regular meeting writing groups and/or intensively focused writing retreats that help our students progress their work. Look out for these opportunities, and consider getting involved in this as well!
- **Annual Awards Ceremony** – At the end of Spring semester, we have an Annual Awards Ceremony to celebrate our entire SUCCEED community (across Ph.D. graduate and B.S. undergraduate programs), to recognize our graduating seniors and outstanding contributions from our community. It is usually a catered event in late April, so please join us if you are able!
- **Student Research Showcase** – We have tended to have poster sessions for our students to share their work with community members inside and outside SUCCEED, including prospective graduate students. We have hosted these adjacent to the awards ceremony and at other times of the year, so please participate if/when they are going to happen next.
- **Admitted Students Event and Open House** – As part of the admissions process, you will probably all remember that we often host an open house and/or an event for admitted students. It is really useful for prospective students to meet our current students. You are a great ambassador for our your own experience in our program! So please come and help us with recruitment and outreach to prospective students when it comes up.
- **Peer mentoring** – To help build community and share resources across the graduate program cohorts, we are initiating a peer mentoring program. We hope to match new incoming students with our current students in the first year. If you participate, this peer mentor will be a valuable resource for advice as you begin your PhD journey.

DBER Community at FIU

STEM TI Mission & Organization

The STEM Transformation Institute was founded in 2014 and maintains its mission in direct support of FIU's Next Horizon 2025 Strategic Plan and state performance metrics. The vision of the STEM Transformation Institute is to support, expand and conduct research on the improvement of STEM teaching across the K-20 spectrum, which will lead to better prepared and more employable STEM professionals and educators. This vision motivates the unifying mission of the Institute to advance learning and success of K-20 learners by transforming classrooms, programs, and institutional education practices across disciplines; develop and share best practices, policies and training for STEM and STEM education professionals across the nation; and conduct innovative basic and applied research to advance our understanding of STEM teaching and learning. Specifically, the STEM Transformation Institute coordinates strategic activities across many departments and colleges that are organized towards high quality teaching and evidence-based, outcome-oriented improvements in the teaching of STEM at the undergraduate level and driving efforts towards institutional change.

The STEM Transformation Institute's *teaching* mission integrates objectives across multiple projects, primarily fostering adoption of evidence-based instructional practices through resources and professional development to faculty. Such flagship programs and institutional advancement areas include the Learning Assistant Program, FIUteach, the Howard Hughes Medical Institute (HHMI) Faculty Scholar program, and deployment and expansion of evidence- based curricular materials.

The STEM Transformation Institute's *research* mission includes state-of-the-art research and creative activities across a number of cutting-edge discipline-based education research (DBER) projects, a set of emergent disciplines which have received much attention and funding in recent years. With the efforts of over 25 DBER research faculty in eight departments and by bringing in around $40 million in research funding, the Institute's research and outreach activities have positioned FIU as a national leader in DBER, leading to national prominence for the institution as a whole.

As of Spring 2020, the STEM Transformation Institute has 42 personnel, including tenure-track DBER faculty, clinical faculty, instructors, program managers, postdoctoral researchers, and staff. All faculty in SUCCEED are also members of the STEM Transformation Institute, and as such, so are all graduate students who are part of the Ph.D. in Engineering and Computing Education, as well as undergraduate students who participate in SUCCEED-related research groups.

Learn more about the Institute, research projects and team at **stem.fiu.edu**

DBER Graduate Community Organization

The Discipline-Based Education Research (DBER) Graduate Community within STEM TI provides students an opportunity to collaborate and build community across disciplinary boundaries. In terms of communication among graduate students and the STEM TI research community, there are two main email listservs which doctoral students will be added to:

- ✓ The **Graduate Student Group** is where the graduate students of the STEM Institute come together for writing sessions, to socialize and share opportunities. The students meet on a weekly or biweekly basis. Contact the appropriate **point of contact** to get added to the listserv.
- ✓ The **STEM TI research** listserv serves the purpose of connecting undergraduates, graduates, postdocs, faculty, staff and alumni at the Institute. The research listserv is used to spread word across the entire institute and its past/present members (150+ people) regarding announcements, research opportunities, and Tuesday community meetings. Contact the appropriate **point of contact** to get added to the listserv.

Events & Opportunities

STEM TI offers a variety of events and opportunities to come together each semester. While there are many informal gatherings (e.g., lunch at the tables outside and inside of STEM TI, practice conference and defense presentations) and less frequent events (e.g., learning assistant workshops, FIUteach events), there are also a series of on-going events:

- ✓ ***Tuesday Research Community Meetings:*** The goals of these meetings, which occur each semester, including summer, are to: (1) Promote the personal and professional development of attendees, (2) Build and maintain a community through creating opportunities for collaboration and relationship building, and (3) Develop an environment that promotes building research skills and intellectual rigor. Each semester, the different disciplines within STEM TI are highlighted, usually one per week through presentations by STEM TI faculty and students and/or outside visitors. In addition, certain weeks are dedicated to social events or professional development.
- ✓ ***DBER Seminar:*** These seminars occur in the fall and spring semesters and include a diverse group of educational researchers and practitioners from both inside and outside of FIU. The seminar talks are targeted for practitioners (i.e., instructors, student support personnel, mentors, advisors) and can include both approaches and tools for educational design as well as connections to research.
- ✓ ***Other Graduate Student-Specific Events:*** The STEM TI graduate students hold multiple meetings according to the interests of the students at the time (e.g., journal clubs, R statistical support meetings). These are all graduate student created and led, as such students have agency to create communities, structures, and resources to support their overall experience.

Resources

The STEM Transformation Institute has put together a How-To guide with sections of interest to graduate students. The How-To guide also includes a list of educational research-related courses that may be of interest to STEM TI graduate students. This guide will be helpful as students explore research methods and engineering and computing education specialization course options.

University Resources

Graduate Assistant Handbook (UGS)

Click here to access the University Graduate School Graduate Assistant Handbook. This handbook is updated annually and reflects all information related to Graduate Assistantships.

Academic Calendar

Click here to access the University's Academic Calendar. This calendar includes dates, deadlines for registration, enrollment, holidays and university closings.

Student Survival Guides (FIU)

The University's Student Affairs office offers a Survival Guide to all students to help them navigate important matters pertaining to FIU.

Counseling & Psychological Services (CAPS)

Counseling and Psychological Services (CAPS) provides mental health services to students that will facilitate and enhance their personal learning, emotional well-being and academic skills development. Click here for more information and how to schedule an appointment.

Center for Excellence in Writing

The Center for Excellence in Writing offers students several services that include face-to-face and online tutoring, workshops, and community engagement. In addition, the Center offers a dissertation writing retreat multiple times a year for students who have an approved D-3 form on file. Click here for more information and access to their calendar of events.

Career & Talent Development

The FIU College of Engineering & Computing has a Career & Talent Development office that is fully dedicated to students and offers a range of services and activities to help you develop professional skills to go beyond the classroom and into the workplace. Located in EC 2852 (next to the Panther Pit), the Career & Talent Development office offers a variety of services including interviewing skills, resume writing, networking, job search strategies, salary negotiation, and much more. Click here for more information.

Tech Support

The Engineering Information Center (EIC) offers technology support and services for the College of Engineering and Computing. Services and support include printing, laptop loaner program, account and network account and troubleshooting. Click here for more information about EIC and the support they offer.

Center for Diversity and Student Success in Engineering and Computing (CD-SSEC)

The Center for Diversity and Student Success in Engineering and Computing (CD-SSEC), which is part of SUCCEED, provides engineering students with opportunities and services that will enhance their academic experiences and increase their rate of success in the school and their future careers. The office supports the college through recruitment, retention, and enrichment programs, such as mentorship, undergraduate research opportunities, peer-to-peer tutoring, internship, and pre- college outreach activities. Click here for more information about CD-SSEC.

Student Organizations

Click here for a list of engineering student organizations and access to their websites.

APPENDIX

A. Program of Study Examples

The subsequent pages include three examples of how one might traverse the doctoral program. These examples are meant to be used as starting points for discussion with your Interim/Major Professor:

- ✓ Full-time students who are not transferring in graduate coursework
- ✓ Full-time students with a Master's degree/15 credits of Master's level coursework
- ✓ Part-time students taking 6 credits each semester who are not transferring in any graduate coursework

Credit hours are displayed in parenthesis after course numbers (e.g., EGN 1234 (3) means that EGN 1234 is a 3 credit course).

Please note these examples include the maximum time a student can wait to submit the Appointment of Dissertation Committee form and the minimum time between proposal and defense. The actual time necessary between proposal and defense is dependent on many factors, including, but not limited to data collection plan, research methods selected, complexity of data analysis, and comfort level with writing.

Year	Semester	Full-time with no transfer credits	Full-time with M.S. level transfer credits	Part-time with no transfer credits
1	Fall	9 credits of coursework & graduate research: • EGS 6008 (3) • EGN 6957 (2) • EDF 6481 (3) • EGN 6935 (0) • Research (1)	9 credits of coursework & graduate research: • EGS 6008 (3) • EGN 6957 (2) • EDF 6481 (3) • EGN 6935 (0) • Research (1)	5-6 credits of coursework & graduate research: • EGS 6008 (3) • EGN 6957 (2) • EGN 6935 (0) • (Optional) Research (1)
1	Spring	9 credits of coursework: • EGS 6057 (3) • EGS 6055 (3) • Research Methods (3)	9 credits of coursework: • EGS 6057 (3) • EGS 6055 (3) • Research Methods (3)	6 credits of coursework: • EGS 6057 (3) • EGS 6055 (3)
1	Summer	6 credits of coursework and/or research: • Discipline Spec (3) • Discipline Spec (3)	6 credits of research	6 credits of coursework and/or research: • Research (3) • Discipline Spec (3)
2	Fall	9 credits of coursework: • EGN 6900 (3) • Research Methods (3) • Discipline Specific (3)	9 credits of coursework: • EGN 6900 (3) • Specialization (3) • Research Methods (3)	6 credits of coursework: • EGN 6900 (3) • Discipline Spec (3)
2	Spring	9 credits of coursework: • Specialization (3) • Specialization (3) • Discipline Specific (3)	9 credits of coursework & research: • Specialization (3) • Specialization (3) • EGN 4942 (1)	6 credits of coursework: • Research Methods (3) • Discipline Spec (3)

			Assemble Dissertation Committee and Submit form Complete **Candidacy Exam and Submit form***	
2	Summer	6 credits of coursework and/or research: • Research (3) • Discipline Spec (3) **Assemble Dissertation Committee & Submit form** Complete **Candidacy Exam**	6 Dissertation Credits **Complete Dissertation Proposal and Submit form**	6 credits of coursework and/or research: • Discipline Spec (3) • Discipline Spec (3)
3	Fall	9 credits of coursework and/or research: • Specialization (3) • EGN 6942 (1) • Research (5) **Submit Candidacy Form***	3 Dissertation Credits Conduct Dissertation Research	6 credits of coursework: • Research Methods (3) • Specialization (3)
3	Spring	3 Research Credits Prepare proposal	3 Dissertation Credits Conduct Dissertation Research	6 credits of coursework: • Specialization (3) • Specialization (3)
3	Summer	6 Dissertation Credits **Complete Dissertation Proposal and Submit form**	3 Dissertation Credits **Present and Submit Dissertation Submit Prelim. Approval of Dissertation & ETD Forms GRADUATION!**	6 credits of coursework and research • EGN 6942 (1) • Research (5) **Assemble Dissertation Committee & Submit form** Complete **Candidacy Exam**
4	Fall	3 Dissertation Credits Conduct Dissertation Research		6 credits of research **Submit Candidacy Form***
4	Spring	3 Dissertation Credits Conduct Dissertation Research		6 Dissertation Credits **Complete Dissertation Proposal & Submit form**
4	Summer	3 Dissertation Credits **Present and Submit Dissertation Submit Prelim. Approval of Dissertation & ETD Forms GRADUATION!**		3 Dissertation Credits Conduct Dissertation Research
5	Fall			3 Dissertation Credits Conduct Dissertation Research
5	Spring			3 Dissertation Credits **Present and Submit Dissertation Submit Prelim. Approval of Dissertation & ETD Forms GRADUATION!**

*Candidacy Form can be submitted before, after, or concurrently with the Dissertation Proposal form

B. SUCCEED Department forms

SUCCEED ECED:PHD Program of Study Form

OVERVIEW: The Program of Study form provides students an overview of the program requirements and a single form to use to track doctoral coursework. This form will be used as part of the annual evaluation and mentoring plan review process. This form should be shared with the Graduate Program Director when you submit your Program for Doctoral Degree and Application for Candidacy form.

INSTRUCTIONS:

1. Determine which form to use.
    a. Students who are transferring in coursework (i.e., they took graduate coursework during their undergraduate program, they previously received a Master's degree, they have an incomplete graduate degree) should use the Transfer Credit form, which provides an overview of the transfer credit policy.
    b. Students who are NOT transferring coursework can use the standard Program of Study form.

2. Record planned and current coursework. The form is designed to enable students to track their current courses and to record potential terms when they will complete graduate courses.

3. Share this form with Major Professor each semester. Students should share this form with their Major Professor before registering for courses each semester. This form is meant to be dynamic and therefore, to be updated on a semester-by-semester basis.

4. Submit a copy of this form to the GPD when you submit your Program for Doctoral Degree and Application for Candidacy form. NOTE: If you are transferring courses, refer to 4a.

4a. If a student is transferring courses, they should share the form at least one semester prior to submitting their Program for Doctoral Degree and Application for Candidacy form (in other words, completing 60 credits of coursework and their comprehensive exam).

PhD Engineering and Computing Education Course Requirements

NAME:	Panther ID:

Eng & Comp Education Foundations (11 Credits)

Course #	Course Title	Credits	Term	Grade
EGS 6008	*Foundations of ECED*	*3*		
EGN 6957	*Professional Development*	*2*		
EGN 6900	*Meth. & Practices in ECED Res.*	*3*		
EGN 6057	*Equity in STEM Education*	*3*		
	Credit Total			

Research Methods & Statistics Elective (9 Credits)

Course #	Course Title	Credits	Term	Grade
EDF 6481/ SCE 7761	*Education Res. Methods*			
	Credit Total	0		

Specialization Courses (9 Credits)

Course #	Course Title	Credits	Term	Grade
	Credit Total	0		

Teaching Requirement (4 Credits)

Course #	Course Title	Credits	Term	Grade
EGS 6055	*Fdns of Eng & Comp Teaching & Learning*			
EGN 6942	*Mentored Teaching Practicum*			

Seminar (0 Credits)

Course #	Course Title	Credits	Term	Grade
EGN 6935	*Seminar on STEM Ed. Research*	0		

Discipline Specific Specialization (15 Credits)

Course #	Course Title	Credits	Term	Grade
	Credit Total	0		

Research Credits (Need 15 Credits of Dissertation Research)

Course #	Course Title	Credits	Term	Grade
	Credit Total	0		

Other

Course #	Course Title	Credits	Term	Grade

TOTAL CREDITS	0

FIU Engineering & Computing

School of Universal Computing, Construction and Engineering Education

SUCCEED ECED:PHD Program of Study Form

OVERVIEW: The Program of Study form provides students an overview of the program requirements and a single form to use to track doctoral coursework. This form will be used as part of the annual evaluation and mentoring plan review process. This form should be shared with the Graduate Program Director when you submit your Program for Doctoral Degree and Application for Candidacy form.

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1. Determine which form to use.
    a. Students who are transferring in coursework (i.e., they took graduate coursework during their undergraduate program, they previously received a Master's degree, they have an incomplete graduate degree) should use the Transfer Credit form, which provides an overview of the transfer credit policy.
    b. Students who are NOT transferring coursework can use the standard Program of Study form.

2. Record planned and current coursework. The form is designed to enable students to track their current courses and to record potential terms when they will complete graduate courses.

3. Share this form with Major Professor each semester. Students should share this form with their Major Professor before registering for courses each semester. This form is meant to be dynamic and therefore, to be updated on a semester-by-semester basis.

4. Submit a copy of this form to the GPD when you are submitting your Program for Doctoral Degree and Application for Candidacy form. NOTE: If you are transferring courses, refer to 4a.

4a. If a student is transferring courses, they should share the form at least one semester prior to submitting their Program for Doctoral Degree and Application for Candidacy form (in other words, completing 60 credits of coursework and their comprehensive exam).

PhD Engineering and Computing Education Coursework		
NAME:	ID:	DATE:

Eng & Comp Education Foundations (11 Credits)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	**Course Equivalent**
						EGS 6008
						EGN 6900
						EGN 6057
						EGN 6957
	Credit Total	0				

Research Methods & Statistics Elective (9 Credits)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	**Course Equivalent**
						EDF 6481/SCE 7761
	Credit Total	0				

Specialization Courses (9 Credits)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	**Course Equivalent**
	Credit Total	0				

Seminar (0 Credits)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	**Course Equivalent**
		0				EGN 6935

Teaching Requirement (4 Credits)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	**Course Equivalent**
						EGS 6055
						EGN 6942

Discipline Specific Specialization (15 Credits)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	**Course Equivalent**
	Credit Total	0				

Research Credits (Need 15 Credits of Dissertation Research)						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	
	Credit Total	0				

Other						
Course #	**Course Title**	**Credits**	**Term**	**Institution**	**Grade**	
	Credit Total	0				

Total Credits (75 Required)	0

Transfer Credit Determination	
Transfer From	**Max Credits**
Taken in ugrad but not applied to degree	12
Non-Degree Seeking	12
Completed Master's Degree	36
Incomplete Master's	15
Incomplete Doctorate	15

Requirements for Transfer Courses:

1. The student received a grade of 3.0 or better on a 4.0 scale.
2. The course was taken at FIU or an accredited institution.
3. The course must be relevant, as judged by an appropriate committee of the program, to the graduate program to which the student is accepted.
4. The course must be listed on an official transcript sent to the University Graduate School Admissions Office by the institution where the course was taken.
5. The date of completion will be no longer than 6 years or 9 years at the time of graduation with a master's or doctoral degree, respectively (requirement does not apply to credits earned as part of a completed graduate degree).

ECED Service and Professional Development Accounting

This is the **service policy** in the ECED Graduate Handbook:

Service and Professional Development Requirement

A critical component of SUCCEED's mission is to develop our students as leaders who are prepared for diverse career trajectories. Part of that development, in alignment with our values of community and collaboration, will be supported by the service and professional development requirement. Each year, all doctoral students will be asked to participate in significant service work within SUCCEED (which includes the Center for Diversity and Student Success in Engineering and Computing, CD-SSEC) and/or STEM Transformation Institute. This service requirement can be fulfilled in many ways such as assisting with SUCCEED and CD-SSEC events, leading the STEM Transformation Institute student groups, or working the FIU/SUCCEED booth at a national conference. Full-time students are expected to take ***a leadership or organizing role in at least one major service event or activity*** *(e.g., grad committee membership, organizing grad socials), and to participate in a number of departmental events. Part-time students are expected to participate in a number of departmental events, any leadership or organizing roles are optional and not required.*

1. Below is a list of SUCCEED events and committees, with room to expand the list with additional examples. Please indicate which events you attended or played a major / official role in organizing, and which committees you are a member of or a major / official organizer of. If your organizing role is a specific responsibility of your graduate assistant or primary paid work duties, it does not count as service.

Events	**Attended (Y/N)**	**Organized / Led (Y/N)**
ECED Orientation Events		
ECED Open house		
ECED Admitted students		
Faculty candidate grad meeting (list # of meetings)		
STEM TI DBER speaker grad meeting (list # of meetings)		
SUCCEED socials, potlucks, parties		
SUCCEED booth at ASEE		
Engineering Expo		
Engineers on Wheels / JEDI outreach		
IDE program events		
Professional development workshops for peers		
Other:		
Other:		

Committees	**Member (Y/N)**	**Organizer (Y/N)**
Student rep on a SUCCEED committee (grad program, marketing)		
STEM TI Tuesday meeting committee		
ECED or CEC student org		
Other:		
Other:		
Other:		

2. **Provide a short justification for why the above fulfills the service requirement. If there are any other extenuating or special circumstances regarding your service this year, please explain:**

This is the **professional development policy** in the ECED Graduate Handbook:

> *In addition, all doctoral students should participate in at least one **professional development** event/workshop each year. Many are offered around FIU and within the national societies for engineering and computing education. These events and workshops can support a student's development as a researcher, as an educator, in preparation for the job market, and/or as a leader. Please speak with your Major Advisor, the Graduate Program Director, and/or the SUCCEED program coordinators to learn more about possible professional development opportunities.*
>
> *Each year, students will record their service work and professional development participation in their annual evaluation and mentoring plan. See subsequent section for more information.*

3. Below is a list of some possible professional development activities, with room to expand the list with additional examples. Please indicate which events you attended.

Professional Development Options	**Date(s)**	**Name / description**
Attended a workshop at a conference		
On-campus workshops		
Online learning course		
STEM TI Tuesday Meetings		
DBER Seminar		
Internship or coop credit		
Other:		
Other:		
Other:		

Provide a short justification for why the above fulfills the professional development requirement. If there are any other extenuating or special circumstances regarding your professional development this year, please explain:

Reflection and Feedback

Part 3: Reflection and Feedback

1. To help the GPDs look after your needs and the quality of your advising experience, please answer the following questions in around a 1-page reflection. These responses will be kept internal to the department and are a chance for you to express any honest feedback or reflections. Feel free to expand on these responses separately if the textboxes are too small.

    a. *Roses:* What has worked well this year regarding your advising or departmental support?

    b. *Thorns* What could have been better this year regarding your advising or departmental support? *Thorns:* What could have been better this year regarding your advising or departmental support?

    c. *Moment of truth:* Is there anything you would like a chance to tell your advisor or the GPDs that you have been holding back?

ECED Comprehensive Exam Rubric

Each member of the committee will review each of the three responses developed with the rubric included at the end of this form. Committee members will discuss their assessments after the conclusion of the oral presentation and come to a rating for each prompt (pass, revise & resubmit, retake required). There is not a direct correlation between the rubric levels and the final ratings. However, it should be noted that exemplary should be reserved for cases of students who show outstanding performance in a particular area and is not the minimum for a passing score.

Rubric Levels

Exemplary: *Demonstrates above average doctoral-level proficiency*
Accomplished: *Demonstrates acceptable doctoral-level proficiency*
Developing: *Demonstrates potential to achieve doctoral-level proficiency*
Beginning: *Demonstrates limited doctoral-level proficiency*

Rubric Scores and Final Committee Ratings

Prompt-> Dimensions of Rubric	**Theory**	**Synthesis**	**Artifact**
Engineering and Computing Education Knowledge			
Evidence of understanding of content and knowledge of the research area, theory, and methods			
Evidence of application of content and knowledge of the research area, theory, and methods			
Critical Thinking			
Evidence of analysis of supporting data/evidence			
Evidence of synthesis across topics, fields, methods to provide a critical evaluation			
Written Communication			
Evidence of Clear Argumentation within Response			
Evidence of Organization and Storytelling			
Evidence of control of syntax and writing mechanics			
Oral Communication			
Evidence of effective delivery			
Evidence of effective organization			
Evidence of Complementary Supporting Material			

Rubric

Categories	**Exemplary**	**Accomplished**	**Developing**	**Beginning**
Engineering and Computing Education Knowledge: *Includes an understanding of and ability to apply the literature, major theoretical concepts and research methodology*				
Evidence of understanding of content and knowledge of the research area, theory, and methods	Illustrates a knowledge base that exemplifies that of an early-career researcher. Broad scope and depth of understanding	Illustrates a strong knowledge base. Displays scope and thoroughness developed across multiple courses and project experiences	Explores topics with curiosity; adequate knowledge from variety of sources displayed	Response highlights minimal understanding of the topic (possibly limited to one course or project experience);
Evidence of application of content and knowledge of the research area, theory, and methods	Creative and novel application of knowledge that explicitly recognizes assumptions and limitations of the application	Application of knowledge is sound and demonstrates thoughtfulness to limitations and assumptions inherent in research	Knowledge is applied somewhat appropriately, but with limited consideration of the assumptions and limitations	Limited or no careful consideration to how and when particular knowledge should be applied

Categories	**Exemplary**	**Accomplished**	**Developing**	**Beginning**
Critical Thinking: *Includes analysis and synthesis of existing theoretical and/or empirical literature from ECED (and/or related fields).*				
Evidence of analysis of supporting data/evidence	Thoroughly (systematically and critically) examines evidence to develop a comprehensive view of topic.	Systematically examines evidence to describe and clarify key points. Some questioning of value of evidence.	Evidence is used but not carefully examined; Limited questioning of accuracy, relevance, and completeness of evidence	Evidence is taken at face-value without examination.
Evidence of synthesis across topics, fields, methods to provide a critical evaluation	Integrates literature from inside and outside the field to develop new knowledge that is comprehensive and significant	Reveals important patterns, differences or similarities based on building connections among existing research	Some patterns, differences, or similarities developed but either are based on limited evidence or surface-level conclusions	Combines few facts and ideas; needs more development
Written Communication: *Includes a cohesive argument and the approach to expressing knowledge and ideas effectively in written manuscripts.*				
Evidence of Clear Argumentation within Response	Thoroughly and convincing argument within the response. Developed on a well-reasoned and logical set of claims.	Response is clearly stated and well developed. Claims are appropriate and logically defined. Accomplishes the goals of the prompt.	Response is appropriate but the argument is incomplete. Additional evidence, analysis, or claim development necessary to fully accomplish goals of the assignment	Response is poorly developed, support is only vague or general; Argument lacks clarity and connection to evidence; minimally accomplishes goals of the assignment
Evidence of Organization and Storytelling	Noticeable coherence and intentionality of organization. Complements the topic	Clearly focused and organized around a central theme. Organization is well-structured and meaningful	Generally organized & focused, demonstrating coherence & progression of ideas; presents a thesis and suggests a plan of development that is mostly carried out	Disorganized and unfocused; serious problems with coherence and progression of ideas; weak or non-existent thesis
Evidence of control of syntax and writing mechanics	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency and is virtually errorfree.	Uses straightforward language that conveys meaning to readers. Few grammatical and spelling errors.	Uses language that generally conveys meaning to readers with clarity, although writing may include some errors	Uses language that sometimes impedes meaning because of errors in usage.
Oral Communication: *Includes the approach to demonstrating knowledge and ideas clearly through an effectively organized oral presentation*				
Evidence of effective delivery (i.e., posture, gesture, eye contact, vocal expressiveness)	Delivery techniques make the presentation compelling, and speaker appears polished and confident	Delivery techniques make the presentation interesting and the speaker appears comfortable	Delivery techniques make the presentation understandable. Speaker appears tentative	Delivery techniques detract from the presentation. Speaker appears uncomfortable
Evidence of effective organization (i.e., storytelling structure transitions, overall coherence)	Presentation is skillfully structured. A clear story arc supports the transitions and overall coherence of the presentation. Central message is compelling	Presentation is well-structured and coherent. Transitions are smooth and differentiate key points. Central message is clear and consistent	Organization is somewhat apparent to the audience. Yet, presentation often digresses from main points or overall structure. Central message is somewhat understandable.	Presentation lacks structure. Ideas are not coherent. Difficult to identify introduction, body and conclusions. Central message is unclear at times.
Evidence of Complementary Supporting Material (i.e., the slides, examples, figures, statistics, analogies,	Materials are used creative and novel ways to significantly support the presentation AND establishes the	Supporting materials are leveraged to support the overall presentation and central message	Supporting materials are appropriately used and partially support the overall presentation	Insufficient or inappropriate supporting materials detract or minimally support the presentation

quotes)	presenter's credibility/authority			