School of Computing

PhD Program Guide

This program guide will provide useful and helpful information for students enrolled in the PhD in Computing Program in the School of Computing (SoC) at the University of South Alabama (USA). If you have any questions, after consulting this guide, please contact the SoC Director of Graduate Studies, Dr. Debra Chapman – dchapman@southalabama.edu. **Note: This guide is for informational purposes only – please refer to the University Bulletin for official program requirements.**

1) **Application Requirements** – to ensure student's preparedness to successfully complete the program of study.

   a. A statement of purpose indicating the student's personal goals and research interests. Because prospective students are matched with a faculty mentor through an interview process, competitive applications align with the research areas of School of Computing graduate faculty.
   b. Three letters of recommendation from persons able to speak directly to the applicant's ability to engage in advanced discovery and contribute new knowledge to the discipline.
   c. Curriculum vita.
   d. An official transcript from each college or university attended.
   e. A baccalaureate or graduate degree in Computer Science, Information Systems, Information Technology or a closely related field. A graduate degree is not required for admission.
   f. A minimum GPA of 3.3 (4.0 scale) for all completed post-secondary coursework or a 3.5 overall (4.0 scale) for a completed graduate program.
   g. Official scores for the Graduate Records Examination (GRE) including the AW portion. Applicants whose highest degree is a graduate degree from an accredited institution of higher education will not be required to provide GRE scores since these applicants may qualify for Regular Admission based upon their previous graduate work.
   h. For international students, an official TOEFL, IELTS, ITEP, or PET score. See the policy of the Graduate School: https://bulletin.southalabama.edu/graduate-school/
   i. A completed application for admission to the Graduate School.

2) **Coursework** – Minimum of 72 semester hours
   a. **Core Courses** – 18 semester hours of core courses are required. You should expect a lot of reading and writing of academic material in each of these courses. The purpose of the core courses is to provide you with a broad view of the relevant academic literature in computing and to prepare you to become an independent

researcher and help you narrow down research topics that may interest you. The goal is to have a general idea of your dissertation topic at the completion of your core course work.

    i. Core Courses
1. CIS 612 – Cyber Security
2. CSC 626 – Big Data
3. ISC 629 – Computing Ecosystems
4. ISC 673 – Digital Investigations – Theory and Practice
5. ISC 675 – Advanced Topics in IS
6. ISC 686 – Advanced Topics in Risk Analysis

    ii. Candidacy- After successfully completing the 6 core courses, PhD students must pass a written and oral Qualifying Exam to achieve candidacy. The purpose of the Qualifying Exam is to demonstrate the candidate's preparedness to successfully complete a research project and write the finalized dissertation. Questions will focus on the content of the core courses and will be developed by the Dissertation committee chair, in conjunction with the student's dissertation committee.
1. This requires that a Dissertation Committee Chair has been identified
2. Students will schedule this exam with their Dissertation Committee Chair

b. **Electives** – 24 semester hours of electives are required
    i. Courses must be 500 level or higher.
    ii. Courses must be offered within the SoC, with a prefix of CIS, CSC, CYB, or ISC, unless approved by your Dissertation Committee Chair and the Director of Graduate Studies.
    iii. A maximum of 6 hours of CIS 694 (Directed Studies) may be counted as elective hours.
    iv. If you have not taken a research methodology course, you should take CIS 518 (Research Methodology) early in your coursework.
    v. If you are planning on conducting dissertation research that requires statistical analysis, you should take elective courses in statistics. Options include ST 540 and ST 545 (Stats in Research I & II) or ST 550 (Environmental Stats), or BA 602/702 (Applied Stats) and BA 604/704 (Multivariate Analysis), and for students using causal models BUS 610/BA 799 (Structural Equation Modeling). You should consult with your advisor or Dissertation Committee Chair to determine which course(s) to take.

c. **Dissertation** – A minimum of 30 semester hours of CIS 799 (Dissertation), passed with a grade of "S", are required
    i. Students cannot enroll in CIS 799 until they have achieved candidacy.

ii. With the approval of the Director of Graduate Studies and under the supervision of your Dissertation Committee Chair, directed study (CIS 694) hours may be taken to complete preliminary preparation for the dissertation study. These hours may be substituted for CIS 799.

iii. Students should work out a schedule and estimated timeline with their Dissertation Committee Chair to appropriately schedule the number of hours of CIS 799 to take each semester.

iv. The grading mode for CIS 799 is S/U (Satisfactory / Unsatisfactory). These hours are not counted in a student's cumulative GPA.

Guidelines for Grading in CIS 799:

In order to receive a "S" grade in CIS 799 the student is expected to:

- Have monthly check-ins/meetings with their dissertation chair. These can be face-to-face, video conference, e-amil, or another approved format. Dissertation chairs, at their discretion, may set different intervals for these meetings.
- Meet deadlines set by the dissertation chair or members of the dissertation committee.
- Make satisfactory progress on their dissertation research, as determined by the dissertation chair.
- The **minimum** amount of time a student is expected to spend on research and work related to their dissertation is 3 hours per week per credit hour registered. For example, a student registered for 3 credit hours of CIS 799 is expected to spend a minimum of 9 hours per week on dissertation work. **Note**: students may not be able to complete their research and dissertation within the expected timeframe if they spend only the minimum number hours per week on their work.

If these requirements are not met the student will receive a grade of "U" for the semester.

v. The Dissertation research should not be conducted until the student has successfully completed and successfully defended their Dissertation Prospectus (see Section 3B for details)

vi. The Dissertation is completed only when the student has successfully completed an oral defense of the research project and the dissertation has been accepted by the Graduate School – regardless of how many hours of CIS 799 has been taken. Students must be enrolled in at least 1 hour of CIS 799 in the semester they defend their dissertation.

vii. Submission Timelines – Your dissertation, once completed and approved by your committee and the Director of Graduate Studies, will be submitted to the USA Graduate School to meet final program requirements. Graduate School Submission deadlines are set by the USA Graduate School and can be found on their website - https://www.southalabama.edu/colleges/graduateschool/thesis.html

1. The document submitted for the "First Submission" is your fully defended and updated copy approved by your committee and the SoC Director of Graduate Studies.
2. The "Final Submission" must include all corrections identified by the USA Graduate School after the first submission.

d. **Timeline** – All requirements for the PhD in Computing degree, including transfer credit, must be completed within ten (10) calendar years from the date of matriculation as a School of Computing PhD student.

e. **Transfer Credit** – A maximum of 24 semester hours of relevant graduate credit earned at an approved graduate school may be counted toward the Ph.D. program. Transfer credit may be approved only after the completion of nine (9) semester hours of credit have been completed in the SoC. Transfer credit must be approved by the Director of Graduate Studies and the Dean of the USA Graduate School with the recommendation of the student's advisor or Dissertation Committee Chair.

f. **Academic Standards** – Students must maintain a minimum cumulative GPA of 3.0 to remain in good standing. Students who do not maintain the required minimum cumulative GPA will be placed on academic probation with a maximum of two semesters allowed to regain good standing.

g. **Student Expectations** – The PhD program requires independent work. Faculty members take on much more of a mentoring role than teacher/student. Students are expected to:

i. Work independently
ii. Be responsible for their own academic progress
iii. Build relationships with faculty members (you will need committee members and people to write letters of recommendation later)
  1. Identify Dissertation Committee Chair, and other members.
iv. Become a Researcher
  1. Attend available and relevant distinguished lecture presentations, research group meetings, participate when appropriate.
  2. Attend appropriate conferences – these allow you to meet other researchers in your area of study.
     a. Limited funding for graduate students to attend conferences is available through the USA Graduate School. This is typically

used to support students who are presenting their accepted papers at the conference.

   b. Students working on funded research grants may also have limited travel funding available as part of the grant budget.

   3. Seek out opportunities to collaborate with faculty on research projects.

   4. Volunteer to help in a research lab.

   5. Identify their own areas of research and develop dissertation topic.

h. **Academic Advisor** – Upon entry into the PhD program, the Director of Graduate Studies will serve as your initial academic advisor. As you discover a research interest and develop relationships with our researchers, you will identify a SoC researcher who can help guide your research and serve as the Chair of your Dissertation Committee. At that time, your Dissertation Committee Chair will take over as your primary academic advisor.

   i. You must ask the researcher if they are willing to serve as your Dissertation Committee Chair. They can say no – it is a voluntary position.

3) **Dissertation Work** – A primary educational objective of the PhD program is for students to develop the ability to conduct advanced research and contribute new knowledge to the discipline. Your thesis or dissertation is a significant and time-consuming undertaking that must reflect a mastery of your field, contribute to the existing body of knowledge of your field and demonstrate the level of high quality expected by the Graduate School and USA. A dissertation can take several years to complete. You, as the independent researcher, with the support and direction of the SoC graduate faculty, are responsible for identifying your dissertation topic, Dissertation Committee and Committee Chair. Your Dissertation Committee Chair can assist you in identifying appropriate committee members.

   a. **Dissertation Committee** – Your dissertation committee must consist of a minimum of 4 members:

      i. One-half of the committee must be members of the USA Graduate Faculty (members are listed here - https://www.southalabama.edu/colleges/graduateschool/faculty.html but consist of most of the tenured or tenure-track assistant, associate, or full professors).

      ii. The Dissertation Committee Chair must be a full member of the USA Graduate Faculty.

      iii. One committee member must be from outside the SoC.

      iv. Committee members may be external to USA or someone is not a member of the graduate faculty, if it benefits the research. This person cannot serve as Chair, but may be Co-Chair. An Outside Member Committee Appointment Form must be submitted to the Director of Graduate Studies.

1. A committee member who is external to USA would also meet the requirement for a member outside the SoC.

v. The Committee is formed with the submission of the [Dissertation Committee Form](#) to the Director of Graduate Studies.

vi. Your Dissertation Committee and, especially your Dissertation Committee Chair should be identified as early in the process as possible so they can help guide you in the choice of electives and participation in research activities.

vii. Committee Changes – It is possible that your committee will change after it has been established. Members may decide they no longer want to work on your committee, you may want to replace members of your committee, faculty members may leave, etc. **It is the responsibility of the student to identify new committee members and/or chair as necessary**. Students will not be able to progress in the dissertation process without a Dissertation Committee Chair and a full committee.

b. **Dissertation Prospectus** – Your dissertation will begin with the prospectus, which is a written document that identifies the problem you have chosen to study, why it is important, and your anticipated research methodology. It will, once approved, establish expectations between you and the SoC graduate faculty as to what is expected from your dissertation work.

i. Key Components - A prospectus is a written document that contains the following key elements:

1. Problem/topic
2. Review of existing body of knowledge
3. Description of study (must include subjects, procedures, equipment, materials, schedule, and other pertinent information)
4. Anticipated nature of results
5. Description of anticipated method of analysis
6. Implications and impact on existing body of knowledge

ii. Your prospectus must be presented to your committee during an oral defense meeting.

1. A complete Dissertation Committee is required for a prospectus defense.
2. All members of your committee must attend (in person or virtually) the Prospectus Defense meeting.
3. You must be prepared to answer questions regarding your prospectus.
4. Committee members will vote on the success of the oral defense meeting. The committee must reach a consensus on their decision.

5. A successful defense of your prospectus MUST be completed before you begin work on your research project, including any data collection.
    a. NOTE: This requirement does not apply to a 3-paper model dissertation. In this case, papers may be in progress prior to the successful prospectus defense.
iii. See the USA Graduate School website for additional information, guidelines, and template.

c. **IRB Approval -** IRB Approval: If your study involves human research, you must obtain USA Institutional Review Board (IRB) approval prior to data collection.

d. **Dissertation Writing** – Your dissertation is the written document detailing the results of your research study.
    i. **Key Components (Traditional Dissertation Model)** - Your dissertation must contain and address certain key elements:
        1. Problem/topic
        2. Review of existing body of knowledge
        3. Description of study (must include subjects, procedures, equipment, materials and other pertinent information)
        4. Results
        5. Analysis of results
        6. Implications and impact on existing body of knowledge
    ii. **Requirements for a 3-Article Dissertation** - A 3-Article Dissertation model may only be used with the approval of the Dissertation Chair. This model is not appropriate for all areas of research.
        1. If approved, the Dissertation Chair will provide details on specifications, components, and requirements for this type of dissertation.
        2. Be sure to review the School of Computing 3 Model Dissertation Model document, available from the Director of Graduate Studies.
    iii. **Formatting** – Your dissertation must follow acceptable formatting and referencing styles. You may use APA, MLA, IEEE, etc. However, you must follow **exactly** the formatting requirements of the USA Graduate School as indicated in their documentation - https://www.southalabama.edu/colleges/graduateschool/thesis.html. Be sure to review the specific requirements outlined in the Guide for Preparing Theses and Dissertations and the Thesis Template (be sure to read all of the comments as well as the text contained in the template). All dissertations completed at USA are published in the ProQuest online database.
    iv. **Approval Process** – You will work primarily, but not exclusively, with your Dissertation Committee Chair on the writing of your dissertation. The writing

process will be iterative and cyclical – be sure you allocate sufficient time in your schedule for the entire review process.

1. Chair Review - You will write portions or chapters of it at a time, submit it to your Committee Chair for review and feedback (this may take 1-2 weeks), make corrections, and submit again for additional review and feedback.
   a. The chair is responsible for ensuring that the dissertation has been checked for plagiarism through TurnItIn.com, or another similar program.
2. Committee Review - Once the document has the approval of your Committee Chair, it will be sent to the entire committee for their review and feedback (this may take 1-2 weeks), make corrections, and submit again for additional review and feedback.
   a. Once the entire committee approves, a dissertation defense meeting may be scheduled.
3. Director of Graduate Studies Review – You need to submit your almost finalized dissertation to the Director of Graduate Studies for review of the formatting and template requirements. This process is cyclical as well so allow adequate time for the review, feedback, and correction cycle.
4. Submit a copy of your signature page to the USA Graduate School for approval before the defense meeting.

v. **Dissertation Defense –** Your dissertation must be presented to your committee, and the USA Research Community, during a publicized dissertation defense meeting.

1. Students must be enrolled in at least one semester hour of CIS 799 during the semester they defend their dissertation.
2. All members of your committee must attend (in person or virtually) the Dissertation Defense meeting.
3. You must be prepared to answer questions regarding your research, including methodology, data analysis, and conclusions.
4. Committee members will complete a grading rubric to be turned into the Director of Graduate Studies.
5. Committee members will vote on the result of the student's oral defense. The committee must reach consensus on a passing result.
6. A successful defense of your dissertation, including all indicated updates and corrections, MUST be completed before it can be submitted to the USA Graduate School.

vi. **Defense Submission** –

1. Once your dissertation has been successfully defended, the members of your committee and the Director of Graduate Studies must sign your approved signature page. This may be done electronically.
2. The finalized copy of dissertation must be submitted to the Director of Graduate Studies for final review and approval.
3. The members of your committee and the Director of Graduate Studies must also sign your [Dissertation Submission form](). This may be done electronically or in person.
   a. The Director of Graduate Studies will not sign the submission form until the finalized copy of the dissertation has been submitted to them and approved.
4. The student will electronically submit the signed signature page, the dissertation document (as a searchable pdf or word document), and the signed Dissertation Submission Form to the USA Graduate School. Scanned pdf's and paper copies will not be accepted. Be sure to be aware of the submission deadline dates as indicated on the [USA Graduate School]() website.

4) **Individual Development Plan** – PhD students are required to create and maintain an **individual research development plan (IDP).** The Individual Development Plan (IDP) is designed to help you break down your journey through the SoC PhD program into clear short- and long-term goals as well as steps towards achieving these goals.

A well-crafted IDP is both a plan that identifies your academic and career goals and a communication tool that allows you to have productive conversations with your advisors and mentors about your goals and what support, advice, and direction you will need in the upcoming year(s).

The IDP is intended to help you reflect and plan for the coming year. The IDP is not a contract, so don't worry about setting ambitious goals and feel free to revise your IDP as your goals change.
   a. Access the IDP site at https://myidp.sciencecareers.org/
   b. Learn more about the value of IDPs and how to build, update, and use them by reading the articles linked to on this page in the "[myIDP series]()". You should start with the article titled "You Need a Game Plan".
   c. Click the "First Time Here" button to create your account and begin creating on your IDP.
   d. You should regularly return to this site to update your IDP.
   e. At the conclusion of each academic year (April/May) you are required to schedule a meeting with your advisor to review and update your IDP. If you do not have an advisor, you will meet with the Director of Graduate Studies.

5) **Graduation** – PhD students must apply for graduation for the term they submit their finalized and approved dissertation to the USA Graduate School. For specific information see the [Registrar's Website](#).

   a. Due to the cyclical review process and the graduate school submission deadlines, it may not be possible to know which semester you are going to graduate until after the posted graduation application deadline.

   b. Many PhD students complete a [Late Graduation Application](#) to avoid having to apply for graduation multiple times, as the graduation fee is required to be paid every time you apply for graduation. This does incur a small late fee.

   c. PhD students who participate in the USA Graduation ceremony will be hooded on stage by their Dissertation Committee Chair, or other committee member if the Chair is not available.