# Table of Contents

WHY THIS HANDBOOK? ......................................................................................................................................................... 2
MEET THE FACULTY .................................................................................................................................................................... 3
REQUIREMENTS TO ENROLL ................................................................................................................................................. 4
  Transfer of Credit from Other Universities ......................................................................................................................... 4
  Registration ............................................................................................................................................................................... 4
  Readmission ............................................................................................................................................................................. 4
FINANCIAL ASSISTANCE: ASSISTANTSHIPS – TEACHING OR RESEARCH ................................................................. 5
  Fellowships ............................................................................................................................................................................... 5
  Assistantships ........................................................................................................................................................................... 5
PROGRAM DESCRIPTION AND GENERAL REQUIREMENTS ............................................................................................... 6
  Master of Science (M.S.) ........................................................................................................................................................... 6
    Thesis Option ......................................................................................................................................................................... 6
    Non-Thesis Option .............................................................................................................................................................. 6
  Doctor of Philosophy (Ph.D.) ............................................................................................................................................... 7
    Required Coursework .......................................................................................................................................................... 7
PLANNING A GRADUATE PROGRAM ................................................................................................................................ 8
  Planning a Research Component ......................................................................................................................................... 8
  Selection of a Major Professor .............................................................................................................................................. 8
  Selection of a Committee ....................................................................................................................................................... 8
  Preparing a Proposal ........................................................................................................................................................... 8
Exams and Defenses ............................................................................................................................................................... 9
  Master’s Students .................................................................................................................................................................... 9
    Coursework Option .......................................................................................................................................................... 9
    Thesis Option ................................................................................................................................................................. 9
  Doctoral Students ............................................................................................................................................................ 9
Individual Study ..................................................................................................................................................................... 11
Annual Review ...................................................................................................................................................................... 11
Graduation ............................................................................................................................................................................. 11
WHY THIS HANDBOOK?

The purpose of this handbook is to help students understand the requirements and expectations that are involved in the Computer Science and Computer Engineering graduate programs.

This handbook supplements the Graduate School Catalog and other materials provided by the Graduate School and the College of Engineering.

The CSCE department may have additional requirements beyond the graduate school requirements. Please refer to the Graduate School Catalog, this handbook, and your major advisor when planning or revising your program of study.

This department offers two Masters of Science graduate programs:

- Master of Science in Computer Science
- Master of Science in Computer Engineering

These programs are designed to:

- Provide students with opportunity to broaden their academic background
- Expose students to hands-on research
- Improve students report writing and oral presentation skills

A coursework-only Master of Science degree is offered and requires additional coursework.

An Engineering Doctoral (Ph.D.) degree is offered in the Computer Science and Computer Engineering department with a concentration in either area of study. Students will learn research techniques and knowledge of how to compile and organize data in a form suitable for publication in circulated literature. All Ph.D. candidates are expected to be capable of independent study and to possess the ability to further their knowledge through research and other creative pursuits.

Department Contact Information:

Main Office 479-575-6197
Graduate Coordinator – Dr. Gordon Beavers, gordonb@uark.edu
CSCE Department http://computer-science-and-computer-engineering.uark.edu

Additional information can be found at:

Graduate School http://graduate-and-international.uark.edu
College of Engineering http://engineering.uark.edu
MEET THE FACULTY
To view profile click on the name.

David Andrews  Gordon Beavers  Christophe Bobda  Jia Di  Michael Gashler

John Gauch  Susan Gauch  Miaqing Huang  Qinghua Li  Wing Li

Frank Liu  Brajendra Panda  Pat Parkerson  Matthew Patitz  Dale Thompson

Xintao Wu
REQUIREMENTS TO ENROLL

To be considered for regular admission to graduate standing, applicants must comply with all general requirements of the Graduate School. In addition to the general Graduate School requirements, applicants must meet the following specific requirements to be accepted for graduate study in the Computer Science and Computer Engineering department:

- GPA of 3.0
- GRE (Graduate Record Examination) verbal, quantitative, and analytical scores;
  - minimum required: verbal 146, quantitative 157, and analytical 3
- for foreign applicants
  - TOEFL (Test of English as a Foreign Language) minimum score 79
  - IELTS (International English Language Testing System) score of 6.5
- Statement of Purpose
- CV or Resume
- Writing Samples (Publications or Reports)

Transfer of Credit from Other Universities
A Masters student may apply to receive transfer credit for a maximum of six credit hours from another recognized graduate school in the United States, provided the class grade was B or better and the student’s faculty advisor provides written consent to the Graduate Coordinator. Transfer of credit from an institution from outside the U.S. is not permitted.

Registration
It is highly advised that graduate students register during priority registration. Late registration may affect tuition waivers and employment processing for graduate students on assistantships. Students are required to register every spring and fall until they complete the degree requirements, including the defense. A student who has not been continuously enrolled will have to follow the CSCE department policy to be readmitted to the program. Students who defend in the summer and were enrolled in the previous spring semester will not be required to register if all coursework and thesis hours are completed; however students must defend prior to the summer publish deadline determined by the Graduate School.

Readmission
Readmission is not automatic and students may be readmitted if the cumulative grade-point average on all graduate credits attempted during previous semesters is at least a 3.0 and the student’s graduate status at the end of the previous enrollment was in good standing. Absence from the University does not change the time limits set for completing degree requirements.
FINANCIAL ASSISTANCE: ASSISTANTSHIPS – TEACHING OR RESEARCH
There are many funding opportunities for the graduate degree program. Students entering with a Bachelor’s degree may be nominated by the department for a Distinguished Academy Fellowship (DAF) or a Distinguished Doctoral Fellowship (DDF). The department also offers graduate research and graduate teaching assistantships.

Fellowships
Fellowship nomination deadline: The nomination deadline in the graduate school is February 1. The Computer Science and Computer Engineering department encourages prospective applicants to complete their graduate applications for admission by December 15.

- Distinguished Doctoral Fellowship: $22,000 annual fellowship supplement, renewable for up to three years after the initial award year, for a maximum award of $88,000 over 4 years. The fellowship award is paid in increments of 1/12 each month. A half-time 12-month graduate assistantship provided by the department includes a monthly stipend and a tuition waiver for degree-related courses, provided the student is properly enrolled, maintains academic good standing, and makes good progress toward completion of a degree.

- Doctoral Academy Fellowship: $10,000 annual fellowship supplement renewable for up to three years after the initial reward, a 12-month graduate assistantship provided by the department, and payment of tuition for degree-related courses, provided the student is properly enrolled, maintains academic good standing, and makes good progress toward completion of a degree.

Assistantships
There are two types of assistantships available: Graduate Research Assistantships (GRAs) and Graduate Teaching Assistantships (GTAs). They include a monthly stipend of $1650 per month for Ph.D. students and $1300 per month for M.S. students along with a tuition waiver for degree-related courses, provided the student is properly enrolled, maintains academic good standing, and makes good progress toward completion of a degree. Submit the completed Application for Graduate Assistantship to the department. Interested prospective students are encouraged to submit their GTA applications by February 15. Late applications for GTAs will be considered as the need arises. GRAs are administrated by faculty members. Applications for GRAs are considered any time funds become available. Other assistantship opportunities are available on campus.
PROGRAM DESCRIPTION AND GENERAL REQUIREMENTS

The department offers programs in Computer Science and Computer Engineering in both M.S. and Ph.D. All rules and regulations of the CSCE department, the College of Engineering, and the Graduate School must be followed. Students must maintain a 3.0 GPA or higher, with no more than one “C” grade. The second “C” grade will result in dismissal from the program. No credit will be received for courses with “D” or “F” grades; however, such grades will be included in the GPA calculation. A thesis is not required; however, towards the end of the program non-thesis students will be required to complete a comprehensive oral exam.

Master of Science (M.S.)

Thesis Option

- A minimum of 24 semester hours of graduate coursework of which at least 15 must be CSCE courses 5000 level or above. The remaining 9 hours may include no more than 6 hours of transfer work, 3 hours of individual study, 6 hours from outside the department, or 9 hours of courses taken at the 4000 level.
- A minimum of 6 hours of CSCE 610V – Master’s Thesis.

Non-Thesis Option

- A minimum of 33 hours of graduate coursework of which at least 21 hours must be CSCE courses 5000 level or above. The remaining 12 hours may include no more than 6 hours of transfer work, 3 hours of individual study, 6 hours from outside the department, or 9 hours of courses taken at the 4000 level.
Doctor of Philosophy (Ph.D.)

Required Coursework

Without Master's degree

- A minimum of 72 hours of graduate-level credit beyond the bachelor’s degree, including a minimum of 42 hours coursework and a minimum of 30 hours dissertation.
- A minimum of 30 hours of coursework must be at 5000 level or above. Only 3 hours may be from outside the CSCE department with consent of the student’s Advisory Committee.
- A minimum of 9 hours must be completed in a set of coherent courses in a related subject area approved by the student’s advisory committee.
- A minimum cumulative grade-point average of 3.0 must be maintained on all graduate courses attempted.
- A dissertation on a topic in the student’s major field of study must be completed and defended.

With a Master’s degree

- A minimum of 42 hours of graduate-level credit beyond the master’s degree, including a minimum of 18 hours coursework and a minimum of 30 hours dissertation.
- A minimum of 18 hours coursework must be at the 5000 level or above. Only 3 hours may be from outside the CSCE department with consent of the student’s Advisory Committee.
- Upon recommendation of the student’s advisory committee, a student entering with a master’s degree may receive credit for up to 30 semester hours. If the 30 hours includes master’s thesis, the committee may credit up to 6 hours of thesis research toward the dissertation requirement.
- A minimum of 9 hours must be completed in a set of coherent courses in a related subject area approved by the student’s advisory committee.
- A minimum cumulative grade-point average of 3.0 must be maintained on all graduate courses attempted.
- A dissertation on a topic in the student’s major field of study must be completed and defended.
PLANNING A GRADUATE PROGRAM

Application for admission to a graduate program implies a commitment by the student to acquire further education in a chosen field of practice. The student is responsible for initiating actions required for fulfilling the requirements for the degree. This includes taking the initiative to see that all deadlines for activities and submission of forms are met. The student is responsible for keeping his/her major professor informed of the progress on assignments, for initiating and conducting a research project with the assistance and cooperation of the major professor, and for scheduling committee meetings and candidacy exams.

Planning a Research Component
Writing a research paper is a significant part of a thesis-based M.S. or a Ph.D. degree. For a thesis-based M.S. program, the paper is a thesis; for a Ph.D., it is a dissertation. A thesis or dissertation is based on research a student performs under the supervision of a professor. The student is responsible for submitting a Thesis Title form at least three months prior to graduation or a Dissertation Title form at least one year prior to graduation.

Selection of a Major Professor
A member of the active graduate faculty within the department will serve as the major professor for directing a student’s program of study and should be chosen by the student prior to the second semester of enrollment. This selection is based largely on the common interests of the student and the faculty member. The major professor is the student’s academic advisor and will assist the student in choosing the remaining members of his/her committee.

Selection of a Committee
The student’s major professor will serve as chairperson of the committee. Committee members are selected from active department or university faculty whose educational and research interests are best suited to guide the student and evaluate the progress of his/her graduate study. M.S. Committee members must be selected from graduate faculty members within the student’s major department. The Graduate School requires a minimum of three members with group III or higher graduate faculty status. Ph.D. committees must consist of a minimum of three members within the student’s major department and one member outside of the student’s major department, all of whom have group I or II graduate faculty status. The student is responsible for submitting the committee form to the department’s main office prior to the second semester of enrollment.

Preparing a Proposal
Master’s students who have chosen the thesis option and all Doctoral students will prepare a proposal before beginning their research. Students should work closely with their major advisor to ensure all elements are completed in a timely manner.
Exams and Defenses

Master’s Students
All master’s students must pass a comprehensive exam or thesis defense in at most two attempts. The following must be met before the first attempt:

- Completed 24 hours for coursework option or 21 hours for thesis option. All hours must be applicable toward the degree.
- Cumulative grade-point average of all graduate-level courses of 3.0 or above.
- Deficiencies assigned upon admission must be satisfied.
- Deficiencies assigned by the student’s committee must be satisfied.

Coursework Option
Students who have chosen the coursework option will complete a comprehensive exam. This is an oral exam covering all coursework required for the degree.

Thesis Option
Students who have chosen the thesis option will present the Master’s Thesis to their committee during the last semester of study. The student will be judged by how well he/she performs on the written and oral tests, the quality of his/her Master’s Thesis, the presentation, and how well he/she responds to questions from the committee.

Doctoral Students
All doctoral students must pass the qualifying exams and submit a proposal and dissertation defense.

Qualifying Exams
All Ph.D. students admitted without a Master’s degree or a Master’s degree in an area other than Computer Science or Computer Engineering must take the qualifying exams after completing the second year of study. Students admitted with a Master’s degree in Computer Science or Computer Engineering must take the exams after completing the first year of study. Students who received their BS degree from this CSCE department and earned A’s in any of the courses required for the qualifying exam will be exempt from those sections. Students who received their BS from outside this department can be exempt by taking the undergraduate course, or the advanced version if available, required for the qualifying exam. To be exempt, the undergraduate level course representing each section of the exam must be passed in one attempt with an A prior to the date of the scheduled exam. Undergraduate courses taken will not count for graduate degree credit. The exams are given early in the fall and spring semesters. The exam consists of four sections and each section is two hours in length.
The Computer Science sections consist of Algorithms, Operating Systems, Formal Languages and Database Management.


The qualifying exam is scored Pass or Fail in each of the four sections. If a student fails any section of the exam he/she must retake that section the next time the exam is given. A waiver to this policy may be requested by the student’s major professor. A second fail will result in termination from the doctoral program. If a student is required to take the exam but does not do so he/she will be considered to have failed the exam. Students will be notified of the exam results approximately two weeks after completion of all sections.

Once the Qualifying Exam has been passed the student must maintain continuous enrollment in the Ph.D. program, including spring, summer and fall. The student must be enrolled in at least one hour of dissertation to fulfill this requirement whether the student is in residence on campus or not.

Proposal Defense
The purpose of the proposal defense is to insure that the student has adequate graduate academic training to undertake a meaningful research project. The student will defend the proposal to their chosen committee at least one year prior to graduation. The defense will result in a Pass or Does Not Pass score. Once the committee votes to pass the proposal, the student is admitted to Candidacy and may proceed to work towards completion of the remaining requirements of the degree and the student must enroll in at least one hour of CSCE 700V during the spring, summer and fall semester until the degree is completed. It is the student’s responsibility to submit all required forms prior to the proposal.

Dissertation Defense
The dissertation defense is scheduled once the student has completed the dissertation to the satisfaction of the major advisor. Copies of the dissertation should be submitted to each committee member. The student must complete the Dissertation Defense Announcement on the Graduate School website at least two weeks prior to the date of defense. The student should consult the Graduate School for deadlines for submission of the dissertation.
Individual Study
Enrollment in CSCE 590V Advanced Individual Study is by instructor consent. The instructor teaching the individual study will need to complete a CSCE 590V Individual Study – Proposal form detailing the course content and deliverables that have been discussed and agreed upon with the student. The instructor will need to email the form to the Graduate Coordinator no later than five working days prior to the first day of class. If the proposal is approved, the student will be registered for the course. Proposals that are not submitted by the deadline may not receive due consideration and may not be approved.

The purpose of offering individual study courses is so students can pursue research avenues that are not provided by named courses in the catalog of studies.

Annual Review
Every graduate student is reviewed annually for progress towards his/her degree. This review will take place in the spring semester. At a minimum, the review covers (a) if the student has completed courses with an adequate grade-point average; (b) if the student is making satisfactory progress towards their thesis/dissertation/coursework requirements; (c) if the student has completed all required examinations; (d) if the student is completing other requirements for the degree. After the review, the Graduate Student Annual Review form will be signed by the student and the Graduate Coordinator and will be submitted to the Graduate School to be included in the student’s file.

Graduation
A student cannot be awarded a degree without filing an application for graduation with the Registrar’s Office and paying the appropriate fees. The application is available in the Student Center of UA Connect and should be submitted for the semester in which the student expects to complete all requirements for the degree. For additional information please visit the Registrar’s Office website.