

Graduate Student Handbook

2011-2012

**Computer Science Department
Western Washington University**

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Welcome

The faculty and staff of the Computer Science Department welcome you to Graduate School and wish you success in the pursuit of your Master of Science in Computer Science.

Our graduate program requires a student to be independent and responsible to the greatest extent possible. Staying informed and keeping in touch with your supervisor will help you manage that independence and responsibility. A number of sources of information are available to assist you:

1. The academic e-catalog: <http://catalog.wwu.edu/>. It contains the basic Graduate School regulations as well as the academic requirements and course descriptions. You will find important dates in the University Academic Calendar, and writing proficiency requirement.
2. The Departmental Graduate Student Handbook: <http://cs.wwu.edu/grad/handbook.pdf>. This handbook provides a general description of the MS Computer Science program, helpful guidelines, forms required, and other useful information.
3. The Graduate School Website: <http://www.wwu.edu/depts/gradschool/>. This Website contains important and useful information to guide you through your course of your study at Western. Pay particular attention to important dates, deadlines, scholarship, financial aids, and requirements.
4. The College of Science and Technologies: <http://www.wwu.edu/depts/cst/>. The college provides information about academic opportunities, research projects, teaching assistants, and scholarships.
5. The Computer Science Department: <http://www.cs.wwu.edu/>. The departmental Website provides important information about courses offered each academic year, faculty and staff contact information, faculty members' Websites that contains their research interests, and course information, and job opportunities.
6. The address of the Graduate School: 516 High Street, Old Main 530, Bellingham, WA 98225-9037 360-650-3170,; gradschool@wwu.edu

Welcome on board and best wishes from the faculty and staff as you begin your graduate program here at Western!

Mission Statement

Graduate Program in Computer Science

The faculty and staff of the Computer Science Department are dedicated to training and preparing students to become computer scientists. We believe that computer science has been and will continue to contribute greatly to all disciplines of study and world economy.

We provide a high quality education to prepare students for productive careers in industry, academia, and government in a nourishing environment for teaching, learning, and research in the theory and applications of computing. This training is offered under the direction of the Graduate School at Western Washington University.

The graduate program in the Computer Science Department involves students in courses on computer science theory, concepts, and practice and in research projects. Students graduating from our program will have the ability to apply computing knowledge and mathematics to real world problems. They will be able to analyze problems and identify the computing requirements appropriate to its solution. Students will master the design-implementation-evaluation cycle for computer-based systems, processes, components, or programs to meet desired goals. Our program provides students with an understanding of professional, ethical, legal, security and social issues and responsibilities. Our excellent preparation for our students will have a profound impact on the future of humanity.

Goals:

1. To graduate students with strong, in-depth background in computer science
2. To prepare students for PhD programs and advanced careers in information technology
3. To engage students in high quality research-oriented projects

Objectives:

1. To educate students in core concepts in computer science
2. To provide students with in-depth knowledge, skills, and experiences in computer science
3. To focus on the applied aspects of computer science, especially real-world projects that use core concepts and expert knowledge of computer science
4. To provide students and faculty opportunities to engage in research in computer science

Computer Science Graduate Program Prerequisites

The Computer Science Department offers a Master of Science Degree in computer science. This graduate program is designed to provide the student with both breadth and depth in the theoretical bases of the disciplines as well as competence in the real world practice.

Students who have completed an undergraduate degree, and who meet the requirements of the Graduate School and who show evidence of superior scholarship are invited to apply for admission to the graduate program in computer science.

Students may be admitted into the computer science master's degree program in one of three ways: full admit, full admit with prerequisite course work, and provisional admit. Students who have a sufficient background in computer science, i.e. an undergraduate degree in computer science, and who meet the general requirements of the Graduate School can be given a "full admit".

Due to the nature of this field of study, it is often the case that students with an undergraduate degree in an area other than computer science seek admission to the graduate program in computer science. Such students usually require a number of prerequisite undergraduate courses before they can embark on their graduate studies. If they meet the other requirements of the Graduate School, such students can usually be given a "full admit with prerequisite course work". The student is admitted into the graduate program but is required to complete a number of undergraduate prerequisite courses.

Other constraints may be placed on such admissions, such as a minimum acceptable grade for the prerequisites and perhaps a time frame for completion of the prerequisites. The exact nature and composition of the prerequisite course work will be determined on a case by case basis. In rare cases, students who do not meet the general requirements of the graduate school, for example do not have the required minimum GPA, can be given a "provisional admit" provided their background is such that it indicates a high probability of success in the program.

In case of provisional admission, the program advisor may interview the candidate individually and consider the following factors:

1. Related background knowledge and work experience
2. Classes taken since graduation
3. Reference letters
4. GRE scores

Application Information

Graduate Program Admission Deadlines:

1. Fall Quarter, April 15
2. Winter Quarter, October 1
3. Spring Quarter, February 1

Teaching Assistant Application Deadlines:

It is the same as admission deadlines. Application requirements and forms are available from the Graduate School website: <http://www.wvu.edu/depts/gradschool>.

GRE Test: GRE General Test score must to submit directly to the Graduate School. The minimum GRE score is the same as the requirement of the Graduate School. Applications cannot be reviewed until test scores are received. The deadline is the same as the application dead line. Three scores are reported on the GRE General Test:

1. Verbal Reasoning score reported on a 200 – 800 score scale, in 10-point increments.
2. Quantitative Reasoning score reported on a 200 – 800 score scale, in 10-point increments
3. Analytical Writing score reported on a 0 – 6 score scale, in half-point increments

English Language Proficiency:

All applicants must obtain at least the minimum TOEFL scores (227 computer-based test (CBT), 567 paper-based test, 86 internet-based test) for admission eligibility unless English is your native language; or you have earned, or are in the process of earning, a baccalaureate (or higher) degree from a regionally accredited U.S. institution; or you earned your degree at an institution where English was the language of instruction.

Grade Point Average:

In order to be eligible for full admission, applicants must have at least a 3.0 GPA (on 4.0 scale) over the last 60 semester-hours or 90 quarter-hours of study. Post baccalaureate coursework must be “upper-division” at a four-year university to be included in GPA calculation. Applicants with advanced degrees from accredited institutions are considered to have met GPA requirements.

Graduate School Admission Requirements:

<http://catalog.wvu.edu/content.php?catoid=5&navoid=415>

Computer Science Graduate Program Policies

Program Enrollment Limits: depends on faculty recourses

Core Course Enrollment Limits: no more than 25 students

Elective Course Enrollment Limits: approximately 15 students

Expectations: Approximately half of students are in first year of program and half in the 2nd year.

Undergraduates taking Graduate Classes: Students must meet graduate school criteria of at least 3.0 GPA and senior status; no exceptions (Note that a GPA of 2.96 – 2.99 is rounded up to 3.0); furthermore, they must also have 3.0 GPA or greater in all computer science courses.

Honors Program: Any student in the honors program is automatically eligible to take graduate courses. Only undergraduates in the Honors Program will be allowed to take the 4 core courses, and there are no exceptions. If students wish to take these courses they should apply to the Honors program or get instructor's permission.

Graduate Elective Courses: Undergraduate and Post-Baccalaureate Enrollment in 500/600 Level Courses must follow the instruction of the Graduate School.: <http://catalog.wvu.edu/content.php?catoid=6&navoid=622>.

Counting Undergraduate Courses for Graduate Degree: The department does not allow counting undergraduate 400-level courses towards the graduate degree.

Credit Splitting of graduate course credits: Will not be allowed, no exceptions. If any part of a graduate course is used to fulfill the B.S. degree, no part of that course may be used to fulfill the M.S. degree (except the core courses CSCI 509, 510, 511, and 512 for Honors students).

Explanation of credit splitting: Undergraduate students can take computer science graduate electives and count them toward the 12 credits of electives for their B.S. If they are admitted to computer science graduate program, they are not allowed to count any graduate elective used for the B.S. degree towards the M.S. degree. That is, students want to split one graduate elective credit between their B.S and M.S degrees. This is called credit splitting.

Course Requirements

The core curriculum consists of five courses of 4 credits each.

1. [CSCI 509 – Operating System Internals](#)
2. [CSCI 510 – Automata and Formal Language Theory](#)
3. [CSCI 511 – Analysis of Algorithms](#)
4. [CSCI 512 – Design and Implementation of Computer Programming Languages](#)
5. [CSCI 514 – Research Methodology in Computer Science](#)

These courses must be taken by all students in the MS in computer science program. These five courses should be scheduled during the first three terms the student is enrolled in the MS program or the first three terms following the completion of assigned prerequisite courses.

The following course *must* be taken by all students in each quarter the student is enrolled in the MS Computer Science program, up to a total of 6 credit hours.

[CSCI 590 – Graduate Seminar](#)

Qualifying Examination:

A qualifying exam covering CSCI 509, 510, 511, and 512 will be given to the student after completion of those courses. To be advanced to candidacy in the MS program in computer science the student must pass the qualifying exam. The student is responsible for requesting of the faculty that the qualifying exam be administered when the conditions have been met.

Advancement to Candidacy

Students are advanced to candidacy when they have demonstrated a reasonable likelihood of completing their program of study. The student must have completed the core curriculum courses with a B or better GPA and must have passed the qualifying exam. Students are recommended for candidacy by the Graduate Committee.

Elective Courses

If possible, the student should take elective courses in support of their area of research.

Research Experience

In addition to the five core courses and five elective courses, all students in the MS in computer science program are required to take three research experience courses. The student should register for one of these courses each of the last three terms of study in the MS program. The three research experience courses are tied to one of a number of ongoing projects in the computer science department. Effectively, the student is joining that research team effort by registering for these courses. As such, the student should discuss their intentions with the faculty members involved in that project prior to registering for these courses. The research experience courses are numbers CSCI 601, CSCI 602 and CSCI 603. The CSCI 601, CSCI 602 and CSCI 603 sequence should be taken after the student has completed the qualifying exam for the core courses.

Total Credit Hours Required for the MS Degree in Computer Science

Core Courses: 5 courses x 4 credits = 20 credits

Graduate Seminar: Variable, 3 to 6 credit hours

Elective Courses: 5 courses x 4 credits = 20 credits

Research Experience Courses: 3 courses x 4 credits = 12 credits

Total: 55-58 credits + Comprehensive Examination

Five-Year BS and MS Fast Track Program

The Five-Year BS + MS Fast Track program makes it possible for exceptional undergraduate computer science majors to complete both a BS and MS degree in computer science in five years. Computer science majors who qualify will take four core courses from the graduate program when they are seniors. The computer science master's degree may then be completed in only one additional year of study at the master's level after students have applied to, and been accepted as, master's degree candidates by the WWU Graduate School.

Computer science majors who have achieved a GPA of 3.0 or above in their first three years as an undergraduate should contact the computer science graduate advisor. Applications are available at the graduate advisor's office, the undergraduate advisor's office, and may be downloaded from the computer science Website, www.cs.wvu.edu.

Students should apply for admission into the undergraduate honors program after the completion of their junior year of study. Once admitted to the honors program, students will take the four MS core curriculum courses. The course substitutions are: CSCI 509 for CSCI 460, CSCI 510 for CSCI 401, CSCI 511 for CSCI 405, CSCI 512 for CSCI 410. A Fast Track student may take additional 500 level classes for transfer to the Fast Track Master program as an undergraduate. These classes may not be used for any undergraduate requirements to be eligible for transfer to the Master program. To request the transfer, use the Graduate School "Transfer Credit Request" found at http://www.wvu.edu/gradschool/admitted_students/transfer_credit_request.shtml.

After students graduate with the BS degree in the computer science honors program, they will then complete all remaining requirements for the MS degree, i.e., CSCI 601, 602, 603 plus six graduate electives. Registering for three courses per term, it is possible to complete all MS requirements in only one additional year. When students enter the MS program via this path, the qualifying examination will be given during their first term as a graduate student, which implies that they may register for CSCI 601 while pending the outcome of the qualifying exam.

Post Baccalaureate Students

The following is the list of standard prerequisite course work required of a new graduate student who does not hold an undergraduate degree in Computer Science. Previous courses taken or work experience may satisfy some of these requirements.

A graduate student admitted with the requirement of prerequisite course work needs to meet with the graduate advisor before registering for their first quarter of study to determine which of these classes will be required for the student.

Registering as a Post Baccalaureate student will save tuition fees because Post Baccalaureate status attracts undergraduate fees. Go to this Website for more information:

http://www.wvu.edu/depts/sfs/StudentAccounts/sa_tfschedule.shtml

If a student takes financial aid, there is a limit of 55 to 58 credits. If a student separate undergraduate and graduate courses, he or she is not likely to exceed this limit.

Standard Prerequisite Courses:

CSCI 141 – Computer Programming I
CSCI 145 -- Computer Programming and Linear Data Structures
CSCI 241 – Data Structures
CSCI 247 – Computer System I
CSCI 301 – Formal Language and Functional Programming
CSCI 305 – Algorithm Analysis I
CSCI 322 – Concurrent Programming
CSCI 330 – Database System
CSCI 345 – Object Oriented Design
CSCI 352 – Unix Software Development
CSCI 367 – Computer Networks I

Math 124 - Calculus and Analytic Geometry
Math 125 - Calculus and Analytic Geometry
Math 204 - Elementary Linear Algebra
Math 341 - Probability and Statistics

Graduate Plan of Study

This Plan of Study must be completed within the first quarter of graduate study at WWU. The student and adviser will receive a copy when the Plan is approved. List the courses you wish to count toward your degree. *Note: Limit of 10 credits of Independent Study.* Attach Prerequisite Courses on separate list. Confer with your program adviser and the Graduate School regarding any subsequent changes to this Plan PRIOR to enrollment in any course not listed and approved on your Plan.

The best choice is to complete the form on line because the number of credits in total will be automatically calculated for you. Please print out your plan of study and take it to the CS Graduate Program Adviser during the first quarter of your study. If you have questions, consult CS Graduate Program Adviser before completing this form.

The completed form will be sent to the Graduate School and you will receive a copy after the Dean of the Graduate School approves it.

Graduate Plan of Study form location:

https://esign.wvu.edu/admcs/process/forms/Grad_School/Plan2.aspx

NEW Esign Forms:

Amendment to Plan of Study

https://esign.wvu.edu/admcs/process/forms/Grad_School/Amend1.aspx

Plan of Study

https://esign.wvu.edu/admcs/process/forms/Grad_School/Plan.aspx

Detailed instructions and guidelines are linked from the form to a separate page.

https://esign.wvu.edu/admcs/process/forms/Grad_School/Plan_Routing.htm

The Graduate Research Project

Before students can take CSCI 601, they must complete the research proposal form. This form can be found on the CS Graduate Program Website.

Student Name:

Student ID: W

Student E-mail:

Start Quarter:

Supervisor Name:

Project Title:

Project Description:

Plan to Submit Paper to:
(optional)

Time Line of Completion of the Project:

Student Signature

Date

Supervisor Signature

Date

Graduate Study Progress Report

Graduate Students must complete the “Graduate Study Progress Report” every academic year. This form can be found on the CS Graduate Program Website.

Student Name:
Student ID: W
Student E-mail:
Academic Year:
Supervisor Name:

Progress Report:

Student Signature

Date

Supervisor Signature

Date

Applying for Graduation

The Link to the Requirements and Deadlines from the Graduate School:

http://www.wvu.edu/depts/gradschool/pdfs/Deadlines_Current.pdf

Graduate School Requirements for Option II (non-thesis)

1. Degree Recommendation e-sign form
2. All “K” and “X” grades removed for students completing degree
3. Join the Commencement

Note: The deadline for each quarter is different. Please check the most current information from graduate school Website (see above link).

Requirements and Deadlines from CS Graduate Program:

1. Fill out the Graduation Report Form (see next page)
2. A copy of research paper
3. Proof of submission to a conference or journal
4. E-mail your paper to CS Graduate Program Adviser including the software, technical report, and related documents
5. E-mail your supervisor the “Degree Recommendation Form”
6. Your supervisor e-mail the “Degree Recommendation Form” to the CS Graduate Program Adviser his or her recommendation
7. Do all above AT LEAST THREE DAYS BEFORE the Graduate School’s deadline.
8. The Computer Science Department Graduate Committee members will review your research paper and make sure the paper meets the standard of a conference or journal paper.
9. Finally the Computer Science Graduate Program Advisor will e-mail this “Degree Recommendation Form” to the Graduate School after careful examination of your material.

MS Program Graduate Report

Students must fill out the following form and submit it to the CS Graduate Program Advisor **THREE DAYS BEFORE** the deadline of the Graduate School along with required documentations (see previous page). This form can be found on the CS Graduate Program Website.

Student Name:
Student ID: W
Student E-mail:
Finish Quarter:
Supervisor Name:

Paper Title:
Abstract:

Paper has been submitted to:

Student Signature

Date

Supervisor Signature

Date

Graduate Faculty

The Graduate Faculty members are dedicated to graduate program and good at working with students on their own research interests. We extend our research interests to supervise students. All graduate faculty members are very responsible, helpful, knowledgeable, and have strong interests in research with students.

Here is the list of graduate faculty members with some of their research interests.

1. **Fizzano, Perry**, PhD, algorithms, optimization, bioinformatics.
2. **Hearne, James W.**, PhD, artificial intelligence, computational science.
3. **Johnson, James Lee**, PhD, database theory, probabilistic algorithms.
4. **Matthews, Geoffrey B.**, PhD, artificial intelligence, data mining, scientific visualization.
5. **Meehan, Michael J.**, PhD, parallel and distributed computing, programming languages, networks.
6. **Nelson, Philip A.**, PhD, parallel and distributed computing, compilers, computer networks.
7. **Zhang, Jianna**, PhD, artificial intelligence, machine learning, robotics, natural language processing.

Welcome to another term of being a TA

Some very simple guidelines:

Remember what it is to be a student. Students are not sure what a TA is. So, the first time you come to the lab, introduce yourself, write your e-mail address on the board, and tell students where the grades will be posted (give your URL if you post on the web).

Always remember to come prepared to the lab. If you are not sure about the assignment, ask your instructor ahead of time. You should be able to anticipate most of the questions. If you do not know the answer, do not get stuck on it. Encourage discussions among students or ask help from your professor.

What to do when having problems?

In case of real emergency (fire or somebody getting hurt) you can call 911. If you have a "smaller emergency" on campus emergency team can be reached at 3911. University Police is at 3555.

If you have equipment problems, you will need to reach the CS support team. If a student does not have an account, or has difficulties login into the network, let our support team know. They can be reached at CS.Support@wwu.edu or by phone at (360) 650-2250

How do I get paid?

In order to get paid, you will need to have processed the necessary paperwork with Sue Hutchings, the CS department office manager. Every two weeks, you will need to fill up your time sheet, and have it signed by the instructor you are working for. You will not get paid if the form is not filled, or if the form is not signed.

The time-sheets have due dates (and you will be reminded of such deadlines):

**Application and Information
Needed for Graduate a Teaching Assistant**

(Fill out and email to the Graduate Program Advisor as a word attachment (**use your name as the filename**))

Name: _____ **Student Number:** _____

E-mail: _____ **Phone:** _____

Graduate Teaching Assistants manage labs for introductory CS level courses, grade programs and homework and occasionally proctor exams as required. A Teaching Assistantship is considered to be a “half time” teaching position, and therefore, TAs are expected to work 20 hours every week for the CS department. Depending on the courses and instructors, the load can be three or four labs with associated duties. TA work extends from the first week of the term, to final week. In most cases, however, labs do not meet during the first and last week of the term.

In order to find the best match between your school schedule and your TA assignments, you need to indicate in the table below the **times during which you have class meetings** and the **class you are scheduled to attend (list the course number)**.

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50					
9:00-9:50					
10:00-10:50					
11:00-11:50					
12:00-12:50					
1:00-1:50					
2:00-2:50					
3:00-3:50					
4:00-4:50					
5:00-5:50					
6:00-6:50					

Safety Information

Here is some information on methods to protect you from being the victim of a campus crime:

1. Do not prop open locked lab doors. You should never lend your proximity card to anyone.
2. Avoid working alone whenever possible. If you have to, lock yourself in the lab or office. Do not leave the door open.
3. Do not walk alone in the dark parking lot. Call campus police (650-3555) if you got lost in the campus.
4. If you find yourself in a bad situation, scream, draw attention to yourself, yell “No”, “Stop”, or “Fire”. Run away quickly to a busy area and call 650-3555.
5. Report suspicious persons to campus police at 650-3555 immediately.
6. Here is a public safety Website: <https://www.ps.wvu.edu/default.aspx>

Useful Links and Forms

1. Grad School: <http://www.wvu.edu/depts/gradschool/>
2. CS Home: <http://www.cs.wvu.edu/>
3. Catalog Home: <http://catalog.wvu.edu/index.php?catoid=5>
4. New Student Check List:
http://www.wvu.edu/depts/gradschool/admitted_students/new_student_checklist.shtml
5. Returned Students:
http://www.wvu.edu/depts/gradschool/admitted_students/returning_student_application.shtml
6. Plan of Study: <http://www.wvu.edu/depts/gradschool/pdfs/PlanOfStudy.pdf>
7. Transfer Credits:
http://www.wvu.edu/depts/gradschool/admitted_students/transfer_credit_request.shtml
8. Independent Study:
http://www.wvu.edu/depts/gradschool/admitted_students/independent_study.shtml
9. Degree Completion Deadlines:
http://www.wvu.edu/depts/gradschool/admitted_students/degree_completion_deadlines.shtml
10. Commencement:
http://www.wvu.edu/depts/gradschool/admitted_students/commencement_info.shtml
11. Form Links: <http://www.wvu.edu/depts/gradschool/forms/index.shtml>
12. Western Career Center: <http://www.careers.wvu.edu/students.shtml>
13. Financial Aid: <http://www.finaid.wvu.edu/bulletin/> the financial aid bulletin
14. Scholarship: <http://www.finaid.wvu.edu/scholarships/>
15. Tuition: http://www.wvu.edu/depts/sfs/StudentAccounts/sa_tfschedule.shtml
16. TA: http://www.wvu.edu/gradschool/funding/graduate_assistantships.shtml
17. Work Study: http://www.wvu.edu/gradschool/funding/work_study.shtml
18. Travel Grant: http://www.wvu.edu/gradschool/funding/ross_travel_grant.shtml
19. Useful Links: <http://www.wvu.edu/depts/gradschool/links/index.shtml>