



## MASTER *of* SCIENCE *in* COMPUTER SCIENCE

In Fall Quarter 2010, Seattle University will launch a new graduate program in Computer Science. Offered through the College of Science and Engineering, the 45-credit Master of Science in Computer Science (MSCS) will serve both full-time students, who can complete the program in five quarters, and professionals who wish to study part time, who can complete the program in three years.

Computer Science is the study of the theoretical foundations of information and computation, and of practical techniques for their implementation and application in computer systems. MSCS graduates will:

- Demonstrate mastery of the core areas of computer sciences, expertise in advanced areas and problem-solving skills essential to becoming competent professionals in the computing industry.
- Develop the ability to apply appropriate computer science fundamentals and practices to design and implementation of computer software.
- Gain research experience and depth in chosen area of concentration and demonstrate the ability to understand and evaluate research from computer science literature.
- Demonstrate the ability to convey technical material through both written papers and oral presentations.
- Obtain necessary background to pursue doctoral studies in computer science.
- Develop sufficient mathematical and analytical maturity for maintaining professional currency in the rapidly changing field of computer science.

The MSCS program is designed to serve students entering upon completion of their bachelor's degree as well as professionals in the computing field who desire a graduate education.

Applicants will be accepted into the program fall, winter, and spring quarters of each year.

### PRIORITY APPLICATION DEADLINES

<i>Fall 2010</i>	<i>July 20, 2010</i>
<i>Winter 2011</i>	<i>November 20, 2010</i>
<i>Spring 2011</i>	<i>February 20, 2010</i>

*International students applying from overseas and attending on a student visa should plan to apply approximately 6 months prior to the start of their intended start term.*

## APPLICATION REQUIREMENTS

Applicants will be considered individually as their application file becomes complete. Admissions decisions are made on a rolling basis.

*These items are required for application to the Master of Science in Computer Science program:*

- 1) Complete Application for graduate Admission and \$55 non-refundable application fee (fee waived for Seattle University alumni). Indicate 'MSCS in the four boxes at the top left of the application.
- 2) One set of official transcripts from last 90 quarter/60 semester credits of your bachelor's degree and reflecting a minimal GPA of 3.00. Please include official transcripts for any transfer institution credit earned during this time period, as well as any post-baccalaureate work.
- 3) Evidence of a four-year baccalaureate degree or the U.S. equivalent from a regionally accredited institution in computer science or related degree.
- 4) Official Graduate Record Examination (GRE) scores. Only test taken within the past five years will be accepted. This requirement can be waived for applicants holding U.S graduate degrees from an accredited institution.
- 5) Completed Prerequisite Form indicating plan for meeting required coursework. Applicants who have not taken all required courses may be considered on a case-by-case basis through evaluation and consideration of relevant work experience as noted on the back of this form as well as consideration of other admissions criteria.
- 6) Two recommendations for academic and/or professional references who have evaluated academic work or supervised practical experience and are able to assess the applicant's potential as a graduate student. Completed MSCS recommendation forms are required and can be found in this application packet.
- 7) Letter of intent (1-2 pages) discussing background, interests, and reasons for wanting to pursue a Masters degree in computer science
- 8) Professional resume summarizing academic and related work experience, if any.
- 9) Applicants for whom English is not a native language must demonstrate English proficiency regardless of English language studies, residence in the United States or an English-speaking country, or immigration status. Applicants with a baccalaureate degree or higher degrees from recognized colleges in the U.S., Canada, great Britain, Ireland, New Zealand or Australia, and who have continued to reside in countries where English is the primary language for at least two years prior to applying to Seattle University will have this requirement waived. English proficiency may be met with an official TOEFL score of 92 (IBT) or 580 (PBT), IELTS exam with a minimum score of 7.0, or an institutional MELAB result of at least 83%.

# CURRICULUM

The MSCS curriculum consists of 45 credits: 12 credits of required courses, 15 credits of breadth electives, 8-9 credits of general electives, and 9-10 credits for a graduate project. Students may be admitted conditionally with a requirement that they complete specified undergraduate courses before obtaining regular status in the program. A maximum of 12 credits taken as a non-matriculated student can be applied to this degree.

## REQUIRED COURSES: 12 credits

CPSC 510	Algorithms.....	4
CPSC 532	Software System Design.....	4
CPSC 545	Computing Systems .....	4

## BREADTH COURSES: 15 credits, from the following 5-credit courses:

CPSC 522	Design Patterns
CPSC 534	Software Testing and Debugging
CPSC 544	Distributed Systems
CPSC 560	Computer Networks
CPSC 565	Computer Graphics
CPSC 570	Artificial Intelligence
CPSC 571	Physical Database Design and Optimization
CPSC 572	Security in Computing
CPSC 585	Compiler Principles and Techniques
CPSC 591-593	Special Topics

## GRADUATE PROJECT: 9-10 credits, consisting of a 2-3 quarter project sequence

Choose either:

CPSC 586	Graduate Project .....	9-10
CPSC 587	Graduate Research Project.....	9-10

## GENERAL ELECTIVES: 8-9 credits, additional CPSC breadth electives and/or MSE courses

from the following list:

SEGR 523	Human-Computer Interaction
SEGR 534	Software Testing
SEGR 543	Applied Formal Methods
SEGR 550	Distributed Computing
SEGR 551	Embedded Systems
SEGR 553	Artificial Intelligence

## 2010-2011 TUITION

Courses in the MSCS program are \$719 per credit hour.

For additional information about tuition and fees, payments, and financial aid, contact Student Financial Services at [www.seattleu.edu/sfs](http://www.seattleu.edu/sfs) or (206) 296-2000.

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## FOR MORE INFORMATION

Call Graduate Admissions Office (206)

296-2000, option 1

Toll-free (800) 426-7123

Computer Science (206) 296-5510

MSCS Program Director

Dr. Yingwu Zhu:

[zhuy@seattleu.edu](mailto:zhuy@seattleu.edu)

MSCS homepage:

<http://www.seattleu.edu/scieng/comsci>

Write or Fax

Seattle University

Graduate Admissions Office

901 12th Avenue

PO Box 222000

Seattle WA 98122-1090

Fax (206) 296-5656



**OPTIONAL INFORMATION**

Are you of Hispanic/Latino Origin?  Yes  No.

If Yes, please specify:

- Central American       Hispanic       Puerto Rican       Spanish
- Chicano/a               Latino/a         South American
- Cuban                     Mexican         Hispanic Other \_\_\_\_\_

**Race: Please mark all that apply:**

**American Indian**

- Native Alaskan       Native American       Native Other \_\_\_\_\_

**Asian**

- Asian American       Filipino/a               Japanese               South Asian
- Chinese                 Indian                   Korean                 Southeast Asian
- East Asian             Indonesia               Pakistani               Vietnamese
- Asian Other \_\_\_\_\_

**Black/African American**

- African                 Black                     Caribbean               West Indian
- African American     Black Other \_\_\_\_\_

**Native Hawaiian/ Pacific Islander**

- Guamanian/Chamorro     Native Hawaiian       Samoan
- Pacific Islander Other \_\_\_\_\_

**White/Middle Eastern**

- White                   Caucasian/European     Middle East             Turk
- Arab                     Israeli                   Middle Eastern Other \_\_\_\_\_
- Persian                 Russian/Eastern European     White Other \_\_\_\_\_

**Religious Preference**

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**Gender**

- Male     Female

**Will you be applying for financial aid?**

- Yes     No

**Do you have employer tuition assistance?**

- Yes     No

**Would you like information on services available to those with physical or learning needs?**

- Yes     No

**Employment History (Please complete even if resumé is attached)**

.....

Current Employer/Organization

Employer Phone

Employer Address

City

State

Zip

Job Title

Dates Employed (Mo/Yr to Mo/Yr)

- Part-time     Full-time

Previous Employer/Organization

Employer Phone

Address

City

State

Zip

Job Title

Dates Employed (Mo/Yr to Mo/Yr)

- Part-time     Full-time

**University Relationship**

Do you have any family members who attended or graduated from Seattle University?     Yes     No    If yes, please list below.

Name	Relationship	Date Attended (Mo/Yr to Mo/Yr)	Graduation Year
.....	.....	.....	.....

How did you first hear about our graduate program?     Friend/co-worker     SU alum     Radio     Newspaper     Web Research  
 SU Mailing     Campus event     Employer Event     Other \_\_\_\_\_

What most influenced you to apply to Seattle University?

Seattle University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, marital status, sexual orientation, gender identity, political ideology or status as a Vietnam-era or special disabled veteran in the administration of any of its education policies, admission policies, scholarship and loan programs, athletics, and other school-administered policies and programs, or in its employment related policies and practices. All university policies, practices and procedures are administered in a manner consistent with Seattle University's Catholic and Jesuit identity and character. Inquiries relating to these policies may be referred to the university's assistant vice president for human resources and Equal Opportunity Officer, Gerald Huffman, University Services Building 107, (206) 296-5869, or email huffmaje@seattleu.edu.

*I certify that the information contained in this application is true and correct. I understand that misrepresentation or omission of information, such as failure to list all schools, colleges or universities attended, may result in the denial of this application, or subsequent dismissal from the university and loss of credit.*

Full Legal Signature

Printed Name

Date

**Programs**

**SCIENCE AND ENGINEERING**

- Software Engineering **SEGR**
- Master of Science in Computer Science **MSCS**

# Master of Science in Computer Science



## Supplemental Application Form

INSTRUCTIONS: Complete this form if you are applying for the MSCS program using the information on the reverse side for details. Students who have not completed the following required undergraduate courses must complete the required courses or equivalents before obtaining regular status in the program.

### Pre-requisite Courses

Required course	Equivalent course	# of credits	Term of course completion or planned completion	Grade earned	Institution where course was/will be completed	Office use only
CPSC 310 <b>Design and Analysis of Algorithms</b> 5 quarter credits						
CPSC 320 <b>Object-Oriented Development</b> 5 quarter credits						
CPSC 341 <b>Operating Systems and Networks</b> 5 quarter credits						
CPSC 370 <b>Fundamentals of Databases I</b> 5 quarter credits						

*See reverse side for course descriptions and opportunity to note related work experience.*

Please refer to the course descriptions below when selecting courses to fulfill the prerequisites for the MSCS program. On credit on the semester system is generally equivalent to 1.5 credits on the quarter system. *Courses must be taken within ten years of your intended quarter of admission unless otherwise indicated.*

**CPSC 310 Design and Analysis of Algorithms (5 quarter credits)**

Advanced data structures (e.g. sets, graphs, priority queues) and their application; algorithm analysis and design techniques, such as divide and conquer, greedy methods, branch and bound, etc. Asymptotic analysis of algorithms and introduction to computability theory.

**CPSC 320 Object-Oriented Development (5 quarter credits)**

Fundamentals and principles of object-oriented development, including classes, containment, inheritance, overloading and polymorphism. Object-oriented analysis, design and programming.

**CPSC 341 Operating Systems (5 quarter credits)**

Computer system overview (devices, interrupts, memory hierarchy), and the basic concepts of operating systems from an applications programming perspective. Topics include processes, process scheduling, threads, deadlock, synchronization, memory management, I/O, and networking.

**CPSC 370 Fundamentals of Databases I (5 quarter credits)**

Introduction to database management systems, architecture, and environment. Relational database design including data modeling and schema design. Coverage of SQL query language for application development. Overview fundamental concepts of transaction management, security and recovery control.

## Relevant Work Experience

If you do not have the course pre-requisites, please list below any computer science-related job or internship experience to date.

Job Title	Brief Description	Hours



Recommendation Form for Graduate Studies

**Part A- This section to be completed by the applicant (please print)**

Please give this form and the recommendation envelope to the person writing the recommendation. Ask the writer to return the completed form to you in a sealed envelope. Breaking the seal will render this recommendation not confidential.

.....  
Name of applicant Month and date of birth (MM/DD)

.....  
Name and title of recommender

.....  
Relationship of recommender to applicant From To

**Please recognize the confidential nature of this document. In accordance with the Family Educational Rights and Privacy Act (FERPA), after you matriculate, you will have access to this form unless (1) you waive your right to access; OR (2) your program routinely destroys recommendations after matriculation. Choose one option:**

- I waive my right to access this recommendation and understand that I will never be able to see this recommendation.
- I want to have access to this recommendation if I am admitted and matriculated, but I understand it may not be available if my program routinely destroys recommendations after matriculation.

**Part B- this section to be completed by the recommender**

The applicant is seeking admission to the master of science in computer science program. To assess the appropriateness of our program for this person, we would appreciate your candid opinion regarding the qualifications listed below. If there is any item for which you have little or no evidence, please indicate. Also, if you wish to supplement the recommendation with additional comments, attach an extra page. However, please complete this form.

.....  
Name of recommender Title Phone

.....  
Institution Email Address

.....  
Address City, State, Zip

1. Compared to individuals you have known at a similar level of development; please indicate your evaluation of the applicant by checking the appropriate rating.

	Superior Top 5%	Very Good Top 10%	Good Top 25%	Average Mid 50%	Below Average Low 25%	Unable to Judge
Academic Strength						
Creativity						
Written Communication						
Oral Communication						
Interpersonal Skills						
Problem solving skills						
Maturity						
Motivation						
Potential to Complete Degree						
OVERALL RATING						

**2. What are the applicant's strengths as you see them?**

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**3. In what areas should this person improve?**

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**4. Other comments**

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**5. Check one**

- I strongly recommend the applicant for admission.
- I recommend the applicant for admission with some reservation.
- I do not recommend the applicant for admission.

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Signature of recommender

.....  
Date

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