



Computer Science Department
State University of New York at Stony Brook
Stony Brook, NY 11794-4400

To: Computer Science Graduate Students
Subject: Proficiency Requirements for the M.S. Degree

The proficiency requirements represent fundamental knowledge expected of any Computer Science graduate by the time of M.S. certification. These requirements are enumerated below:

| | Proficiency and Courses | Approvers |
|-----|---|--|
| (1) | Theory of Computation: CSE 303 or CSE 540 | Leo Bachmair, Anita Wasilewska |
| (2) | Algorithms: CSE 373 or CSE 548 | Jie Gao, Himanshu Gupta |
| (3) | Programming Languages or Compilers: CSE 304, CSE 307, CSE 504, or CSE 526 | CR Ramakrishnan, Scott Stoller |
| (4) | Computer Architecture: CSE 320 or CSE 502 | Larry Wittie, Jennifer Wong |
| (5) | Databases: CSE 305 or CSE 532 | Michael Kifer, Scott Smolka |
| (6) | Operating Systems: CSE 306 or CSE 506 | Eugene Stark, Erez Zadok |
| (7) | Networks or Graphics or Artificial Intelligence: CSE 310, CSE 346, CSE 533, CSE 534, CSE 328, CSE 528, CSE 537 | Hussein Badr, Samir Das, Xianfeng David Gu, Klaus Mueller, IV Ramakrishnan |

The attached forms offer three options to fulfill the above requirements. Please follow the instructions for each, and turn in the forms to the CS Graduate Office *by the end of the second semester* in the program. Note that only the faculty listed in the “Approvers” column of the table may approve proficiencies for certain topics. Extensions can be granted **only** by the Graduate Academic Advisor.

Important:

1. All proficiency requirements **must be completed** by the end of the **second semester** in the program. To be in good academic standing, your **plan for completing proficiency requirements** (next two pages) **must** be approved by the Graduate Academic Advisor before the add/drop deadline of the **first** semester.
2. Undergraduate courses can be taken as CSE 587 for the purpose of satisfying proficiency requirements **only if** a similar course does not appear on your undergraduate transcript. The grade C or higher satisfies a proficiency requirement. For instance, earning a C grade for CSE 305 taken as CSE 587 satisfies the proficiency requirement in databases. **Permission of instructor and of Graduate Academic Advisor** is required to take CSE 587. The instructor will need to see an approved plan for satisfying the proficiency requirements before granting permission.
3. You can apply credits from **at most two** CSE 587 (for the total of up to 4 credits) towards the 31 credits needed in order to graduate with an M.S. degree. This is allowed **only if** CSE 587 was taken as a proficiency requirement and provided that you received a grade of B or better.

Plan for Satisfying Proficiency Requirements

Student name/ID: _____

Instructions: *Fill out this form in **duplicate**.
Submit to Graduate Academic Advisor by the first add/drop deadline.
This copy will be kept in **your file**.
This plan **must** be followed. Any revision will require re-approval.*

| Requirement | Took Elsewhere (bring a copy of your undergraduate transcript) | Plan to Take (indicate course and semester) |
|--|---|--|
| (1) Theory of Computation: <i>CSE 303 or CSE 540</i> | | |
| (2) Algorithms: <i>CSE 373 or CSE 548</i> | | |
| (3) Programming Languages or Compilers: <i>CSE 304, CSE 307, CSE 504, or CSE 526</i> | | |
| (4) Computer Architecture: <i>CSE 320 or CSE 502</i> | | |
| (5) Databases: <i>CSE 305 or CSE 532</i> | | |
| (6) Operating Systems: <i>CSE 306 or CSE 506</i> | | |
| (7) Networks or Graphics or Artificial Intelligence: <i>CSE 310, CSE 346, CSE 533, CSE 534, CSE 328, CSE 528, or CSE 537</i> | | |

Graduate Academic Advisor Signature: _____

Copy to be placed in student's file

Plan for Satisfying Proficiency Requirements

Student name/ID: _____

Instructions: *Fill out this form in **duplicate**.*
 ***Submit** to Graduate Academic Advisor by the first add/drop deadline.*
 ***Keep** this copy.*
 *This plan **must** be followed. Any revision will require re-approval.*

| Requirement | Took Elsewhere <small>(bring a copy of your undergraduate transcript)</small> | Plan to Take <small>(indicate course and semester)</small> |
|--|---|--|
| (1) Theory of Computation: <i>CSE 303 or CSE 540</i> | | |
| (2) Algorithms: <i>CSE 373 or CSE 548</i> | | |
| (3) Programming Languages or Compilers: <i>CSE 304, CSE 307, CSE 504, or CSE 526</i> | | |
| (4) Computer Architecture: <i>CSE 320 or CSE 502</i> | | |
| (5) Databases: <i>CSE 305 or CSE 532</i> | | |
| (6) Operating Systems: <i>CSE 306 or CSE 506</i> | | |
| (7) Networks or Graphics or Artificial Intelligence: <i>CSE 310, CSE 346, CSE 533, CSE 534, CSE 328, CSE 528, or CSE 537</i> | | |

Graduate Academic Advisor Signature: _____

Keep this copy for your records. Use it to seek various approvals.

Student Name: _____

ID# _____



(1) THEORY OF COMPUTATION

Proficiency Requirement

Option I

The Theory of Computation proficiency requirement can be satisfied by taking:

CSE 303, Intro to the Theory of Computation

or

CSE 540, Theory of Computation.

If either of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.

Option II

Certain undergraduate (300 level) courses that are prerequisites to graduate courses can, with the **permission of the course instructor**, be taken for graduate credit using the course designation of CSE 587.

If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.

I have registered for CSE 587, **section#** _____, in the (check one) • **fall** • **spring** • semester of _____ (year), to fulfill the Theory of Computation proficiency requirement. A final passing grade in this course will satisfy this requirement.

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Option III

A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts and syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.

The following information provided by the student is considered sufficient evidence that this student has satisfied the Theory of Computation Proficiency requirement at the level of CSE 303, with a grade of C (i.e., 2.0/4.0) or higher:

____ Took a similar course at _____ in semester _____ and received a passing grade

____ Other:

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Make a copy for your records

Student Name: _____

ID# _____



(2) ALGORITHMS Proficiency Requirement

Option I

The Algorithms proficiency requirement can be satisfied by taking:

CSE 373, Analysis of Algorithms

or

CSE 548, Analysis of Algorithms.

If either of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.

Option II

Certain undergraduate (300 level) courses that are prerequisites to graduate courses, can, with the **permission of the Course instructor**, be taken for graduate credit using the course designation of CSE 587.

If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.

I have registered for CSE 587, **section#** _____, in the (check one) • **fall** • **spring** semester of _____ (year), to fulfill the Algorithms proficiency requirement. A final passing grade in this course will satisfy this requirement.

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Option III

A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts **and** syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.

The following information provided by the student is considered sufficient evidence that this student has satisfied the Algorithms Proficiency requirement at the level of CSE 373, with a grade of C (i.e., 2.0/4.0) or higher:

____ Took a similar course at _____ in semester _____ and received a passing grade

____ Other:

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Make a copy for your records

Student Name: _____
ID# _____



(3) PROGRAMMING LANGUAGES or COMPILERS

Proficiency Requirement

Option I

The Language/Compilers proficiency requirement can be satisfied by taking:

CSE 304, Compilers; or CSE 307, Principles of Programming Languages

or

CSE 504, Compiler Design; or CSE 526, Principles of Programming Languages.

If any of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.

Option II

Certain undergraduate (300 level) courses that are prerequisites to graduate courses, can, with the **permission of the Course instructor**; be taken for graduate credit using the course designation of CSE 587.

If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.

I have registered for CSE 587, **section#** _____, in the (check one) • **fall** • **spring** semester of _____ (year), to fulfill the Language/Compilers proficiency requirement. A final passing grade in this course will satisfy this requirement.

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Option III

A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an Instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts **and** syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.

The following information provided by the student is considered sufficient evidence that this student has satisfied the Language/Compilers Proficiency requirement at the level of CSE 304 or 307, with a grade of C (i.e., 2.0/4.0) or higher:

_____ Took a similar course at _____ in semester _____ and received a passing grade

_____ Other:

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Make a copy for your records

Student Name: _____
ID# _____



(4) COMPUTER ARCHITECTURE Proficiency Requirement

Option I

The Architecture proficiency requirement can be satisfied by taking:

CSE 320, Computer Architecture

or

CSE 502, Computer Architecture.

If either of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.

Option II

Certain undergraduate (300 level) courses that are prerequisites to graduate courses, can, with the **permission of the Course instructor** be taken for graduate credit using the course designation of CSE 587.

If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.

I have registered for CSE 587, **section#** _____, in the (check one) • **fall** • **spring** semester of _____ (year), to fulfill the Architecture proficiency requirement. A final passing grade in this course will satisfy this requirement.

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Option III

A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an Instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts and syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.

The following information provided by the student is considered sufficient evidence that this student has satisfied the Architecture Proficiency requirement at the level of CSE 320, with a grade of C (i.e., 2.0/4.0) or higher:

____ Took a similar course at _____ in semester _____ and received a passing grade

____ Other:

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Make a copy for your records

Student Name: _____

ID# _____



(5) DATABASES Proficiency Requirement

Option I

The Database proficiency requirement can be satisfied by taking:

CSE/ISE 305, Principles of Database Systems

or

CSE 532, Theory of Database Systems.

If either of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.

Option II

Certain undergraduate (300 level) courses that are prerequisites to graduate courses, can, with the **permission of the Course instructor**, be taken for graduate credit using the course designation of CSE 587.

If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.

I have registered for CSE 587, **section#** _____, in the (check one) • **fall** • **spring** semester of _____ (year), to fulfill the Database proficiency requirement. A final passing grade in this course will satisfy this requirement.

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Option III

A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an Instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts **and** syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.

The following information provided by the student is considered sufficient evidence that this student has satisfied the Database Proficiency requirement at the level of CSE/ISE 305, with a grade of C (i.e., 2.0/4.0) or higher:

____ Took a similar course at _____ in semester _____ and received a passing grade

____ Other: _____

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Make a copy for your records

Student Name: _____
ID# _____



(6) OPERATING SYSTEMS Proficiency Requirement

| Option I | |
|--|--|
| <p>The Operating Systems proficiency requirement can be satisfied by taking: <i>CSE 306, Operating Systems</i> or <i>CSE 506, Operating Systems.</i> If either of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.</p> | |

| Option II | |
|--|--|
| <p>Certain undergraduate (300 level) courses that are prerequisites to graduate courses, can, with the permission of the Course instructor, be taken for graduate credit using the course designation of CSE 587.</p> <p>If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.</p> <p>I have registered for CSE 587, section# _____, in the (check one) • fall • spring semester of _____ (year), to fulfill the Operating Systems proficiency requirement. A final passing grade in this course will satisfy this requirement.</p> <p>Approval Signature of Instructor: _____ Date: _____</p> <p>Printed Name of Instructor: _____</p> | |

| Option III | |
|---|--|
| <p>A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an Instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts and syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.</p> <p><i>The following information provided by the student is considered sufficient evidence that this student has satisfied the Operating Systems Proficiency requirement at the level of CSE 306, with a grade of C (i.e., 2.0/4.0) or higher:</i></p> <p>____ Took a similar course at _____ in semester _____ and received a passing grade</p> <p>____ Other:</p> <p>Approval Signature of Instructor: _____ Date: _____</p> <p>Printed Name of Instructor: _____</p> | |

Make a copy for your records

Student Name : _____
ID# _____



(7) NETWORKS or GRAPHICS or ARTIFICIAL INTELLIGENCE
Proficiency Requirement

Option I

The Language/Compilers proficiency requirement can be satisfied by taking:
CSE/ISE 310, Data Commun. & Network; or CSE 328, Fund of Comp. Graphics

or

CSE 533, Network Programming; or CSE534 Fund. of Computer Networks; or CSE 528, Computer Graphics; or CSE 537, Artificial Intelligence.

If any of these courses were taken at Stony Brook and appear on your transcript with a passing grade, circle them here and indicate the semester.

Option II

Certain undergraduate (300 level) courses that are prerequisites to graduate courses can, with the **permission of the Course instructor**, be taken for graduate credit using the course designation of CSE 587.

If you are selecting this option, please fill in the information immediately below, obtain the signature of the course instructor, and turn in this signed form to the CS Graduate Office.

I have registered for CSE 587, **section#** _____, in the (check one) • **fall** • **spring** semester of _____ (year), to fulfill the Networks or Graphics proficiency requirement. A final passing grade in this course will satisfy this requirement.

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Option III

A proficiency requirement may also be met by showing evidence of a similar course taken elsewhere, if approved by an instructor of the course here at Stony Brook. If you are selecting this option, you should meet with the appropriate faculty member, providing copies of transcripts and syllabi. The faculty member should fill in the information below, and sign the form. You should then turn in this signed form to the CS Graduate Office.

The following information provided by the student is considered sufficient evidence that this student has satisfied the Networks or Graphics or Artificial Intelligence Proficiency requirement at the level of CSE/ISE 310 or CSE 328, with a grade of C (i.e., 2.0/4.0) or higher:

_____ Took a similar course at _____ in semester _____ and received a passing grade

_____ Other:

Approval Signature of Instructor: _____ Date: _____

Printed Name of Instructor: _____

Make a copy for your records