

|      |     |      |
|------|-----|------|
| Name | ID# | Date |
|------|-----|------|

## Planning Sheet: BACHELOR OF SCIENCE in COMPUTER SCIENCE

(Effective Fall 2013. This major consists of 64 semester credits)

### Computer Science Core Requirements:

| Term | Grade | Course # | AugCore | Title  |
|------|-------|----------|---------|--|
| ___  | ___   | CSC 160  |         | Introduction to Computer Science & Communication (Prereq: MPG 3)   |
| ___  | ___   | CSC 170  |         | Introduction to Programming (Prereq: Waived from or passed GST 100, MPG 3, & CSC 160; MAT 171 recommended)                 |
| ___  | ___   | CSC 210  |         | Data Structures (Prereq: Waived from or passed GST 100, MPG 4, CSC 170, MAT 145 or 171)                                    |
| ___  | ___   | CSC 240  |         | Introduction to Networking & Communications (Prereq: CSC 160 & MPG 3)  |
| ___  | ___   | CSC 320  |         | Algorithms (Prereq: Waived from or passed GST 100, MPG 4, CSC 210, & MAT 145 or 171)                                       |
| ___  | ___   | CSC 345  |         | Principles of Computer Organization (Prereq: CSC 210 and MPG 4)  |
| ___  | ___   | CSC 385  |         | Formal Logic and Computation Theory (Prereq: CSC 210 and MAT 145 or MAT 171)   |
| ___  | ___   | CSC 450  |         | Programming Languages & Compilers I<br>(Prereq: ENL 111 or 112 or HON 111, CSC 320 and CSC 385 or concurrent registration) |
| ___  | ___   | CSC 451  | KC      | Programming Languages & Compilers II (Prereq: CSC 345, 385 & 450)  |
| ___  | ___   | MAT 145  | NSM     | Calculus I (Prereq: MPG 4)   |
| ___  | ___   | MAT 146  | NSM     | Calculus II (Prereq: MAT 145)  |

Select & complete two (2) of the following four (4) MAT courses:

|     |     |         |                          |   |
|-----|-----|---------|--------------------------|---|
| ___ | ___ | MAT 245 | <input type="checkbox"/> | Calculus III (Prereq: MAT 146)  |
| ___ | ___ | MAT 246 | <input type="checkbox"/> | Linear Algebra (Prereq: MAT 245 or MAT 271)   |
| ___ | ___ | MAT 271 | <input type="checkbox"/> | Discrete Mathematical Structures (Recommended. Prereq: Waived from or passed GST 100; MAT 146 or MAT 145 and one of MAT 163, MAT 164, MAT 252 or MAT 287) |
| ___ | ___ | MAT 369 | <input type="checkbox"/> | Modeling & Differential Equations in Biological and Natural Sciences (Prereq: MAT 245, ENL 111 or 112 or HON 111, and COM 111 or 115 or MAT 201)          |

**Computer Science Electives (BS option):** Complete 3 courses from the following (at least 2 must be upper division)

|     |     |         |                          |  |   |
|-----|-----|---------|--------------------------|--|---|
| ___ | ___ | CSC 272 | <input type="checkbox"/> | UNIX & C (Prereq: CSC 170 or other programming language course)                                    |   |
| ___ | ___ | CSC 352 | <input type="checkbox"/> | Database Management and Design (Prereq: CSC 210)   |   |
| ___ | ___ | CSC 353 | <input type="checkbox"/> | Database Architecture and Design (Prereq: CSC 210, Recommended CSC 352)                            |   |
| ___ | ___ | CSC 373 | <input type="checkbox"/> | Symbolic Programming & Artificial Intelligence (Prereq: Waived from or passed GST 100 and CSC 210) |   |
| ___ | ___ | CSC 399 | AE                       | <input type="checkbox"/>   | Internship (P/N grading only)   |
| ___ | ___ | CSC 431 |                          | <input type="checkbox"/>   | Introduction to AI Robotics (Prereq: CSC 210)   |
| ___ | ___ | CSC 440 |                          | <input type="checkbox"/>   | Advanced Networking & Operating Systems (Prereq: CSC 240 & CSC 345)   |
| ___ | ___ | CSC 457 |                          | <input type="checkbox"/>   | Computer Graphics (Prereq: CSC 210 & MPG 4)   |
| ___ | ___ | CSC 495 |                          | <input type="checkbox"/>   | Advanced Topics in Computer Science (Prereq: instructor consent)<br>(Refer to instructor to determine if topic satisfies core or graduation requirements) |
| ___ | ___ | CSC 499 |                          | <input type="checkbox"/>   | Independent Study/Research  |
| ___ | ___ | MAT 355 |                          | <input type="checkbox"/>   | Numerical Mathematics and Computation (Prereq: MAT 146 and CSC 160, ENL 111 or 112 or HON 111, and COM 111 or 115 or MAT 201)                             |
| ___ | ___ | MIS 475 |                          | <input type="checkbox"/>   | Systems Analysis & Design (Prereq: MIS 260, 270, and 375)   |
| ___ | ___ | PHY 261 |                          | <input type="checkbox"/>   | Electronics (Prereq: MAT 146 and PHY 116 or PHY 122)  |

### Notes:

- **Keystone:** CSC 451 will satisfy the senior Keystone requirement.
- **GPA:** Students must earn grades of 2.0 or above in each course applicable to the Computer Science major. Students must also earn a minimum overall grade point average of 2.0 to qualify for graduation.
- **Abbreviation Key:** ML = Modern Language; SC = Signature Curriculum; EM = Engaging Minneapolis; AE = Augsburg Experience; KC = Senior Keystone Course; NSM = Natural Science & Mathematics - no lab; NSM-L = Natural Science & Mathematics-with lab; SBS = Social & Behavioral Science; FA = Fine Arts; HUM = Humanities

See back for information on graduation skills requirements

## Planning Sheet: GRADUATION SKILLS REQUIREMENTS

These requirements were implemented for Fall 2008. Please talk with your faculty advisor for information.

**Graduation skills, including the Quantitative Reasoning requirements, are completed as follows.** Graduation skills in Critical Thinking, Writing, Speaking, and Quantitative Reasoning are required for graduation. Critical Thinking is embedded in all majors. Plans for completion of other graduation skills are determined by the major department. Consult your department chair or faculty advisor to select appropriate courses to meet the Quantitative Reasoning (QR) graduation skill. QR is satisfied by completing one (1) Quantitative Foundational course (QF) and one (1) Quantitative Application course (QA), or one (1) combined QFA course. The most current information on Graduation Skills can be found in the Augsburg College catalog at [www.augsburg.edu/catalog/](http://www.augsburg.edu/catalog/).

**Transfer students must consult an advisor about potential adjustments to their course requirements to fulfill each graduation skill.**

| Designated Major Course                        | GRADUATION SKILLS – Computer Science B.S.   |            | Completed |
|--|---|------------|-----------|
| Embedded in major                              | <b>Writing Requirements</b><br>TWO (2) Writing courses  |            |           |
| Embedded in major                              |   |            |           |
| COM 111 or 115 or consult your faculty advisor | <b>Speaking</b><br>One (1) Speaking course  |            |           |
| Designated Major Course                        | QUANTITATIVE REASONING  |            | Completed |
| Embedded in major                              | <b>Quantitative Foundations &amp; Applications</b><br>One (1) QFA course (Prereq: MPG3)   | QFA course |           |
| – OR –   |   |            |           |
| Embedded in major                              | <b>Quantitative Foundations and Quantitative Applications</b><br>One (1) QF course (Prereq: MPG 3) <u>and</u> one (1) QA course |            | QF course |
| Embedded in major                              |   |            | QA course |

## Graduation Tally Checklist

These requirements were implemented in April 2003 and remain in effect until further notice.

| Requirement   | Progress Towards Completion |  |
|---|-----------------------------|--|
| <b>Cumulative Course Credits</b> <ul style="list-style-type: none"> <li>▪ Minimum number of course credits needed for graduation = <b>128</b></li> <li>▪ At least 32 semester credits completed at Augsburg.</li> <li>▪ 24 of last 32 semester credits completed in residence.</li> <li>▪ Second degree – minimum of 32 sem. credits completed in residence.</li> </ul> | Transfer Credits Earned     |  |
|   | + Aug. Credits Earned       |  |
|   | = Total Credits Earned      |  |
|   | # Credits Needed            |  |

|  |                |  |
|--|----------------|--|
| <b>Grade Point Average (GPA)</b> <ul style="list-style-type: none"> <li>▪ Minimum 2.0 GPA required in major, minor, &amp; overall.</li> <li>▪ Some majors require higher GPA.</li> <li>▪ Latin Honors GPA requirements:                             <ul style="list-style-type: none"> <li>○ Summa cum laude: 3.9-4.0</li> <li>○ Magna cum laude: 3.80-3.89</li> <li>○ Cum laude: 3.60-3.79</li> </ul> </li> </ul> | Cumulative GPA |  |
|  | Major 1 GPA    |  |
|  | Major 2 GPA    |  |
|  | Minor GPA      |  |

| Other Limits  | Minimum/Maximum                | Your Total |
|---|--------------------------------|------------|
| <b>Overall maximum courses graded Pass/No Pass (P/N)</b> <ul style="list-style-type: none"> <li>▪ Grade of 2.0 or above required to Pass and earn credit for course.</li> <li>▪ Maximum of 8 of 24 sem. credits P/N may be in major.</li> </ul> | Maximum of 24 sem. Credits     |            |
| <b>Major Courses graded Pass/No Pass (P/N)</b>  | Maximum of 8 semester credits  |            |
| <b>Latin Honors courses graded Pass/No Pass (P/N)</b>   | Maximum of 8 semester credits  |            |
| <b>Latin Honors traditionally graded courses</b>  | Minimum of 54 semester credits |            |
| <b>Internships</b>  | Maximum of 16 semester credits |            |
| <b>Independent/Directed Studies</b>   | Maximum of 8 semester credits  |            |

## Sample Four-Year Plan (B.S.)

This is a possible plan for the Bachelor of Science in Computer Science, though there are many configurations of courses. Students may want to consider a second major or minor. Please see a Computer Science faculty for more information.

### Freshman Year

#### Fall Term

CSC 160  
MAT 145  
ENL 111  
LAF Course  
AugSem

#### Spring Term

CSC 170  
MAT 146  
REL 100  
LAF Course  
HPE 001

### Sophomore Year

#### Fall Term

CSC 210  
REL 200  
MAT Elective  
LAF Course

#### Spring Term

CSC 240  
CSC 320  
MAT Elective  
LAF Course

### Junior Year

#### Fall Term

CSC 345  
COM 115  
LAF Course  
Modern Language

#### Spring Term

CSC 385  
CSC Elective  
Modern Language  
Major/Minor or Elective

### Senior Year

#### Fall Term

CSC 450  
CSC Elective  
LAF Course  
Major/Minor or Elective  
HPE Skill

#### Spring Term

CSC 451  
CSC Elective  
Major/Minor or Elective  
Major/Minor or Elective

#### Notes:

- COM 111 or COM 115 will meet a Humanities requirement in the Core Curriculum.
- Approved MAT Electives are: MAT 245, MAT 246, MAT 247, or MAT 271.
- The Computer Science Department has approved CSC electives, of which 2 of 3 must be upper division.

## What can I do with a Computer Science major?

The following jobs are some of the positions that Computer Science majors could pursue. Some may require professional or graduate school or certification.

|                           |                       |
|---------------------------|-----------------------|
| Chief Information Officer | CIA Agent             |
| Computer Programmer       | Consultant            |
| Database Manager          | Entrepreneur          |
| FBI Agent                 | Network Administrator |
| Network Analyst           | Professor             |
| Researcher                | Software Design       |
| Software Engineer         | Systems Analyst       |
| Systems Development       | Teacher               |
| Web Designer              | Webmaster             |

For more information on possible careers in computer science, please talk with your faculty advisor, and also the Center for Service, Work and Learning.

## Computer Science Department

The Computer Science Department is located on the second floor of George Sverdrup Hall. You may contact the following faculty for more information on the computer science major requirements, and also check out the website at: [www.augsburg.edu/cs](http://www.augsburg.edu/cs).

Noel J. Petit  
Professor, Department Chair  
Sverdrup Hall 203D  
Phone: 612-330-1061  
Email: [petit@augsbu.edu](mailto:petit@augsbu.edu)  
Campus Box 4

Larry J. Crockett  
Professor  
Sverdrup Hall 203B  
Phone: 612-330-1060  
Email: [crockett@augsbu.edu](mailto:crockett@augsbu.edu)  
Campus Box 90

Erik Steinmetz  
Assistant Professor  
Sverdrup Hall 203A  
Phone: 612-330-1062  
Email: [steinmee@augsbu.edu](mailto:steinmee@augsbu.edu)  
Campus Box 20

Shana K. Watters  
Assistant Professor  
Sverdrup Hall 203F  
Phone: 612-330-1142  
Email: [watterss@augsbu.edu](mailto:watterss@augsbu.edu)  
Campus Box 20

**AUGSBURG  
COLLEGE**