



Winona State University  
**Four-Year Program Map**

Created on 6/16/2017  
 Effective Fall 2017

**Program:** Applied Computer Science (MATH 115) (BS CSAC)  
**Emphasis (optional):** Human Computer Interaction Emphasis

| Fall Semester  |  |                     |              | Spring Semester   |                       |     |
|--|--|---------------------|--------------|---|-----------------------|-----|
|  | Course   | Requirement Met     | SH           | Course  | Requirement Met       | SH  |
| <b>Year 1</b>  | CS 101 Exploring Creative Computing            | GE Goal 4/Major     | 3            | CS 234 Algorithms and Problem Solving I   | Major                 | 4   |
|  | MATH 115 College Algebra or higher             | GE Goal 4           | 4            | MATH 140 Applied Calculus or Math 212 Calculus I*   | GE Goal 4/Major       | 3-4 |
|  | ENG 111 College Reading & Writing or CMST 191  | GE Goal 1           | 4-3          | CMST 191 Introduction to Public Speaking or ENG 111   | GE Goal 1             | 3-4 |
|  | OR 100 Introduction to Higher Education        | Recommended         | 1            | General Education Course  | GE Goal 5-10          | 3   |
|  | PSY 210 Introduction to Psychological Sciences | GE Goal 5/Major     | 3            |   |                       |     |
| NOTE: *Students need a total of 40 SH of general education courses that fulfill specific goal areas. To remain under 120 credits, choose courses that meet two goal areas.   |  |                     |              | NOTE: Students that enter WSU able to take Math 140 or 212, should take it their first fall semester and replace Math 140 or 212 in their second semester with a General Education course.  |                       |     |
| <b>First-Year Fall Semester Credit Hour Total</b>  |  |                     | <b>14-15</b> | <b>First-Year Spring Semester Credit Hour Total</b>   |                       |     |
| <b>Year 2</b>  | CS 250 Algorithms and Problem Solving II       | Major               | 4            | CS 341 Data Structures  | Major/CAI             | 4   |
|  | CS 275 Mathematical Foundations of Algorithms  | Major               | 4            | CS 313, CS 375, CS 385**, or CS Elective***   | Major                 | 3-4 |
|  | STAT 210 Statistics                            | Major               | 3            | CS 313, CS 375, CS 385**, or CS Elective***   | Major                 | 3-4 |
|  | General Education Course                       | GE Goal 3 (non-lab) | 3            | PSY 335 Human Factors Psychology  | Major                 | 3   |
|  | Physical Development & Wellness                | PDW                 | 1            | General Education Course  | GE Goal 5-10          | 3   |
| NOTE: A minimum 2.50 GPA is required in the major and overall. Students must earn a grade of "C" or better in all major courses. Students are allowed to attempt CS courses at most 3 times (including withdraws).   |  |                     |              | NOTE: *CS 341 satisfies the math/critical analysis requirement. **CS 385 satisfies a writing intensive requirement. ***Students should take 2 courses from CS 313, 375, 385, 300-level elective this semester and the other 2 courses from this list in the following two semesters. Students review the DARS to find full list for CS Electives. |                       |     |
| <b>Second-Year Fall Semester Credit Hour Total</b>   |  |                     | <b>15</b>    | <b>Second-Year Spring Semester Credit Hour Total</b>  |                       |     |
| <b>Year 3</b>  | CS 344 Web Programming                         | Major               | 3            | CS 444 Human Computer Interaction   | Major                 | 3   |
|  | CS 313, CS 375, CS 385, or CS Elective*        | Major               | 3-4          | CS 313, CS 375, CS 385, or CS Elective*   | Major                 | 3-4 |
|  | PSY 369 Cognitive Psychology                   | Major               | 3            | PSY 410 Perception and Sensation  | Major                 | 3   |
|  | General Education Course                       | GE Goal 5-10        | 3            | General Education Course (Science Lab)  | GE Goal 3             | 4   |
|  | General Education Course                       | GE Goal 5-10        | 3            | General Education Course  | GE Goal 5-10          | 3   |
| NOTE: Students should take 1 course from CS 313, 375, 385 this semester and the other 3 courses from this list in the previous and following semesters. Students must earn a minimum of 18 SH of 300-400 level CS courses, with at least 12 SH outside the CS core requirements, from WSU. |  |                     |              | NOTE: Students should take 1 course from CS 313, 375, 385 this semester and the other 3 courses from this list in the previous 2 semesters.   |                       |     |
| <b>Third-Year Fall Semester Credit Hour Total</b>  |  |                     | <b>15-16</b> | <b>Third-Year Spring Semester Credit Hour Total</b>   |                       |     |
| <b>Year 4</b>  | CS 410 Software Engineering*                   | Major/WI            | 3            | CS 471 Object Oriented Design and Development*  | Major/OI              | 3   |
|  | CS 485 Advanced Database Systems               | Major               | 3            | CS Elective   | Major                 | 3   |
|  | CS Elective                                    | Major               | 3            | General Education Course  | GE Goal 5-10          | 3   |
|  | General Education Course                       | GE Goal 5-10        | 3            | Physical Development & Wellness   | PDW                   | 1   |
|  | General Education Course                       | GE Goal 5-10        | 3            | General Education Course or General Elective  | GE Goal 5-10/Elective | 3   |
| NOTE: Students must a minimum of 120 credits to graduate. * CS 410 satisfies the second writing intensive requirement.   |  |                     |              | NOTE: *CS 471 satisfies the oral intensive requirement.   |                       |     |
| <b>Fourth-Year Fall Semester Credit Hour Total</b>   |  |                     | <b>15</b>    | <b>Fourth-Year Spring Semester Credit Hour Total</b>  |                       |     |

**Total Credit Hours (SH): 120**

Guide to 4 Year Major Maps

- 4 Year Major Maps are intended to show a recommended four-year pathway to a degree. Students must be fulltime, college ready, and ready to declare a major to follow the map exactly as shown. Maps are only a sample; there may be other pathways that lead to completion of the degree in four years.
- Major Maps are NOT intended to take the place of meetings with advisors.
- Major Maps are NOT intended to take the place of the Degree Audit System (DARs).

All courses listed on a major map will be labelled as one or more of the following:

| GE Goal    | General Education Goal Area       | Indicates that the course meets one of the 10 General Education Goals  |
|------------|-----------------------------------|--|
| Gen Elec   | General Elective                  | Indicates that the course does not meet a General Education, Major or Minor requirement but does count toward the degree |
| Major      | Major Requirement                 | Indicates that the course meets a Major requirement  |
| Major Elec | Major Elective                    | Indicates that the course counts toward the major as an elective, must be chosen from list of approved courses           |
| Minor      | Minor Requirement                 | Indicates that the course meets a Minor requirement  |
| CAI        | Critical Analysis Intensive       | Indicates that the course counts as a Critical Analysis Intensive  |
| OI         | Oral Intensive                    | Indicates that the course counts as an Oral Intensive  |
| WI         | Written Intensive                 | Indicates that the course counts as a Written Intensive  |
| PDW        | Personal Development and Wellness | Indicates that the course counts as a Personal Development and Wellness Requirement                                      |

General Education Goal Areas:

|         |   | Minimum credits required |
|---------|---|--------------------------|
| Goal 1  | Communication   | 7 credits                |
| Goal 2  | Critical Thinking (Met with completion of all other goal areas) | --                       |
| Goal 3  | Natural Science   | 7 credits                |
| Goal 4  | Mathematics   | 3-4 credits              |
| Goal 5  | History, Social/Behavioral Sciences                             | 9 credits                |
| Goal 6  | Humanities and Fine Arts  | 9 credits                |
| Goal 7  | Human Diversity   | 3 credits                |
| Goal 8  | Global Perspective  | 3 credits                |
| Goal 9  | Ethic and Civic Responsibility                                  | 3 credits                |
| Goal 10 | People and the Environment                                      | 3 credits                |

Graduation Requirements:

- Minimum of 120 total credits (semester hours) required for Bachelors' Degree
- Minimum of 40 General Education credits required
- Minimum of 40 Upper Division credits required
- Minimum of 30 Residence credits required in Junior/Senior years
- Minimum WSU cumulative grade point average of 2.00; some programs require higher grade point averages

Major Maps are not contracts. Winona State University reserves the right to make changes at any time, without prior notice, to programs, policies, procedures and information described in this major map. Students should consult the appropriate academic department or college for currently accurate program information.