

2021-2022 IE/CS Double Major Guidelines

Important Notes

- Declaration of a CS major is necessary for students to enroll in many upper-level COMP_SCI courses
- Students considering the double major are strongly urged to compare the double major with the BS/MS program. Students considering the MS in computer science are *strongly encouraged* to complete the CS core first (COMP_SCI 111, 150, 211, 212, 213, and 214).
- Students pursuing a CS major should visit the [Computer Science Undergraduate website](#).
- The only courses in the double major that may be taken P/N (pass/fail) are theme courses.
- This information is intended only as a guide and does not replace any official communications from the CS department. Questions about the CS major should be directed to advising@cs.northwestern.edu.

Course	BS in Computer Science	BS in Industrial Engineering
<input type="checkbox"/> Math 220-1, 220-2, 228-1	Math	Math
<input type="checkbox"/> Math 228-2	Unrestricted Elective #1	Math
<input type="checkbox"/> COMP_SCI 212	Math	General Tech Elective #1
<input type="checkbox"/> EA 1, 2, 3	Engineering Analysis	Engineering Analysis
<input type="checkbox"/> EA 4	Unrestricted Elective #2	Engineering Analysis
<input type="checkbox"/> COMP_SCI 111	Engineering Analysis	IE Major Requirement
<input type="checkbox"/> 4 units science	Basic Science	Basic Science
<input type="checkbox"/> DTC 1, 2	Design and Communication	Design and Communication
<input type="checkbox"/> Comm 102/Perf 103 or 203	Design and Communication	Design and Communication
<input type="checkbox"/> 7 units theme	Theme Requirement	Theme Requirement
<input type="checkbox"/> COMP_SCI 211	Basic Engineering #1	Basic Engineering #1
<input type="checkbox"/> CIV_ENV 205	Basic Engineering #2	Basic Engineering #2
<input type="checkbox"/> COMP_SCI 339	Breadth Requirement (Systems)	Basic Engineering #3 (for COMP_SCI 217, by petition)
<input type="checkbox"/> IEMS 303	Basic Engineering #3	IE Major Requirement
<input type="checkbox"/> IEMS 304	Basic Engineering #4	Basic Engineering #4
<input type="checkbox"/> IEMS 313	Basic Engineering #5	IE Major Requirement
<input type="checkbox"/> COMP_SCI 213	CS Major Requirement	Basic Engineering #5

Course	BS in Computer Science	BS in Industrial Engineering
<input type="checkbox"/> COMP_SCI 150	CS Major Requirement	IE Major Requirement
<input type="checkbox"/> COMP_SCI 214	CS Major Requirement	General Tech Elective #2
<input type="checkbox"/> COMP_SCI 3XX	Breadth Requirement (Theory)	General Tech Elective #3
<input type="checkbox"/> COMP_SCI 3XX	Breadth Requirement (AI)	Unrestricted Elective #1
<input type="checkbox"/> COMP_SCI 3XX	Breadth Requirement (Interfaces)	Unrestricted Elective #2
<input type="checkbox"/> COMP_SCI 3XX	Breadth Requirement (Software)	Unrestricted Elective #3
<input type="checkbox"/> 6 credits COMP_SCI/COMP_ENG/ELEC_ENG 3XX	CS Technical Electives	6 Additional Courses
<input type="checkbox"/> 2 COMP_SCI 399/Project course	Project Requirement	Unrestricted Electives #4-#5
<input type="checkbox"/> IEMS 202	Unrestricted Electives #3	IE Major Requirement
<input type="checkbox"/> IEMS 315, 317	Unrestricted Electives #4-5	IE Major Requirements
<input type="checkbox"/> IEMS 38X	1 Additional Course	IE Major Requirement
<input type="checkbox"/> IEMS 394	1 Additional Course	IE Major Requirement
<input type="checkbox"/> 2 MS electives	2 Additional Courses	MS Electives #1-#2
<input type="checkbox"/> 2 IE/OR Electives	2 Additional Courses	IE/OR Electives #1-#2

Additional Curricular Notes:

- Students unable to register for COMP_SCI 339 will be required to take COMP_SCI 217 to fulfill requirements for the BS in industrial engineering. This requirement will not be waived. Computer Science makes no guarantees about any student's ability to register for COMP_SCI 339.
- Details on courses used to fulfill the CS tech electives are found in the [undergraduate catalog](#).
- The dual degree requires 54 (total) courses—6 more than is required for a single McCormick degree. Completing the requirements for both IE and CS majors fulfills this requirement.
- Completing a double major in IE/CS will require 6 or 7 credits beyond the 48 required for the BS in industrial engineering, depending on whether or not COMP_SCI 339 and COMP_SCI 213 can be applied towards basic engineering. The MS in Computer Science requires 12 credits beyond the BSIE, assuming students complete the core as part of the BSIE (which is *strongly recommended*). More information about the BS/MS program can be found on the CS website.