IE/CS Double Major Guidelines

Important Notes

- Declaration of a CS minor 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 a CS minor first.
- Students pursuing a CS minor 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 minor should be directed to Prof. Ian Horswill at ian@northwestern.edu.

Course	BS in Computer Science	BS in Industrial Engineering
☐ Math 220-1, 220-2, 228-1	Math	Math
☐ Math 228-2	Unrestricted Elective #1	Math
☐ COMP_SCI 212	Math	General Tech Elective #1
☐ EA 1, 2, 3	Engineering Analysis	Engineering Analysis
☐ EA 4	Unrestricted Elective #2	Engineering Analysis
☐ COMP_SCI 111	Engineering Analysis	IE Major Requirement
☐ 4 science	Basic Science	Basic Science
☐ DTC 1, 2	Design and Communication	Design and Communication
☐ Gen_Cmn 102/103/203	Design and Communication	Design and Communication
☐ 7 units theme	Theme Requirement	Theme Requirement
☐ COMP_SCI 211	Basic Engineering #1	Basic Engineering #1
☐ CIV_ENV 205	Basic Engineering #2	Basic Engineering #2
☐ COMP_SCI 339	Breadth Requirement (Systems)	Basic Engineering #3 (for COMP_SCI 217, by petition)
☐ IEMS 303	Basic Engineering #3	IE Major Requirement
☐ IEMS 313	Basic Engineering #4	IE Major Requirement
☐ Basic Engineering	Basic Engineering #5	Basic Engineering #4

Course	BS in Computer Science	BS in Industrial Engineering
☐ COMP_SCI 151	CS Major Requirement	General Tech Elective #2
☐ COMP_SCI 213	CS Major Requirement	Unrestricted Elective #1
☐ COMP_SCI 214	CS Major Requirement	General Tech Elective #3
☐ COMP_SCI 3XX	Breadth Requirement (Theory)	Unrestricted Elective #2
☐ COMP_SCI 3XX	Breadth Requirement (AI)	Unrestricted Elective #3
☐ COMP_SCI 3XX	Breadth Requirement (Interfaces)	Unrestricted Elective #4
☐ COMP_SCI 3XX	Breadth Requirement (Software)	Unrestricted Elective #5
☐ 6 credits COMP_SCI/COMP_ENG/ELEC_ENG 3XX	EECS Technical Electives	
☐ 2 COMP_SCI 399/Project course	Project Requirement	
☐ Basic Engineering	Unrestricted Elective #3	Basic Engineering #5
☐ IEMS 202, 304	Unrestricted Electives #4-5	IE Major Requirement
☐ IEMS 315, 317		IE Major Requirement
☐ IEMS 38X		IE Major Requirement
☐ IEMS 394		IE Major Requirement
☐ 2 credits IEMS 34X		MS Electives #1-#2
☐ 2 credits IEMS 3XX		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.
- COMP_SCI 101 may be replaced with any course that would satisfy a breadth requirement.
- Details on courses used to fulfill the CS tech electives are found on the CS undergraduate website.
- Completing a double major in IE/CS will require 8 or 9 credits beyond the 48 required for the BS in industrial engineering, depending on whether or not COMP_SCI 339 can be used. The MS in Computer Science requires 12 credits beyond the BSIE, assuming students complete a minor as part of the BSIE (which is *strongly recommended)*. More information about the BS/MS program can be found on the CS website.
- The unspecified basic engineering courses should be chosen from Electrical Science, Fluids and Solids, Materials Science, or Thermodynamics. ELEC_ENG 202 is recommended.
- For maximum utility in both computer science and industrial engineering, students are suggested to take Physics 135-2, Physics 135-3, and Biol_Sci 215 to fulfill the basic science requirement.