Notes for ISP students receiving degrees from McCormick
November, 2018

Students entering the McCormick School of Engineering and Applied Science as freshmen may major in Integrated Science, provided that they have been accepted during the university application process by ISP as well as McCormick. In addition to the McCormick B.S. degree they have chosen to pursue, these students will simultaneously be pursuing the ISP major in the Weinberg College of Arts and Sciences (WCAS). They will follow McCormick curriculum requirements rather than Weinberg College B.A. degree requirements. In the rare case where a McCormick/ISP student wishes to obtain both McCormick and WCAS bachelor's degrees, all the requirements of both schools must be completed.

Undergraduate degrees in McCormick, with the exceptions of industrial engineering, computer science, applied math, and integrated engineering, are accredited by the Engineering Accreditation Commission of ABET. ABET dictates that at least 18 units of credit be in Engineering Topics and at least 12 units of credit be in Math and Basic Science Topics. A McCormick/ISP student will have more than enough Math and Basic Science Topics credit, but needs to ensure that his or her curriculum carries enough Engineering Topics credit. No WCAS course carries Engineering Topics credit. Many, but not all, McCormick courses carry Engineering Topics credit. The distribution of these two categories of credit for engineering courses (course partitioning) is relevant to the discussion that follows.

First year courses:

McCormick/ISPs will take *Design Thinking and Communication* during the freshman year. However, rather than the *Engineering Analysis* sequence, McCormick/ISPs will take ISP courses in math and physics, and an EECS course in computing. Any student who does not take the four-course *Engineering Analysis* sequence must have five courses to replace it. For ISP students, four required courses (EECS 111, Physics 125-1, Math 281-2 and Math 281-3) accomplish most of this. McCormick/ISPs therefore need one additional course at some point to complete this portion of their McCormick requirements. This extra course has been added to the Basic Engineering category, so ISPs need six Basic Engineering Courses, rather than the five that McCormick students usually need. This extra course could be EA-2, or it could be any course that McCormick counts as Basic Engineering and does not duplicate the student's departmental Basic Engineering requirements. The full list of courses that qualify as Basic Engineering is here. This additional course must also be in the ABET Engineering Topics category rather than the Math and Science Topics category. Other advanced courses may be considered by petition.

Engineering Analysis also covers Matlab, which is not covered by any ISP course. McCormick/ISP students may have to learn Matlab on their own so that they can use it in upper level engineering classes.

Overlap between ISP and engineering requirements:

Many McCormick majors require students to take statistics and/or physical chemistry/thermodynamics within their Basic Engineering coursework. The statistics and physical science courses listed for McCormick students under Basic Engineering would often be redundant with the ISP statistics (Stat 383) or physical chemistry (Chem 348) courses. McCormick/ISPs should take the ISP courses and petition McCormick to have these counted in their Basic Engineering requirements. Ideally, petitions should be submitted before courses have been completed. Some departments require Gen_Eng 205-2 (EA2); students should talk to the department's undergraduate program chair to confirm requirements.

If the course that is being replaced carries ABET Math and Science Topics credit, then the petition will likely be approved. If the student's major is not accredited by ABET (i.e. industrial engineering, computer science, applied math, integrated engineering), then the petition will likely be approved. However, if the statistics or physical chemistry course that is being replaced is in the ABET Engineering Topics category and the student is in an ABET accredited major, then the petition will need to show that the student's

curriculum overall contains at least 18 units of Engineering Topics. **On these petitions, it is vital that students state that they are aware of the 18 units of engineering requirement.** In some McCormick majors, this may mean that the student needs to take an additional Engineering Topics course beyond those in the standard departmental curriculum (e.g. as an unrestricted elective). Students should work this out before approaching their advisers for a signature on the petition.

Biology:

McCormick/ISP students who have a requirement for biology in their McCormick major may replace ChemEng 275 or BiolSci 215 or 219 with the ISP course BiolSci 240 or Biol Sci 241 by petition.

Courses not needing a petition:

All McCormick/ISPs will take certain courses that will be recognized automatically, and do not require a petition.

ISP course	**McCormick accepts in place of**
Math 281-1	Math 230
Math 282-2	Math 234 (part of EA replacement)
Math 283-3	Math 250 (part of EA replacement)
Exempt (no course is necessary)	Math 240
Physics 125-1	Physics 135-1 (part of EA replacement)
Physics 125-2	Physics 135-2
Physics 125-3	Physics 135-3
Chem 212-1	Chem 210-1
EECS 111	Part of EA replacement