Information Science Major Revision
Fall, 2016

The Information Science program offers a curriculum for students interested in the management, analysis, and presentation of information. An Information Science degree enables diverse career paths including database management, web and mobile applications, data analytics, human-computer interaction, business decision support, and health information systems. The program focuses on the application, not construction, of software systems.

This revision of the Information Science major program streamlines the major to reflect the evolution of options, courses, goals, and career paths to include those that did not even exist during the previous major update. It also better enables internal transfers to enter the ISC program from other department major programs (which is the most typical case), often without wasting credits or requiring extra semesters.

The revised program has the same total number of credits as the current program. It maintains the same categories of primary Learning Outcomes, but with a few revisions in details (see below). It is also resource-neutral: reductions in offering frequency of some no-longer required courses are balanced with increases in electives, and new cognate flexibility mainly targets those students (e.g., those entering as CSC majors) who would be taking those courses anyway.

Here’s a brief description of the changes and rationales:

1. The choice of introductory Computer and Information Literacy course is broadened to include CSC 102 and ISC 105. Rationale: In part due to core General Education Computer and Information Literacy requirements, core topic coverage across these three courses has converged to serve as a prerequisite for other ISC courses.

2. The choice of introductory programming courses is broadened to include either the first-year applications-oriented programming courses ISC 150 and 250, or the first-year Computer Science programming courses CSC 212 and 241 (Also, CSC 212 followed by ISC 250 is allowed, but ISC 150 cannot be followed by CSC 241 because of prerequisites.) Rationale: ISC 150-250 focus on application programming; CSC 212-241 focus on software construction principles. The ISC courses are suitable for students entering the ISC program from non-CS backgrounds. Students initially taking the CSC sequence and then switching to ISC will have enough programming background to take other ISC courses. (Note the different conventions in the old vs new catalog about whether CSC options for courses are core or cognate.)
3. Choices among math cognates are expanded to allow MAT 318, which also covers core statistical concepts needed from MAT 158-258, but which has a MAT 210 prerequisite (which is therefore listed).

4. ISC 330 (Telecommunications) and ISC 355 (Knowledge Systems) are moved from core to electives. Rationale: These two courses are less often relevant for some ISC career paths than they once were. We will still offer them (perhaps less often). Note: Two other core courses, ISC 220 and ISC 300, were also recently revised to update contents and learning objectives. Note: In conjunction with this program update, we will submit a Writing Plan update that includes three additional alternatives to these courses for meeting upper division writing requirements.

5. The Learning Agreement is replaced with electives across the increasingly diverse courses offered by the department. The increase in elective (vs required) courses allows students to become more knowledgeable and experienced in areas of their choosing. Normally, chosen electives will have ISC prefixes, but we also allow, with advisor approval, CSC, COG, and when eligible, graduate HCI and BHI courses. Rationale: Over the past decade, we have added courses (and plan to add more) that provide appropriate breadth and depth without requiring that students come up with learning agreements that include courses outside the department. In fact, most current students take CS department courses for all of their learning agreement electives, usually including at least one course with a non-ISC prefix. Note: An interdisciplinary advisory board is no longer needed to coordinate course offerings for learning agreements.
OLD Information Science Major (51cr)

A. Core Requirements (27cr)

- ISC 110 - Introduction to Information Science (3cr)
- ISC 150 - Introduction to Scripting and Markup Languages (3cr)
- ISC 220 - Information Storage and Retrieval (3cr)
- ISC 300 - Current Problems in Information Science (3cr)
- ISC 325 - Multimedia/Hypermedia Design and Authoring (3cr)
- ISC 329 - Database Management Systems in Business (3cr)
- ISC 330 - Telecommunications (3cr)
- ISC 355 - Knowledge Representation and Intelligent Systems (3cr)
- ISC 496 - Information Science Capstone Seminar (3cr)

B. Cognate Requirements (12cr)

- CSC 212 - Principles of Programming (3vr)
- CSC 241 - Abstract Data Types and Programming Methodology (3cr)
- MAT 158 - Introduction to Statistics A (3cr)
- MAT 258 - Introduction to Statistics B (3cr)

C. Learning Agreement (12cr)

A student, along with a faculty member, will devise a learning agreement containing a minimum of twelve credit hours, at least nine of which are at the 300- or 400-level. The proposed agreement is to be submitted to the Information Science Program Faculty Committee and the Information Science Director for approval, typically by the end of the student's sophomore year. The sequence of courses comprising the learning agreement may be from any one of several different departments participating in the Information Science Program.

Note
A grade of C- or better must be earned in all core and cognate courses.

NEW Information Science Major (51-52cr)

A. Core Requirements (24cr)

One of the following: (3cr)
- CSC 102 - Business Information Systems
- ISC 105 - Introduction to Digital Humanities
- ISC 110 - Introduction to Information Science

One of the following: (3cr)
- ISC 150 - Introduction to Scripting and Markup Languages
- CSC 212 - Principles of Programming

One of the following: (3cr)
- ISC 220 - Information Storage and Retrieval (3cr)
- ISC 250 - Programming through Mobile Applications
- CSC 241 - Abstract Data Types and Programming Methodology

ISC 300 - Ethics and Policy in the Digital Age (3cr)

ISC 325 - Multimedia/Hypermedia Design and Authoring (3cr)

ISC 329 - Database Management Systems in Business (3cr)

ISC 496 - Information Science Capstone Seminar (3cr)

B. Cognate Requirements (6-7cr)

Either:
- MAT 158 - Introduction to Statistics A (3cr)
- MAT 258 - Introduction to Statistics B (3cr)

Or:
- MAT 210 - Calculus 1 (4cr)
- MAT 318 - Statistics in the Sciences (3cr)

C. Electives (21cr)

ISC and other courses offered by the Computer Science Department (CSC, COG, HCI, BHI) at the 200 level or above, under advisement.

Note
A grade of C- or better must be earned in all core and cognate courses.
Learning Outcomes and Assessment

The revised major maintains the same categories of Learning Outcomes and assessment processes as the old version, with some updated wordings. Assessment procedures will similarly undergo minor revisions.

1. Students must understand the nature of information and in particular must know how to collect and organize information, evaluate information and its sources, and use information in problem solving and decision making, as well as understand the need to validate information.
2. Students should know and embrace the ethical standards of the profession as articulated by such organizations as ASIS&T and the ACM; they should understand the ramifications of their work, including the social impact and consequent responsibilities they imply.
3. Students must be able to understand and manage software applications applying the theory and practice of information management and retrieval, document representation, and statistical decision making.
4. Students must be able to program software applications operating upon information representations and databases. Students will, furthermore, be expected to attain the skills necessary to remain current in and conversant with these fields.
5. Students must attain a foundation in the following human aspects related to information systems: human information processing, information-seeking behavior and human factors in system design.
6. Students must recognize the social impacts of information and information technology; they must be able to identify and understand relevant policy issues, targets, processes, and instruments within and across jurisdictional boundaries.
7. Students must be able to identify stakeholder groups (i.e., those people affected by particular uses of information and information technology) and to articulate their respective stakes (what the stakeholders have to lose or gain).
8. Students should be able to work effectively in groups and individually.
9. Students should demonstrate both written and oral communication skills.
10. Students should demonstrate the ability to engage in logical thinking and to read critically in the field of information science.