Informatics, BS

Requirements

The Bachelor of Science with a major in informatics requires a minimum of 120 s.h., including at least 55–59 s.h. of work for the major. Students must maintain a grade-point average of at least 2.00 in all courses for the major and in all UI courses for the major. A cumulative GPA of at least 2.00 is required for graduation. Students must also complete the College of Liberal Arts and Sciences GE CLAS Core.

The program combines foundational informatics coursework with coursework in a cognate area. The major offers the cognate areas of bioinformatics, medical informatics, and individualized cognates. Required credit for the major depends on a student's choice of cognate area.

Coursework for the major includes the informatics core, two electives, a statistics course, and a set of courses in the chosen cognate area. Work for the major may not be taken pass/nonpass. Students are expected to have taken MATH:1005 College Algebra or the equivalent.

Students who major in informatics may not also major in computer science, business analytics and information systems, or computer science and engineering. They may, however, earn a minor in computer science.

Departmental Residency Requirement

Students must complete at least five courses (minimum of 15 s.h.) at the University of Iowa from the following: CS:3910 Informatics Project and four additional computer science courses (prefix CS) numbered 2500–4999; these courses are requirements for the BS in informatics as listed below.

Program Requirements

The BS with a major in informatics requires the following coursework. Enrollment in many courses for the major requires a minimum grade of C-minus in prerequisite courses.

Requirements	Hours
Informatics Core Courses	19
Informatics Electives	6
Statistics Course	3
Cognate Courses	27-31

Informatics Core

The informatics core consists of six required computing courses (19 s.h.) that emphasize data manipulation, databases, and networking. It provides more applications-oriented content than the traditional computer science curriculum yet is designed to offer students a sound basis in underlying computer science themes and techniques.

Course #	Title	Hours
All of these:		
CS:1110	Introduction to Computer Science	3
CS:2110	Programming for Informatics	4
CS:2420	Analyzing Data for Informatics	3
CS:2520	Human-Computer Interaction for Informatics	3
CS:2620	Server-Side Development for Informatics	3
CS:3910	Informatics Project	3

Informatics Electives

Students must complete at least 6 s.h. in two computer science courses (prefix CS) numbered 3000–4999, excluding CS:3910 and CS:4510; they may count up to 3 s.h. from CS:3990 Honors in Computer Science or Informatics. Course selection must be approved by an informatics advisor. Students may have additional choices from the Department of Electrical and Computer Engineering and the Department of Business Analytics; consult an informatics advisor for additional choices.

Statistics Course

Students must complete one introductory statistics course. Some cognates require a specific statistics course. Students should consult with their advisors to choose a statistics course appropriate for their cognate area.

Course #	Title	Hours
One of these:		
STAT:2010	Statistical Methods and Computing	3
STAT:3510	Biostatistics	3

Cognates

Students must complete all requirements listed under one of the following cognate areas: bioinformatics, medical informatics, or an individualized cognate.

Bioinformatics

The informatics major with the bioinformatics cognate requires a minimum of 58 s.h. of work for the major, including 30 s.h. in cognate courses. The bioinformatics cognate is intended for students interested in applications of computing to the biological sciences. It may lead to careers in laboratory research, biotechnology, data management, and other related areas. It may also prepare students for graduate programs in bioinformatics or genetics. Cognate courses are drawn primarily from biology and chemistry.

Course #	Title	Hours
All of these:		
BIOL:1411	Foundations of Biology	4
BIOL:1412	Diversity of Form and Function	4
CHEM:1110	Principles of Chemistry I	4
CHEM:1120	Principles of Chemistry II	4
BIOL:2512	Fundamental Genetics	4
BIOL:3172	Evolution	4
Two of these:		
BIOL:2673	Ecology	3
BIOL:3212	Bioinformatics for Beginners	3
BIOL:3314	Genomics	3

Medical Informatics

The informatics major with the medical informatics cognate requires a minimum of 56 s.h. of work for the major, including at least 28 s.h. in cognate courses. The medical informatics

cognate is intended for students interested in applications of computing to health care, especially in a clinical setting. It may lead to careers in medical or hospital settings, graduate programs in medical informatics, or professional degree programs in medicine, dentistry, nursing, or other allied health professions. Cognate courses are drawn from biology, chemistry, health and human physiology, and public health.

Students who choose the medical informatics cognate must satisfy the major's statistics requirement with either STAT:2010 Statistical Methods and Computing or STAT:3510 Biostatistics.

Course #	Title	Hours
All of these:		
BIOL:1411 & BIOL:1412	Foundations of Biology and Diversity of Form and Function	8
CHEM:1110 & CHEM:1120	Principles of Chemistry I and Principles of Chemistry II	8
CHEM:2210 & CHEM:2220	Organic Chemistry I and Organic Chemistry II	6
At least two of these:		
BIOL:2512	Fundamental Genetics	4
BIOL:3172	Evolution	4
CHEM:2410	Organic Chemistry Laboratory	3
HHP:2100	Human Anatomy	3
HMP:4000	Introduction to the U.S. Health Care System	3

Individualized Cognates

Students interested in developing individualized cognates may work with an informatics advisor. Individualized cognates may be drawn primarily from one department or an appropriate mix of departments; they require an approved set of cognate courses totaling 27–31 s.h.

Early Admission to the Graduate College

Undergraduate informatics students who have 6 s.h. or less to earn toward graduation may apply for early admission to the Graduate College. Early admission allows students in their final undergraduate semester to take courses for graduate credit in addition to the courses they need to complete their bachelor's degrees.