

# Information Sciences

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Interdisciplinary Major (<http://catalog.uwgb.edu/archive/2015-2016/undergraduate/planning/interdisciplinary-majors-minors>)  
(Bachelor of Science)

**Professors** – Phillip Clampitt (communication) (chair)

**Associate Professors** – Peter Breznay (computer science)

**Assistant Professors** – Bryan Carr (media), Ankur Chattopadhyay (computer science), Ioana Coman (journalism), Laleah Fernandez (public relations)

**Lecturers** – Danielle Bina (electronic media, public relations), Ben Geisler (computer science)

The central organizing concept of this major is information — its structures in verbal, visual, mediated, and quantitative forms; its storage, analysis, evaluation, processing and communication by both machines and people. The program depends on current technologies and continues to evolve as technologies change. Students can expect curricular additions and should consult with their adviser early and often to be aware of pending changes.

Computing represents an important dimension of this major, but students also are expected to be thoroughly equipped with problem solving, collaborative, and presentational skills. Practice in working with various kinds of information helps ensure against narrow technical preparation, which too often leads to rapid obsolescence in rapidly changing fields, and it prepares students to make the most creative and useful applications of various information technologies.

A goal of the program is to train students to conceptualize and solve information problems in interdisciplinary situations. There are two tracks for the major. The **Information Technology** track offers a solid grounding in computing, mathematics, and communication skills and then builds on that grounding with a broad array of theoretical and applied approaches to information technologies. The **Information Science** track offers a balance of computing and communication courses to provide students with a flexible array of technical and interpersonal skills for a wider variety of career options.

Career paths for Information Sciences graduates are changing rapidly and UW-Green Bay graduates report that the breadth of this program has been important to them. Some have essentially created their own positions. Some have pursued graduate work. Others have entered a wide variety of jobs after graduation in areas such as information technology, advertising, marketing and sales, systems analysis, and human resources.

The program no longer offers an interdisciplinary minor in Information Sciences.

In addition to the major in Information Sciences, UW-Green Bay also offers an interdisciplinary major and minor in Computer Science. The programs in Information Sciences and in Computer Science all require early and frequent consultations with faculty advisers.

Students may study abroad or at other campuses in the United States through UW-Green Bay's participation in international exchange programs and National Student Exchange. Travel courses are another option for obtaining academic credits and completing requirements. For more information, contact the Office of International Education at (920) 465-2190 or see <http://www.uwgb.edu/international/>.

## Area of Emphasis

Students must complete requirements in one of the following areas of emphasis:

- Information Science Emphasis (<http://catalog.uwgb.edu/archive/2015-2016/undergraduate/programs/information-sciences/major/infoscience-emphasis>)
- Information Technology Emphasis (<http://catalog.uwgb.edu/archive/2015-2016/undergraduate/programs/information-sciences/major/infotechnology-emphasis>)

## Courses

### **INFO SCI 198. First Year Seminar. 3 Credits.**

Reserved for New Incoming Freshman.

### **INFO SCI 201. Information, Computers and Society. 3 Credits.**

A survey of the social, legal and ethical impacts of computers on individuals and society.

Fall Only.

### **INFO SCI 210. Information Problems. 3 Credits.**

An introduction to understanding and solving information problems, including: a survey of the field of information science; practice in algorithmic thinking; techniques for finding, assessing, organizing, and presenting information; and confrontation with ethical and value issues.

Spring.

### **INFO SCI 299. Travel Course. 1-4 Credits.**

Travel courses are conducted to various parts of the world and are led by one or more faculty members. May be repeated to different locations.

P: cons of instr & prior trip arr & financial deposit.

**INFO SCI 302. Introduction to Data Science. 3 Credits.**

This course provides an introduction to data science and provides an overview of useful data science tools. Topics covered will include tools, database management, retrieval and management of data, best practices for effectiveness and mitigating risk.

P: At least 18 credits in COMP SCI, INFO SCI or COMM

Spring.

**INFO SCI 308. Information Technologies. 3 Credits.**

A survey of information technologies, their operations and limitations, and how the major electronic technologies are changing and affecting both the workplace and the household.

P: at least 15 credits of supporting core courses in Communication or declared program in Information Sciences

Spring.

**INFO SCI 332. Mobile Platforms and Apps. 3 Credits.**

A complete study of the world of mobile computing. The course begins with a survey of the mobile applications business and the games marketplace. Students will collaborate to design, develop and produce one unique app of their own design. Students will also create one unique video game. Topics covered will include an in depth study of the models of mobile information, GPS services, social networking, casual gaming, networked games, business apps, and information gathering.

P: At least 18 credits in COMP SCI, INFO SCI or COMM

Fall Only.

**INFO SCI 341. Survey of Gaming and Interactive Media. 3 Credits.**

This course provides students with a thorough understanding of the history, study, of the modern video game industry and video games as a creative and communicative medium. Subjects covered in this course include the history of the industry in terms of its technological and economic development. Students will also analyze how video games have evolved and used more powerful multimedia capabilities to craft narratives and virtual worlds, and critically engage with game content to analyze games and break them down into component elements to understand what makes for good design. The course will also analyze the cultural and political impact of games from psychological effects to the debate over governmental regulation. The course will also provide students with the tools they need to succeed in a variety of professions in the video game industry, from journalism to development to public relations and beyond.

P: At least 18 credits in COMP SCI, INFO SCI or COMM

Fall Only.

**INFO SCI 342. Game Design. 3 Credits.**

This course will introduce students to the concepts and tools used in the development of modern 2-D and 3-D real-time interactive computer video games. Topics covered in this include game design concepts, graphics, parallel processing, human-computer interaction, networking, artificial intelligence, and software engineering.

P: At least 18 credits in COMP SCI, INFO SCI or COMM

Spring.

**INFO SCI 361. Introduction To Information Assurance & Security. 3 Credits.**

An exploration of the fundamentals of information assurance and security (IAS). The course will introduce the underlying concepts of IAS in context of today's society. It will explore the security & ethical issues in information and computing from the perspective of today's computing world. It will discuss the appropriate remedies and defense strategies in the wake of today's security threats and attacks. Class topics will focus on physical security, cyber security, network security and software security through lectures and hands on experiments. This course will be of interest to students, who wish to obtain an understanding of the basic principles and practices in IAS. It will cover the fundamental concepts in IAS necessary for understanding the threats to security as well as various defenses against those threats.

P: COMP SCI 371

Fall Odd.

**INFO SCI 390. Technical Writing. 3 Credits.**

Scientific and technical writing for professional and lay audiences, including news articles and features, laboratory reports, training and procedure manuals, grant and contract proposals and technical reports.

P: Eng Comp 100 or 164 or ACT English score of 25 or higher; and completion of nat sci gen educ req.

**INFO SCI 410. Advanced Information Problems. 3 Credits.**

Practice in solving information problems and documenting skills for external audiences.

P: Info Sci 210 and sr st.

Spring.

**INFO SCI 412. Data Mining and Predictive Analytics. 3 Credits.**

The course discusses data mining and introduces students to machine learning concepts used in analytics. It provides the basics of building predictive models using structured and unstructured data and clustering, association, and classification techniques. It covers predictive modeling using regression, survival analysis, artificial neural networks, support vector machines, decision trees, and genetic algorithms. The courses involves hands-on exercises with WEKA, Python, and R.

Fall Even.

**INFO SCI 430. Information, Media and Society. 3 Credits.**

The role of information in society, including interpersonal, mass, and institutional sources, in producing a range of effects on individuals, groups, and society as a whole; critical examination of the changing information environment in legal, economic, political, and social contexts.

P: at least 15 credits of core supporting courses in Communication or declared student in Information Sciences.

Spring.

**INFO SCI 440. Information and Computing Science Practicum. 3 Credits.**

A project course in which teams submit proposals to work in an information problem. Projects provide experience in leadership roles, resource allocation, scheduling, documentation, client relations, and presentation. Problems typically draw on a wider array of skills than in other individual classes.

P: sr st.

Fall and Spring.

**INFO SCI 478. Honors in the Major. 3 Credits.**

Honors in the Major is designed to recognize student excellence within interdisciplinary and disciplinary academic programs.

P: min 3.50 all cses req for major and min gpa 3.75 all UL cses req for major.

Fall and Spring.

**INFO SCI 497. Internship. 1-12 Credits.**

Supervised practical experience in an organization or activity appropriate to a student's career and educational interests. Internships are supervised by faculty members and require periodic student/faculty meetings.

P: jr st.

Fall and Spring.

**INFO SCI 498. Independent Study. 1-4 Credits.**

Independent study is offered on an individual basis at the student's request and consists of a program of learning activities planned in consultation with a faculty member. A student wishing to study or conduct research in an area not represented in available scheduled courses should develop a preliminary proposal and seek the sponsorship of a faculty member. The student's advisor can direct him or her to instructors with appropriate interests. A written report or equivalent is required for evaluation, and a short title describing the program must be sent early in the semester to the registrar for entry on the student's transcript.

P: fr or so st with cum gpa  $\geq$  2.50; or jr or sr st with cum gpa  $\geq$  2.00.

Fall and Spring.

**INFO SCI 499. Travel Course. 1-6 Credits.**

Travel courses are conducted to various parts of the world and are led by one or more faculty members. May be repeated to different locations.

P: cons of instr & prior trip arr & financial deposit.