Informatics Programs

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Informatics Programs at the University of Illinois offers a Ph.D. in Informatics, and manages the campus-wide Masters of Science in Bioinformatics. Both are interdisciplinary programs with many participating departments. Students can earn the Master of Science in Bioinformatics with a concentration in one of the following departments: Animal Sciences, Crop Sciences, Information Science, or Computer Science. The program is overseen by Informatics Programs, but students are members of the department of their concentration. Students can earn the Ph.D. in Informatics with specializations in Bioinformatics; Health and Medical Informatics; Spatial Informatics; Art and Cultural Informatics; Design, Technology, and Society; Data Analytics and Information Visualization; Cognitive Science and Language Processing.

Facilities

University research centers in this area include the Center for Biophysics and Computational Biology (http://www.life.uiuc.edu/biophysics/) and an NIH Resource for Macromolecular Modeling and Bioinformatics (http://www.ks.uiuc.edu/). The campus also offers state-of-the-art experimental bioinformatics facilities, including those in the Keck Center for Comparative and Functional Genomics (http://www.biotech.uiuc.edu/) and the Institute for Genomic Biology (http://www.igb.illinois.edu/). The National Center for Supercomputing Applications (http://www.ncsa.uiuc.edu/) (NCSA), located at the University, offers opportunities for accessing, developing, and experimenting with state-of-the-art computational facilities for bioinformatics.

Graduate Programs:

major: Informatics, PhD (http://catalog.illinois.edu/graduate/provost/phd_informatics/)

Courses

INFO 102 Little Bits to Big Ideas credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/INFO/102/)
Broad introduction to the nature, capabilities, and limitations of computing. Topics range from the way data is represented and stored, to the way today's computers work, to the general ideas of algorithms and computational efficiency, to the future of computing. Covers "Great Ideas" across various areas of the field, including, for example, cryptography and internet security, problem solving, modeling and simulation, and artificial intelligence. Same as CS 102.

INFO 199 Undergraduate Open Seminar credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/199/)
May be repeated in separate terms to a maximum of 6 hours.
Prerequisite: Consent of instructor.

INFO 202 Social Aspects Info Tech credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/202/)
Same as IS 202 and MACS 202. See IS 202.
This course satisfies the General Education Criteria for:
Social Beh Sci · Soc Sci

INFO 303 Writing Across Media credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/303/)
The ability to communicate effectively in multiple types of media is a crucial part of literacy in our society. In this course, students will explore the intersections of various media: print, film, images, sound, etc. Students will consider the ways in which writing—as an object and as a practice—is shaped by multimodal interactions. Also integrates practical activities with broader theoretical issues in order to provide effective strategies for designing multimedia presentations, projects, and texts that integrate photography, video, and sound. Same as WRIT 303.
This course satisfies the General Education Criteria for:
Advanced Composition

INFO 310 Computing in the Humanities credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/310/)
Same as IS 310. See IS 310.

INFO 325 Social Media and Global Change credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/325/)
Same as AFST 325, ASST 325, EPOL 325, EPS 325, EURO 325, LAST 325, REES 325, and SAME 325. See EPOL 325.

INFO 326 New Media, Culture & Society credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/326/)
Same as MACS 326. See MACS 326.

INFO 345 Digital & Gender Cultures credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/345/)
Same as GWS 345, MACS 345, and SOC 345. See GWS 345.

INFO 390 Special Topics credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/390/)
Explores a variety of informatics topics. Topics and prerequisites vary by section; see current Class Schedule for details. May be repeated up to 6 hours if topics vary.

INFO 399 Individual Study credit: 0 to 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/399/)
Individual study in a subject related to informatics not covered in normal course offerings. Approved for Letter and S/U grading. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Consent of instructor.

Information listed in this catalog is current as of 09/2021
INFO 403  Introduction to Top Down Video Game Design  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/403/)
The emphasis of this course is on developing an understanding of top
down video game design using the various design methodologies and
tools introduced in class. Students will form small groups (4-6) and work
on their own design within a selected genre (to be determined at the
beginning of the semester). Areas of focus include high level design
vision, audience evaluation, User Interface and its impact on the design,
itration of a series of design documents (high, medium and low level)
and the team dynamics of communication, critique and integration. The
goal of the class is to have the small teams use the concepts and the
tools taught in class to create a complete design document that will be
cataloged for later use. 3 undergraduate hours. 3 graduate hours.

INFO 405  Introduction to the Video Game Development Process  credit:
3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/405/)
The emphasis of this course is understanding the video game
development process as seen in current Game Studios. The course will
focus on key elements of the process including the development timeline,
scheduling, prototyping, iteration, QA, game builds and player research.
The goal will be to take a design document from a catalog of designs that
have already been created and implement one or more of them using the
game development process. Same as GSD 405. 3 undergraduate hours.
3 graduate hours. Credit is not given for INFO 405 and INFO 490 DC "The
Video Game Dev Process" sections.

INFO 407  Introduction to Programming Python for Data Science
credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/INFO/407/)
For students who want to learn about solving problems common in data
sciences but have little or no programming experience. The class is
asynchronous (students can access material on-line but within specified
timeframes) and taught online. Data Science lies at the intersection of
statistics and computer science and focuses on extracting information
from data. This class will immerse students on topics of software
construction, design, programming paradigms and the semantic and
syntax of the Python language and then focus on some of the necessary
workflows to move raw data into information. The class will explore
common Python modules (libraries) used in data science, natural
language processing, statistics, mathematics, data management
(acquiring, cleaning, reshaping, organizing, persisting) and visualizations.
3 undergraduate hours. 3 graduate hours. Credit is not given for INFO 407
and INFO 490 MH "Intro to Prog for the Data Science" sections.

INFO 409  Design & Programming of Narrative Games & Simulations
credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/INFO/409/)
In this course, you will be introduced to the narrative design process
for the authoring of text-based digital games and simulations. You will
become proficient in Inform 7, a programming language and design
system for parser-based interactive fiction (IF). By the end of the
semester you will have developed a game or literary work of IF and
made a substantive contribution to a collaborative project. No prior
programming knowledge is required for students to be successful in the
course. Students will be expected to bring a laptop to class. Please note
that this course teaches design and programming techniques for "parser-
based" interactive fiction, and does not cover Twine, or other hyper-text
based interactive narrative systems. Same as GSD 409. 3 undergraduate
hours. 4 graduate hours. Credit is not given for INFO 409 and INFO 490 JP,
JPU or JPG "Design & Prog Text Based Games" sections.

INFO 416  Makerspace: Game Studies  credit: 3 or 4 Hours. (https://
courses.illinois.edu/schedule/terms/INFO/416/)
A foray into game studies via makerspace production mediums. Students
will study the role of play, tinkering and gaming in design, research and
innovation and be challenged to learn a variety of makerspace production
tools and techniques to create games. This course will include three
major components (1) physical board game design, (2) introductory
computer game design and (3) investigation into the narrative themes,
artistic production, interaction mechanics and culture that make games
engaging. During the course, students will prototype both playable board
and video games, followed by iterating through to a final version of a
game of their choice. Class will meet in the CU Community Fab Lab in Art
Annex II. Students who have taken a different makerspace class before
are encouraged to enroll. Additional fees may apply. See Class Schedule.
3 undergraduate hours. 4 graduate hours. Credit is not given for INFO 416
and INFO 490 A/AG "Makerspace: Game Studies" sections.

INFO 418  Makerspace: Escape Rooms  credit: 3 or 4 Hours. (https://
courses.illinois.edu/schedule/terms/INFO/418/)
Explores the intersection of storytelling, interaction design, and user
experience through the design of escape rooms. In the past few years
escape rooms have been on the rise, changing from simple locked
boxes in an open room to complex adventures spanning multiple rooms
involving electronics, sound design, storytelling, and even live actors. This
class will be primarily focusing on the manufacturing and electronics
work that goes into making an immersive but self-contained escape room
in a box experience. Over the span of the course, students will become
familiar with the basics of several advanced small-scale manufacturing
tools, such as laser engravers, electronic cutters, and 3D printers/
scanners. The primary focus, however, will be a more in depth exploration
of small board electronics – such as Arduino and IoT programming –
and hardware – such as sensors, servos, LEDs, and other components.
3 undergraduate hours. 4 graduate hours. Credit is not given for INFO 418
and INFO 490 B, BG, ERU or ERG "Makerspace: Escape rooms" sections.

INFO 427  Data, Machines and the Python  credit: 3 Hours. (https://
courses.illinois.edu/schedule/terms/INFO/427/)
A continuation to the introductory course on Data Science (INFO 407). This
advanced course on Data Science is completely taught online and
scheduled asynchronously (you decide where it best fits in your week).
The course consists of several tracks including Machine learning and
advanced Python skills. There will be lessons that guide you to learn
advanced techniques in data science and you will also be introduced to
machine learning algorithms. In addition, there will be a few lessons that
help you advance your Python knowledge and software development
skills. This course can mainly be considered as an applied course where
you will learn by doing. In many cases, you will first write a reduced
implementation before using an established library. The second half of
the course will be focused on data driven individual projects along with
weekly lessons. 3 undergraduate hours. 3 graduate hours. Credit is not
given for INFO 427 and INFO 490 MH2 "Data, Machines and the Python"
sections. Prerequisite: Students should have either taken INFO 407; OR
Have at least 1 year of programming experience using Python; OR Be
comfortable with NumPy, Pandas, Matplotlib, NLTK; OR Have a strong
ability and passion for learning. Junior, Senior or Graduate standing.

INFO 490  Special Topics  credit: 1 to 4 Hours. (https://
courses.illinois.edu/schedule/terms/INFO/490/)
Topics of current interest. 1 to 4 undergraduate hours. 1 to 4 graduate
hours. May be repeated if topics vary. Prerequisite: Consent of instructor.
Other prerequisites as specified for each topic offering. See Class
Schedule.

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INFO 491  Ugrad Bioinformatics Seminar  credit: 0 to 2 Hours. (https://courses.illinois.edu/schedule/terms/INFO/491/)
Introduces the field of bioinformatics and computational biology. Same as CPSC 491. 0 to 2 undergraduate hours. No graduate credit. Approved for Letter and S/U grading. May be repeated in separate terms to maximum of 2 undergraduate hours. Prerequisite: Consent of instructor.

INFO 500  Orientation Seminar  credit: 0 or 1 Hours. (https://courses.illinois.edu/schedule/terms/INFO/500/)
A broad introduction to faculty research in each Informatics Area. Consists of weekly presentations by Informatics faculty highlighting their recent research, practice, and related concepts. Approved for S/U grading only. May be repeated in separate terms to a maximum of 2 hours. Prerequisite: Graduate standing in any field.

INFO 510  Research Practicum  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/INFO/510/)
A one semester directed research project supervised by a member of the informatics faculty in the student’s area of specialization or closely related area. These are intended to be practical research, not just literature surveys, and must have a definite output such as a paper or demonstration project. The research should be relevant to the thesis work or preparatory work to support the thesis. Informatics students must take two semesters, usually each semester should be under a different Informatics faculty member, but with the concurrence of their advising committee both may be taken under a single faculty member. Approved for S/U grading only. May be repeated in separate terms to a maximum of 8 hours. Prerequisite: Graduate standing in any Informatics.

INFO 555  Advanced Educational Technologies for Engagement and Interactive Learning  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/INFO/555/)
Same as CI 555 and EPSY 555. See EPSY 555.

INFO 590  Advanced Special Topics  credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/INFO/590/)
Subject offerings of new and developing areas of knowledge in Informatics, intended to augment existing curriculum. See Class Schedule for specific topics and prerequisites. 1 to 4 graduate hours. No professional credit. May be repeated if topics vary. Prerequisite: Graduate Student Standing.

INFO 591  Grad Bioinformatics Seminar  credit: 0 to 2 Hours. (https://courses.illinois.edu/schedule/terms/INFO/591/)
This seminar series focuses on research in the field of bioinformatics and computational biology. Same as ANSC 591 and CPSC 591. 0 to 2 graduate hours. No professional credit. Approved for Letter and S/U grading. May be repeated in separate terms to a maximum of 4 hours. Prerequisite: Consent of instructor.

INFO 597  Individual Study  credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/INFO/597/)
Individual study in a subject related to informatics not covered in normal course offerings. May be repeated in same term for a maximum of 8 hours or separate terms for a maximum of 16 hours if topics vary. Prerequisite: Consent of instructor.

INFO 599  Thesis Research  credit: 0 to 16 Hours. (https://courses.illinois.edu/schedule/terms/INFO/599/)
Research for Ph.D. thesis. May be repeated in separate terms. Prerequisite: Instructor approval required.