INFORMATICS, PHD

for the degree of Doctor of Philosophy in Informatics

The Chair of the Governing Committee of the Informatics Ph.D. Program will appoint the supervising committee to approve each student's program of study, which will be called the Advisory Committee (first half of studies) and then the Dissertation Committee (second half of studies). The membership of these committees should remain constant for each half of the student's studies, except in unusual circumstances, but may change when it is constituted for the dissertation. In any case, changes to the supervising committees must be approved by the Chair of the Governing Committee. The supervising committee must contain faculty with expertise in both the Applications area and the Foundations area chosen by the student, including at least four faculty members affiliated with the Informatics Program. The supervising committee will provide each student with a review of his or her progress in the spring of each academic year.

Admission
The admissions process will consist of a formal application, specifying experiences, courses, interests, and letters of recommendation. The Informatics PhD Program will admit graduate students who are approved by the Governing committee in conjunction with representatives of the Areas. With the approval of the appropriate committees, students may be admitted to the program with only a Bachelor's degree. They will work with their Advisory Committee to define appropriate courses to fulfill the 32 hours of Masters-level work. If they wish to receive a Masters degree, they will need to apply to a relevant department and meet the department's existing Masters degree requirements. If they already hold a Masters degree approved by the IPP Governing Committee, they will receive graduate credit for 32 hours. All applicants whose native language is not English must provide evidence of English proficiency as required by the Graduate College for admission (https://grad.illinois.edu/admissions/instructions/04c/).

Financial Aid
Fellowships, research assistantships, and teaching assistantships (all of which include tuition and partial fee waivers) are awarded on a competitive basis. All applicants, regardless of U.S. citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate spoken English language proficiency by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT, or 8 on the speaking subsection of the IELTS. For students who are unable to take the iBT or IELTS, a minimum score of 4CP (conditional pass) must be earned on the English Proficiency Interview test offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching conducted prior to the start of the semester.

for the degree of Doctor of Philosophy in Informatics

Research Practicum
INFO 510 Research Practicum (taken twice: 4 hrs each) 8

Applications Courses
2 courses at the 500 level from approved list on Course List tab 8

Foundations Courses
2 courses at the 500 level from approved list on Course List tab 8

Electives
INFO 599 Thesis Research (32 min applied toward degree) 32

Total Hours
Entering with Master's Degree 64
Studens entering without a Master’s degree approved by their Advisory Committee will be required to take 32 additional credit hours in 400 and 500 level courses approved by their committee.

Total Hours
Entering with approved B.S. degree 96

Other Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
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<tbody>
<tr>
<td>Other requirements may overlap</td>
<td>Yes</td>
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<tr>
<td>Qualifying Exam Required</td>
<td>Yes</td>
</tr>
<tr>
<td>Preliminary Exam Required</td>
<td>Yes</td>
</tr>
<tr>
<td>Final Exam/Dissertation Defense Required</td>
<td>Yes</td>
</tr>
<tr>
<td>Dissertation Deposit Required</td>
<td>Yes</td>
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<tr>
<td>Minimum GPA:</td>
<td>2.75</td>
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</table>

for the degree of Doctor of Philosophy in Informatics

Applications Courses (Select 2 courses at the 500 level from list below)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ANSC 542</td>
<td>Applied Bioinformatics</td>
<td>4</td>
</tr>
<tr>
<td>ANSC 545</td>
<td>Statistical Genomics</td>
<td>3 or 4</td>
</tr>
<tr>
<td>ARCH 423</td>
<td>Soc/Beh Factors for Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTD 501</td>
<td>Industrial Design I: From Inquiry to Ideation</td>
<td>6</td>
</tr>
<tr>
<td>ARTS 443</td>
<td>Time Arts II</td>
<td>3 or 4</td>
</tr>
<tr>
<td>ARTS 444</td>
<td>Interaction II</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CHBE 571</td>
<td>Bioinformatics</td>
<td>4</td>
</tr>
<tr>
<td>CHLL 527</td>
<td>Statistics in Epidemiology</td>
<td>4</td>
</tr>
<tr>
<td>CPSC 565</td>
<td>Perl &amp; UNIX for Bioinformatics</td>
<td>2</td>
</tr>
<tr>
<td>CPSC 567</td>
<td>Bioinformatics &amp; Systems Biol</td>
<td>4</td>
</tr>
<tr>
<td>CS 548</td>
<td>Models of Cognitive Processes</td>
<td>4</td>
</tr>
<tr>
<td>DANC 532</td>
<td>Digital Media for Dancers</td>
<td>2</td>
</tr>
<tr>
<td>DANC 550</td>
<td>Advanced Research in Dance</td>
<td>1 to 4</td>
</tr>
<tr>
<td>ECE 537</td>
<td>Speech Processing Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>EPSY 587</td>
<td>Hierarchical Linear Models</td>
<td>4</td>
</tr>
<tr>
<td>EPSY 589</td>
<td>Categorical Data Analysis in Educational Psychology</td>
<td>4</td>
</tr>
<tr>
<td>IE 510</td>
<td>Applied Nonlinear Programming</td>
<td>4</td>
</tr>
<tr>
<td>IE 511</td>
<td>Integer Programming</td>
<td>4</td>
</tr>
<tr>
<td>IE 512</td>
<td>Advanced Educational Technologies for Engagement and Interactive Learning</td>
<td>4</td>
</tr>
<tr>
<td>INFO 555</td>
<td>Advanced Educational Technologies for Engagement and Interactive Learning</td>
<td>4</td>
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</table>

For additional details and requirements refer to the degree requirements (https://www.informatics.illinois.edu/informatics-phd/), the appropriate department's graduate handbook, and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook/).
Informatics, PhD

Information listed in this catalog is current as of 09/2023

LING 501 Syntax I 4
LING 502 Phonology I 4
LING 507 Formal Semantics I 4
LING 520 Acoustic Phonetics 4
IS 506 Human-Centered Information Systems 4
IS 524 Data Governance 2 or 4
IS 525 Data Warehousing and Business Intelligence 4
IS 526 Building Advanced Interactive Systems 4
IS 556 Internet of Things 4
IS 557 Applied Machine Learning: Team Projects 4
IS 586 Usability Engineering 4
MUS 407 Elect Music Techniques I 3
MUS 409 Elect Music Techniques II 2
MUS 448 3
MUS 506 Graduate Level Composition 2 to 6
MUS 507 Sem in Music Comp and Theory 2 or 4
NUTR 511 Regulation of Metabolism 4
PATH 516 Epidemiology Infectious Dis 3
PATH 517 Principle/Method Epidemiology 4
PATH 560 Spatial Epidemiology 4
PS 530 Quant Pol Analysis I 4
PS 531 Quant Pol Analysis II 4
PSYC 509 Psych Scaling Multidimen Meth 4
THEA 419 Theatrical CAD Drafting 2
THEA 430 Technical Direction I 3
THEA 437 Software for Lighting Design 2
THEA 453 Introduction to Theatre Sound 3
THEA 454 Sound Design I 3
THEA 455 Sound Design II 3
THEA 550 Colloquium Design & Theat Tech 4 or 8
UP 519 Advanced Applications of GIS 4

CS 573 Algorithms 4
ECE 417 Multimedia Signal Processing 4
ECE 418 Image & Video Processing 4
ECE 420 Embedded DSP Laboratory 2
ECE 437 Sensors and Instrumentation 3
ECE 439 Wireless Networks 3 or 4
ECE 453 Wireless Communication Systems 4
ECE 470 Introduction to Robotics 4
ECE 473 Fund of Engrg Acoustics 3 or 4
ECE 511 Computer Architecture 4
ECE 512 Computer Microarchitecture 4
ECE 513 Vector Space Signal Processing 4
ECE 517 Nonlinear & Adaptive Control 4
ECE 537 Speech Processing Fundamentals 4
ECE 544 Topics in Signal Processing 4
ECE 547 Topics in Image Processing 4
ECE 549 Computer Vision 4
ECE 550 Advanced Robotic Planning 4
ECE 551 Digital Signal Processing II 4
ECE 558 Digital Imaging 4
ECE 580 Optimiz by Vector Space Methods 4
ECE 594 Math Models of Language 3 or 4
EPSY 580 Statistical Inference in Education 4
EPSY 581 Applied Regression Analysis 4
EPSY 582 Advanced Statistical Methods 4
EPSY 587 Hierarchical Linear Models 4
EPSY 588 Covar Struct and Factor Models 4
IS 504 Sociotechnical Information Systems 4
IS 507 Data, Statistical Models and Information 4
IS 515 Information Modeling 4
IS 517 Methods of Data Science 4
IS 519 Research Design in Information Science 4
IS 527 Network Analysis 4
IS 537 Theory & Practice of Data Cleaning 4
IS 547 Foundations of Data Curation 4
IS 545 Advanced Data Visualization 4
IS 575 Metadata in Theory & Practice 4
IS 577 Data Mining 2 or 4
IS 596 Advanced Topics in Human-Centered Design & Systems (Section D: Implement Info Stor& Retr) 2 to 4
MATH 580 Combinatorial Mathematics 4
PSYC 509 Psych Scaling Multidimen Meth 4
PSYC 514 Seminar in Cognitive Science 2 or 4
PSYC 588 Covar Struct and Factor Models 4
PSYC 594 Multivar Anlys in Psych and Ed 4
STAT 510 Mathematical Statistics 4
STAT 525 Topics in Computational Statistics 4
STAT 542 Statistical Learning 4
STAT 571 Multivariate Analysis 4
STAT 587 Hierarchical Linear Models 4

Foundations Courses (Select 2 courses at the 500 level from list below)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPSC 540</td>
<td>Applied Statistical Methods II</td>
<td>4</td>
</tr>
<tr>
<td>CPSC 541</td>
<td>Regression Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CS 414</td>
<td>Multimedia Systems</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CS 418</td>
<td>Interactive Computer Graphics</td>
<td>0 to 4</td>
</tr>
<tr>
<td>CS 419</td>
<td>Production Computer Graphics</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CS 427</td>
<td>Software Engineering I</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CS 438</td>
<td>Communication Networks</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CS 440</td>
<td>Artificial Intelligence</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CS 446</td>
<td>Machine Learning</td>
<td>3 or 4</td>
</tr>
<tr>
<td>CS 465</td>
<td>User Interface Design</td>
<td>4</td>
</tr>
<tr>
<td>CS 511</td>
<td>Advanced Data Management</td>
<td>4</td>
</tr>
<tr>
<td>CS 512</td>
<td>Data Mining Principles</td>
<td>4</td>
</tr>
<tr>
<td>CS 519</td>
<td>Scientific Visualization</td>
<td>4</td>
</tr>
<tr>
<td>CS 546</td>
<td>Advanced Topics in Natural Language Processing</td>
<td>4</td>
</tr>
<tr>
<td>CS 558</td>
<td>Topics in Numerical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CS 565</td>
<td>Human-Computer Interaction</td>
<td>4</td>
</tr>
</tbody>
</table>
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1. Students will acquire broad and deep knowledge of informatics including both foundation and application areas. Students are expected to become experts in their specialties, but also be knowledgeable about basic principles across the informatics domain.

2. Students will demonstrate the ability to conduct informatics research in their area of specialty through developing an original piece of scholarship.

3. Students will demonstrate skills in oral and written communication sufficient to publish and present work in their field and to prepare grant proposals.

4. Students will interact with people from diverse backgrounds as both leaders and team members with integrity and professionalism.

5. Students will be aware of ethical issues regarding research including the use of human subjects (if appropriate), research misconduct, and publication practice.

Programs in Informatics

- Undergraduate Minor
- Informatics Minor [link]
- Graduate Majors
- Bioinformatics, MS [link]
- Animal Sciences Concentration [link]
- Bioengineering Concentration [link]
- Chemical & Biomolecular Engineering Concentration [link]
- Computer Science Concentration [link]
- Crop Science Concentration [link]
- Information Sciences Concentration [link]
- Informatics, PhD [link]

for the degree of Doctor of Philosophy in Informatics

Informatics Program
Informatics website [link]
Informatics faculty affiliates [link]
On-Campus Contact: Karin Readel (kereadel@illinois.edu), Senior Education Coordinator, Informatics
(217)-244-1220

Admissions
Overview of ischool Admissions & Requirements [link]
Graduate College Admissions & Requirements [link]

Information listed in this catalog is current as of 09/2023