Informatics, B.S.

Want to learn how to design better user interfaces? Curious to learn how to observe people when they use information technology and how to turn your findings into innovative products? Wondering how evolving privacy laws affect the design of software worldwide? Care about helping people in need with smart apps? Interested in learning how organizations work and how information technology can support their practices?

If you answered yes to one or more of these questions, UC Irvine’s Informatics major just might be the choice for you.

The B.S. in Informatics is designed around a small set of core courses that introduce the fundamentals of Informatics (human computer interaction, design), software (programming, requirements analysis), and human behavior (social analysis of computerization). From there, three specializations — human-computer interaction, health informatics, and organizations and information technology — enable students to focus their learning with more than three dozen courses from which they can choose. The major is inherently interdisciplinary, with courses ranging from sociology and psychology to management and public health, depending on the specialization chosen.

Throughout the major, a variety of project courses offer students hands-on experiences in creative design practices, app development, ethnography, information management, business IT, and other topics. You learn how to apply your skills in different domains and work in different teams, culminating in a two-quarter capstone course in which you engage in a real-world project sponsored by a company or organization outside the university.

Overall, the major strongly emphasizes people and design; building an understanding of how existing technologies shape human behavior, society, and culture; and how we can design future technologies that better fit human and organizational practices. Given the fluid nature of people’s expectations for information technology and what tomorrow’s technology can offer, students learn how to adapt to the continuous new circumstances of the profession — whether it is a new client and their habits, an emerging new device or software capability, or a new team and its practices.

Informatics majors complete one of four specializations: Human-Computer Interaction (HCI), Organizations and Information Technology (OIT), Health Informatics (HI), or Specialization in Individual Studies. More information is available at the Department of Informatics website (http://www.informatics.uci.edu/undergrad/bs-informatics/).

Freshmen Applicants: See the Undergraduate Admissions section (http://catalogue.uci.edu/informationforprospectivestudents/undergraduateadmissions/#admissionasafreshmanapplicanttext).

Transfer Applicants:

Transfer applicants who satisfactorily complete course prerequisites will be given preference for admission. All applicants must complete the following required courses: one course in statistics or boolean algebra, one year of object-oriented programing (python, java, C++), and completion of lower-division writing. Students are encouraged to complete as many of the lower-division degree requirements as possible prior to transfer. Visit the UCI Office of Admissions website for information on transfer requirements for our major.

Bren School of ICS majors (including shared majors, BIM, and CSE) pursuing minors within the Bren School of ICS may not count more than five courses toward both the major and minor. Some ICS majors and minors outside of the School are not permitted due to significant overlap. Visit the ICS Student Affairs Office website for Majors and Minors restrictions. (http://www.ics.uci.edu/ugrad/degrees/MajorMinor_Restrictions_Chart.pdf) All students should check the Double Major Restrictions Chart (https://www.ics.uci.edu/ugrad/degrees/Db_Major_Restrictions_Chart.pdf) and view our information page (http://www.ics.uci.edu/ugrad/degrees/Double_Majors.php) on double majoring to see what degree programs are eligible for double majoring.

All students must meet the University Requirements (http://catalogue.uci.edu/informationforadmittedstudents/requirementsforabachelorsdegree/).

Major Requirements

<table>
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<td>A. Select one of the following series:</td>
</tr>
<tr>
<td>I&amp;C SCI 31- 32- 33</td>
</tr>
<tr>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>and Programming with Software Libraries</td>
</tr>
<tr>
<td>and Intermediate Programming</td>
</tr>
<tr>
<td>or I&amp;C SCI 32A- 33</td>
</tr>
<tr>
<td>Python Programming and Libraries (Accelerated)</td>
</tr>
<tr>
<td>and Intermediate Programming</td>
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| B. Complete:            |
| I&C SCI 45J             |
| Programming in Java as a Second Language |
| IN4MATX 43              |
| Introduction to Software Engineering |
| I&C SCI 6B              |
| Boolean Logic and Discrete Structures |
| STATS 7                 |
| Basic Statistics |
| or STATS 67             |
| Introduction to Probability and Statistics for Computer Science |

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### Upper-division

A. Informatics Core Requirements:

<table>
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<td>IN4MATX 113</td>
<td>Requirements Analysis and Engineering</td>
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<td>Software Design: Applications</td>
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<td>IN4MATX 131</td>
<td>Human Computer Interaction</td>
</tr>
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<td>IN4MATX 151</td>
<td>Project Management</td>
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<td>IN4MATX 161</td>
<td>Social Analysis of Computing</td>
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<td>IN4MATX 191A-191B</td>
<td>Senior Design Project and Senior Design Project</td>
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B. One of the following specializations:

1. **Specialization in Human-Computer Interaction**

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<tbody>
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<td>IN4MATX 132</td>
<td>Project in Human-Computer Interaction Requirements and Evaluation</td>
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<td>User Interaction Software</td>
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<td>Information Retrieval</td>
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<td>IN4MATX 143</td>
<td>Information Visualization</td>
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<td>IN4MATX 153</td>
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</tr>
<tr>
<td>IN4MATX 162W</td>
<td>Organizational Information Systems</td>
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<tr>
<td>IN4MATX 171</td>
<td>Introduction to Health Informatics</td>
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   and select two project courses from the following:

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<td>Computer Game Development</td>
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<td>IN4MATX 134</td>
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</tr>
<tr>
<td>IN4MATX 148</td>
<td>Project in Ubiquitous Computing</td>
</tr>
<tr>
<td>IN4MATX 163</td>
<td>Project in the Social and Organizational Impacts of Computing</td>
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<tr>
<td>IN4MATX 172</td>
<td>Project in Health Informatics</td>
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</table>

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2. **Specialization in Organizations and Information Technology**

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<tr>
<td>IN4MATX 162W</td>
<td>Organizational Information Systems</td>
</tr>
<tr>
<td>IN4MATX 163</td>
<td>Project in the Social and Organizational Impacts of Computing</td>
</tr>
<tr>
<td>MGMT 1</td>
<td>Introduction to Business and Management</td>
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<tr>
<td>MGMT 102</td>
<td>Managing Organizational Behavior</td>
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<tr>
<td>MGMT 173</td>
<td>Business Intelligence for Analytical Decisions</td>
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<tr>
<td>MGMT 178</td>
<td>Management of Information Technology</td>
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<td>PSCI 9</td>
<td>Introduction to Psychology</td>
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<td>PSCI 104S</td>
<td>Social Animal: An Introduction to Social Psychology</td>
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<tr>
<td>SOCIOL 41</td>
<td>Small Group Dynamics</td>
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<tr>
<td>SOCIOL 135</td>
<td>Social Psychology of Networks</td>
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<tr>
<td>SOCIOL 141</td>
<td>Organizations</td>
</tr>
<tr>
<td>SOCIOL 143</td>
<td>Social Networks and Social Support</td>
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<tr>
<td>COMPSCI 100–199</td>
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3. **Specialization in Health Informatics**

   1
Complete three of following:

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<tr>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>IN4MATX 171</td>
<td>Introduction to Health Informatics</td>
</tr>
<tr>
<td>IN4MATX 172</td>
<td>Project in Health Informatics</td>
</tr>
<tr>
<td>IN4MATX 173</td>
<td>Consumer Health Informatics</td>
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<tr>
<td>or IN4MATX 174</td>
<td>Health Data Analytics</td>
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Select four from the following:

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>IN4MATX 124</td>
<td>Internet Applications Engineering</td>
</tr>
<tr>
<td>IN4MATX 132</td>
<td>Project in Human-Computer Interaction Requirements and Evaluation</td>
</tr>
<tr>
<td>IN4MATX 133</td>
<td>User Interaction Software</td>
</tr>
<tr>
<td>IN4MATX 134</td>
<td>Project in User Interaction Software</td>
</tr>
<tr>
<td>IN4MATX 141</td>
<td>Information Retrieval</td>
</tr>
<tr>
<td>IN4MATX 143</td>
<td>Information Visualization</td>
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<td>IN4MATX 148</td>
<td>Project in Ubiquitous Computing</td>
</tr>
<tr>
<td>IN4MATX 153</td>
<td>Computer Supported Cooperative Work</td>
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<td>IN4MATX 162W</td>
<td>Organizational Information Systems</td>
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<td>COMPSCI 111</td>
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<td>COMPSCI 122A</td>
<td>Introduction to Data Management</td>
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<td>Parallel and Distributed Computing</td>
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<td>Computer and Network Security</td>
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<td>COMPSCI 145</td>
<td>Embedded Software</td>
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<td>COMPSCI 171</td>
<td>Introduction to Artificial Intelligence</td>
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<td>COMPSCI 178</td>
<td>Machine Learning and Data-Mining</td>
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and select two courses from the following:

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<tr>
<td>PUBHLTH 1</td>
<td>Principles of Public Health</td>
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<tr>
<td>PUBHLTH 2</td>
<td>Case Studies in Public Health Practice</td>
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<tr>
<td>PUBHLTH 91</td>
<td>Disparities in Health Care</td>
</tr>
<tr>
<td>PUBHLTH 101</td>
<td>Introduction to Epidemiology</td>
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<tr>
<td>PUBHLTH 122</td>
<td>Health Policy</td>
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<td>PUBHLTH 127</td>
<td>Public Health Programs for the Corporate World</td>
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<td>PUBHLTH 125</td>
<td>Foundations of Community Health</td>
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and select one additional course from the following:

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<td>COMPSCI 100-199</td>
<td></td>
</tr>
<tr>
<td>PUBHLTH 100-199</td>
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</table>

### 4. Specialization in Individual Studies

1 Informatics majors specializing in Health Informatics may not pursue the Health Informatics minor.

2 Informatics majors must complete a detailed proposal to apply for this specialization. All candidates must meet the following minimum qualifications for consideration:

- UCI transcript demonstrating at least 3.0 UC GPA.
- Completion of at least 46 units or sophomore standing at UC Irvine.

Proposals must include the following:

- Syllabi and/or course descriptions of intended coursework.
- Academic plan demonstrating completion of 40 units of credit that significantly complements the core Informatics courses to create a coherent curriculum focused on studying some aspect of living, working, and building in a digital world.
- Students entering as freshmen should plan to submit their proposals no later than the beginning of spring quarter of the freshman year.
- Students entering as transfers must submit their proposals no later than the beginning of spring quarter of their first year at UCI.
- Students must submit their approval proposals to the ICS Student Affairs no later than two weeks after receiving a signature.
All proposals are to be submitted to the Department of Informatics’ Undergraduate Vice Chair for approval. Failure to receive approval will require majors to choose another specialization for the major. Information about the Department of Informatics can be found at Informatics.uci.edu (http://www.informatics.uci.edu).

Sample Program of Study — Informatics: Health Informatics (HI)

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<td>Winter</td>
<td>Spring</td>
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<td>Spring</td>
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Sample Program of Study — Informatics: Human-Computer Interaction (HCI)

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Sample Program of Study — Informatics: Organizations and Information Technology (OIT)

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- Digital Information Systems, Minor
- Game Design and Interactive Media, B.S.
- Health Informatics, Minor
- Informatics, M.S.
- Informatics, Minor
- Informatics, Ph.D.
- Master of Human Computer Interaction and Design
- Master of Software Engineering
- Software Engineering, M.S.
- Software Engineering, Ph.D.