## PH.D. IN INFORMATICS – HUMAN–COMPUTER INTERACTION TRACK

### Course Requirements & Plan of Study

The Ph.D. in Human Computer Interaction is a 90 credit hour program that includes:

- **Core A courses** 15 Cr. Hr. H541, H543, H561, H563, H564
- **Core B courses** 12 Cr. Hr. H501, H600, H624, H634
- **Research Rotations** 6 Cr. Hr. H790 (x 2)
- **Research Methods** 9 Cr. Hr. H575, plus two research methods courses (see below)
- **Elective courses** 9–18 Cr. Hr. (see recommended electives)
- **Minor** 12 Cr. Hr.
- **Dissertation** 21–30 Cr. Hr.

### Recommended Plan of Study (5 years)

<table>
<thead>
<tr>
<th>Yr.</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
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<tbody>
<tr>
<td>1</td>
<td>• H541 Interaction Design Practice (Other title: HCI Design 1)</td>
<td>• H501 Introduction to Informatics</td>
<td>• H790 Research Rotations 1 (3cr.)</td>
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<td>• H543 Interaction Design Methods (Other title: Usability &amp; Eval. Methods)</td>
<td>• H757 Informatics Research Design</td>
<td><strong>Recommended Elective: H590-topic:</strong> Ubiquitous Computing</td>
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<td><strong>Recommended Research Methods course:</strong></td>
<td><strong>Recommended Research Methods course:</strong></td>
<td><strong>Recommended Elective:</strong> H590 User Experience Architectures</td>
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<td>PSY60000 Statistical Inference</td>
<td>PSY60100 Research Design</td>
<td><strong>Recommended Research Methods:</strong> PSY60800 Measurement Theory</td>
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<td><strong>Recommended Elective:</strong></td>
<td><strong>Recommended Elective:</strong></td>
<td><strong>Elective – If needed.</strong></td>
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<td>H563 Psychology of HCI</td>
<td>H561 HCI Design 2 (Old #: I561)</td>
<td><strong>Qual Exams – August</strong></td>
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|     | H624 HCI Advance Seminar 1 | **Recommended Res. Methods course:** | 5 <<
|     | **Recommended Res. Methods course:** | PSY60100 Research Design | **Elective – If needed.** |
|     | PSY60000 Statistical Inference | **Recommended Elective:** H590-topic: Social Computing |  |
| 2   | • H600 Profession. & Pedagogy in Informatics | • H634 HCI Advanced Seminar 2 – Arr | **Dissertation – Arranged.**
|     | • H790 Research Rotations 2 (3cr.) Arr. | • H564 Prototyping for Interactive Systems | **Elective – If needed.** |
|     | **Recommended Research Methods course:** | **Elective – If needed.** |  |
|     | PSY60800 Measurement Theory |     |  |
| 3   | • Dissertation – Arranged. | • Dissertation – Arranged. | **Dissertation – Arranged.** |
|     | • Elective – If needed. | • Elective – If needed. | **Elective – If needed.** |
| 4   | • Dissertation – Arranged. | • Dissertation – Arranged. | **Dissertation – Arranged.** |
|     | • Elective – If needed. | • Elective – If needed. | **Elective – If needed.** |
| 5   | • Dissertation – Arranged. | • Dissertation – Arranged. | **Dissertation – Arranged.** |
|     | • Elective – If needed. | • Elective – If needed. | **Elective – If needed.** |

### The PhD Qualifying exam will cover the following courses as well as other relevant subject matter:


### IMPORTANT:

- Review the PhD Handbook online for mandatory forms to file and important deadlines during the PhD curriculum:
  - [http://informatics.iupui.edu/files/phd-handbook.pdf](http://informatics.iupui.edu/files/phd-handbook.pdf)

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1. Please note that HCI courses are NOT offered in more than one semester; if you miss the course in one semester, you will have to wait another year.
2. According to university graduate school policy, Ph.D. students must take a minimum of 12 credit hours of a minor outside their respective major, and comply with the minor requirements of the respective department/unit. It is preferable that these four courses (12 cr. hrs.) be taken from outside the School of Informatics. However, HCI students may take Health Informatics or Bioinformatics as a minor because of the disciplinary distance of these fields. Students should, however, consult with their advisor and advisory committee before selecting a minor. If students have transferred the credits from their MS degree (e.g., Computer Science), 12 of those credit hours may serve as a minor pending the approval of the respective department.
3. Students who receive full support from the School as a teaching assistant (TA) or research assistant (RA) are on a 12-month appointment and must remain as a full-time student in the summer. Other students who do not receive support from the School (many of whom hold an outside job) are also advised to remain full-time in the summer to move through the program more quickly.
4. H501 for HCI students is ONLY offered in the spring. H501 in the fall is ONLY for Bioinformatics and Health Informatics students.
5. All PhD students must take their qualifying exams at the end of their second year (summer) in the program.
OTHER ELECTIVE COURSES IN THE SCHOOL AND ON CAMPUS
(Students MUST Check for Prerequisites and Course Availability from the Respective Departments)

INFORMATICS
H503 Social Impact of Information Technology
H505 Informatics Project Management
H510 Data Acquisition and Lab Automation
H512 Scientific Data Management
H535 Clinical Information Systems
H540 Data Mining for Security
H550 Legal and Business Issues in Informatics
H554 Independent Study in HCI (1–3 cr.)

INFORMATICS
H503 Social Impact of Information Technology
H505 Informatics Project Management
H510 Data Acquisition and Lab Automation
H512 Scientific Data Management
H535 Clinical Information Systems
H540 Data Mining for Security
H550 Legal and Business Issues in Informatics
H554 Independent Study in HCI (1–3 cr.)

CSCI 550 Computer Graphics
CSCI 552 Advanced Graphics and Visualization
CSCI 565 Programming Language

DESIGN (HERRON)
HER-V 501 Design Thinking (1.5 cr.)
HER-V 502 Human Factors in Design (1.5 cr.)
HER-R 511 Visual Research (3 cr.)

MEDIA ARTS AND SCIENCE
N500 Principles of Digital Arts Production
N502 Digital Media Motion & Sim. Meth
N503 Digital Media Appl Design Proc
N504 Advanced Interactive Design Appl
N506 Media Arts and Technology Project
N510 Web Database Concepts
N501 Foundations of Digital Production

N500 Principles of Digital Arts Production
N502 Digital Media Motion & Sim. Meth
N503 Digital Media Appl Design Proc
N504 Advanced Interactive Design Appl
N506 Media Arts and Technology Project
N510 Web Database Concepts
N501 Foundations of Digital Production

CSCI 550 Computer Graphics
CSCI 552 Advanced Graphics and Visualization
CSCI 565 Programming Language

COMUNICATION
COMM–C 500 Advanced Comm Theory
COMM–C 531 Media Theory and Criticism
COMM–C 592 Advanced Health Communication
COMM–C 620 Computer-Mediated Communication

SOCIOLOGY
SOC–R 556 Advanced Sociological Theory I
SOC–R 557 Advanced Sociological Theory II
SOC–R 559 Intermediate Sociological Statistics
SOC–R 593 Applied Fieldwork for Sociologists
SOC–S 530 Introduction to Social Psychology

GEOGRAPHY
GEOG–G 536 Advanced Remote Sensing
GEOG–G 537 Computer Cartography and Graphics
GEOG–G 538 Intro to Geographic Information Systems
GEOG–G 539 Advanced Geographic Information Systems

OTHERS
ANTH 501 Fundamentals of Applied Anthropology
ED 531 Computers in Education
SLIS-S 532 INFO Architecture for the Web

CSCI 550 Computer Graphics
CSCI 552 Advanced Graphics and Visualization
CSCI 565 Programming Language

OTHER RECOMMENDED RESEARCH METHODS COURSES
(Students MUST Check for Prerequisites & Semesters Offered from the Respective Departments)

ANTH-E404 Field Meth in Ethnography
COM 501 Qualitative Research
COM 502 Applied Qualitative Research Methods
EDU 520 Strategies for Educational Inquiry
EDU 611 Qualitative Inquiry in Education
NURS-L 650 Data Ana for Clinical & Admin Decis-Making
NURS-R 612 Interpretive Data Analysis (2 Cr.), Summer I-II
PSY 600 Statistical Inference (Fall Even Yr)
PSY 601 Experimental Design (Spg Even Yr)
PSY 608 Measurement Theory and Interpret Data
PSY 640 Survey of Social Psychology I
PSY 655 Cognitive Development (Fall Even Yr)
PSY-I 643 Field Methods & Exper
SOC-R 551 Quantitative Methods – Sociology
SOC-R 551 Quantitative Methods Sociology
SOC-R 559 Intermediate Soc Statistics

ANTH-E404 Field Meth in Ethnography
COM 501 Qualitative Research
COM 502 Applied Qualitative Research Methods
EDU 520 Strategies for Educational Inquiry
EDU 611 Qualitative Inquiry in Education
NURS-L 650 Data Ana for Clinical & Admin Decis-Making
NURS-R 612 Interpretive Data Analysis (2 Cr.), Summer I-II
PSY 600 Statistical Inference (Fall Even Yr)
PSY 601 Experimental Design (Spg Even Yr)
PSY 608 Measurement Theory and Interpret Data
PSY 640 Survey of Social Psychology I
PSY 655 Cognitive Development (Fall Even Yr)
PSY-I 643 Field Methods & Exper
SOC-R 551 Quantitative Methods – Sociology
SOC-R 551 Quantitative Methods Sociology
SOC-R 559 Intermediate Soc Statistics

STAT 512 Applied Regression Analysis
STAT 516 Basic Probability Appl
STAT 519 Intro to Probability
STAT 521 Statistical Computing
STAT-522 Sampling and Survey Techniques
STAT 524 Applied Multivariate Analysis
STAT 525 Intermediate Stat Methodology
STAT 529 Applied Dec Theory and Bayesian Stat
STAT 619 Probability Theory
STAT 511 Statistical Methods l

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