Qualifying Exams for Human-Computer Interaction (HCI)  
Ph.D. Students

**Written and Oral Exam**

**WRITTEN EXAM**

1. All students will take a written qualifying examination that covers the following courses: **I541, I558 (also listed as I561), I543, I563, I575, and I501.** The examination will be set by a group of faculty who are familiar with the content of the core courses.

2. The exam must be taken after the student completes their second year in the program, whether the student is full-time or part-time. In other words, part-time students do NOT get extra time to complete their course work. As such, all necessary course work must be completed by this time. It is very important that students work with their advisor to work out a course schedule to make sure they complete all necessary courses in preparation for the written qualifying exams. Written exams are typically scheduled 2 weeks before the start of the Fall semester.

3. The examination will be set by a group of faculty who are familiar with the content of the core courses.

4. Students who do not successfully complete the examination can retake the examination only a second time (within 6 months, typically in January). Failing the exams the second time will lead to dismissal from the program.

5. The written examination consists of three parts:

   **Part A: General Informatics Knowledge** (1 hour)  
   The purpose of Part A is to test the students’ general knowledge of the field of informatics and will be based primarily on the course **I501 Introduction to Informatics**, including all reading, class discussions, and projects. The test will consist of multiple choice and opening questions.

   **Part B: Breadth Exam** (3 hours)  
   The purpose of Part B is to the students’ broad understanding of the discipline of HCI, drawing primarily from three courses (**I541 HCI I, I558/I561 HCI II, and I543 Usability and Evaluative Methods**). Student should study the texts used for these courses, including all reading, class discussions, and projects. The test will consist of open questions.

   **Part C: Depth Exam** (Take Home Exam, one week to complete)  
   The purpose of Part C is to test the students’ understanding of the deeper theories and applications within the field of HCI, drawing primarily from three sources, including: **I563 Psychology of HCI, and I575 Informatics Research Design**. Additionally, students will have to complete an in-depth critique on a published paper provided. The exam is given to the students immediately following their completion of the in-class exam.

**ORAL EXAM**

1. The purpose of the oral examination is to assess the overall ability of the candidate to master the HCI general knowledge, as well as orally articulate reflective, critical and in-depth responses on the core topics of discipline, as studied in both required and elective courses. The oral exam is also an opportunity for the students to provide more in-depth answers to questions of the written exams, when needed.
2. Only those students who will successfully pass all parts of the written exam (80% or higher on every part of the written exam) will be scheduled for the oral examination.
3. Students must pass both the written and oral exam before passing on to candidacy. Only two attempts to pass the oral examination will be allowed.
4. The oral exam committee typically consists of at least two HCI faculty, and the Program Director.
5. The oral exam lasts approximately one hour for each individual student.

GRADES AND DATES
1. Passing grade: Minimum 80% for each part of the Written Exam, and successfully pass (pass/fail grade) the Oral exam.
2. Tentative date for the in-class written exam: The first Friday of the first week of August, each year.
3. Tentative date for the take-home written exam: The following Friday after the in-class exam is taken.
4. Tentative date for the oral exam: Given one week following the handing in of the take-home portion of the exam.

For any question on the HCI Qual Exams, please refer to the HCI Program Director Dr. Davide Bolchini (dbolchin@iupui.edu).

The following pages include the detailed structure and format of the written exam.
Qualifying Examination for HCI Ph.D. Students

Pre-Exam Guidance for the Written Part

August <date>

IMPORTANT NOTES:

THIS DOCUMENT INCLUDES INSTRUCTIONS AND FORMAT ONLY FOR THE HCI-SPECIFIC PART OF THE WRITTEN EXAM (PART B AND C).

FOR INFO ON THE I501 WRITTEN EXAM (PART A), PLEASE REFER TO DR. PALAKAL.

PART B

IN-CLASS EXAM
(Three Hour Exam)
Covering: Courses I541, I558 (or I561), I543
August <date TBD>, <time>

AND

PART C

TAKE HOME EXAM
(One Week to Complete)

PARTS 1:
Covering: I563 – Psychology of HCI and I575 – Informatics Research Design

PARTS 2:
Covering: Published Research Paper Critique
HCI Ph.D. Qualifying Examination

PART B: IN-CLASS EXAM
(3 hours, one hour for each course covered)

Courses I541, I558 (or I561), and I543

I541 - Human Computer Interaction I


In this part you will be asked to select 3 questions to answer out of a pool of 4-5 questions. Each question will focus on one or more specific topics covered in the chapters of the reference book and the readings assigned during the course. You will elaborate each answer within approximately half- to one page. The answer to each question must demonstrate full mastery of the content studied (in detail), intellectual depth, excellent structuring and logic, as well as fluent and precise writing. Enriching the illustration of the theory with concrete examples of HCI research and practice is highly recommended.

I558 (or I561) - Human Computer Interaction II

Reference Book: {actual book edition used for the course} Example: Contextual Design by Holtzblatt et al., plus all course readings included in the Syllabus.

In this part you will be asked to select 3 questions to answer out of a pool of 4-5 questions. Each question will focus on one or more specific topics covered in the chapters of the reference book and the readings assigned during the course. You will elaborate each answer within approximately half- to one page. The answer to each question must demonstrate full mastery of the content studied (in detail), intellectual depth, excellent structuring and logic, as well as fluent and precise writing. Enriching the illustration of the theory with concrete examples of HCI research and practice is highly recommended.

I543 - Usability and Evaluative Methods

Reference Book: {actual book edition used for the course} Example: User Interface Design and Evaluation by Stone et al., plus all course readings included in the Syllabus.

Select 3 questions to answer out of the following:

In this part you will be asked to select 3 questions to answer out of a pool of 4-5 questions. Each question will focus on one or more specific topics covered in the chapters of the reference book and the readings assigned during the course. You will elaborate each answer within approximately half- to one page. The answer to each question must demonstrate full mastery of the content studied (in detail), intellectual depth, excellent structuring and logic, as well as fluent and precise writing. Enriching the illustration of the theory with concrete examples of HCI research and practice is highly recommended.
PART C: TAKE HOME, DEPTH EXAM
(INCLUDING PARTS 1 AND 2)

General Take-Home Exam Delivery Instructions

- Email your final take-home exam answers to Dr. Mathew Palakal (mpalakal@iupui.edu)
- Parts 1 and 2 should be sent in separate MS Word files, i.e., two separate documents.
- Students must return all answers from Part B to Dr. Palakal by <DATE>, 5:00pm.

- - - PART 1 - - -

COVERING COURSES: I563 AND I575

Part One consists of questions from the two courses, i.e., I563 (Psychology of HCI) and I575 (Informatics Research Design); from which students must select questions from each course.

I563 - Psychology of HCI

The questions will be answered in essay format, with a maximum of 2000 words for each answer, unless otherwise noted. (Figures and references are not counted toward this word limit.) If students need to go over the 2000 word max, they may do so only if they select some of the longer or more complex questions. However, they still should attempt to limit their responses. When answering the questions, restate the question, and then provide the answer.

Questions: (Only answer two of the three questions. Each answer should not exceed 2,000 words)

1. Question …
2. Question…
3. Question….

I575 – Informatics Research Design

(Answer one question. The answer should not exceed 3,000 words.)

4. Question …
Part Two will be a written critique of an existing published paper. The critique should be in a format similar to what is common in a journal paper review or editorial critique. Your critique should not exceed 2000 words, if at all possible. You may use any resource available to assess the quality of the paper. Do not assume that the paper is without issues just because it was published in a high ranking journal. You have been provided two papers from which you should select one. The two papers are as follows.

- **ASSIGNED PAPER 1 TITLE AND BIBLIOGRAPHIC INFORMATION**
- **ASSIGNED PAPER 2 TITLE AND BIBLIOGRAPHIC INFORMATION**

The digital versions of the papers will be emailed to each student in due time.

**General Directions:**
- You must read the paper critically, considering the viability of the theory, as well as its application to the methodological section of the paper.
- Briefly state the nature and contributions of the paper.
- Examine the coherency and flow of the notions expounded and the conclusions argued.
- Are there any threats to validity or any basic research design issues that are concerning?
- Are the conclusions supported by the findings of the study or the theoretical argument(s) outlined? This includes both whether it has something of substance to say and whether it presents it logically and clearly.
- The criteria for judging the quality of the content depend on what kind of paper it is. While a paper can focus on a combination of aspects, a paper will usually have a principal thrust.
- Make clear arguments as to why the paper is acceptable or not, and give constructive and specific suggestions as to how the paper can be improved.
- Other criteria to consider are that the paper should:
  - Deal with important issues (i.e., having practical applications to or implications for human-computer interaction), and it must be technically sound in how it deals with these issues.
  - Be original in its insights, results, or approach; and it must not have been published previously. (This latter point may be difficult to assess given the time limitation of this exam; so do NOT do a literature review because we must assume that the original reviewers did this already.)
  - Be scholarly and not insular, i.e., it must establish its relation to other work in the field.
  - Have a clear and logical presentation, as if to be readable by the whole interdisciplinary HCI audience.
  - Additional supporting thoughts related to the style of the paper, of which you should consider these points.¹
    - If the paper is mainly theoretical, it should be judged on the insightfulness of its ideas and the rigor of its arguments.
    - If it is mainly empirical, it should be judged on the validity of its results and the appropriateness of its techniques.
    - If it is mainly a methodology paper, it should be judged on the usefulness of its proposed methodology.
    - If it is a design paper, it should be judged on the quality, novelty, and appropriateness of its solution to a problem; the rationale for the design decisions; the implementation; and the assessment of its success and weaknesses.

¹ Some portions of these review directions were extracted from the reviewer’s guidelines for the Journal of HCI.