

Ph.D. Preliminary Examination Department of Computer Science Kent State University

1. Goals and Definitions

The *Ph.D. Preliminary Examination* is in place to assess a student's understanding of the basic *prerequisite concepts* for entrance into the Doctoral program in Computer Science. It is also in place to assure that all incoming Ph.D. students have the ability to effectively reason with and integrate the underlying knowledge and concepts in the broad field of Computer Science. This ability is necessary to continue the student's studies in the degree program.

The goals of the Ph.D. Preliminary Exam:

- Assess a student's general ability to enter the Doctoral program
- Give the student a positive learning experience that benefits their academic career (i.e., helps prepare them for study in the Doctoral program)
- Cover only required prerequisite breadth knowledge for the degree program
- The exam is NOT be tied to specific courses

Time lines:

- Students who join the program in August must take the exam in mid November.
- Students who join the program in January must take the exam in mid April.

2. Exam Topics

The preliminary examination covers three areas:

- Data Structures and Fundamentals of Programming
- Operating Systems
- Design and Analysis of Algorithms

These are generally considered prerequisite (preliminary) knowledge for incoming students applying for entrance to the Ph.D. degree program in Computer Science. Any doctoral student conducting research in Computer Science must have at least the basic knowledge in these areas.

A complete and detailed list of the topics covered will be published with ample time (i.e., the six months prior to exam) for students to prepare for the exam. See the ***Preliminary Examination Reading List*** for a complete and detailed list of topics and suggested reading list. The reading list is the official description of the exam topics. The ***reading list*** will reference a text book(s) and associated chapters that reflect the topics covered on the exam. In certain cases a small number of classic papers may be part of the reading list. Textbooks must be those widely used in Computer Science curriculum and viewed as standard texts.

3. Exam Format

The exam will be a 4-hour exam, one sitting, over the three areas, with one hour and twenty minutes per area. There will be three questions in each area. The format will be a *written examination*. The exam questions will be reviewed and administered by the *preliminary examination committee* at the middle of Fall and Spring semesters. A minimum average score 75% in each area is required for a passing grade.

A student will only have two (2) opportunities to pass the Preliminary Examination. However, if the student fails the first attempt the second attempt must be done in the following semester. Extensions to this deadline can only be granted by the Graduate Studies Committee.

The student must register with the graduate secretary to take the exam at least one month prior to the examination date.

4. Management of Exam

A Preliminary Examination Committee (PEC), comprised of tenure track Graduate Faculty, will be formed each year. These committee duties will rotate regularly among the Graduate Faculty.

PEC will be in charge of:

- Administration of the exam
- Consistency and quality of the exam
- Publication of examination date
- Publication of the Preliminary Examination Reading List in a timely manner (at least one full term before the exam date)
- Publication of additional study materials (previous exams, etc.)
- Creation of exam questions – PEC can (should) solicit questions/answers from entire faculty
- Grading of the exam
- Exam must be graded in a timely fashion, that is, four (4) weeks after the exam is administered. This is to ensure that exam results can be used by the GSC for GA (re)appointments.
- Changes to reading list will be recommended by PEC and given to GSC for approval
- Changes to exam format will be recommended by PEC and given to GSC for approval

Each question must be graded by at least two PEC members. If there is a large difference in the assigned grade, a third grader will be necessary. A Preliminary Examination Form/Spreadsheet will be used to record the student's grades on each exam and dates they attempted the exam.

The exam will be developed in whole by the committee to ensure consistency. No one member can be completely in charge of developing questions and grading any one part of the exam.

PEC will give examination results and recommendations to GSC for final approval. The Graduate Coordinator, PEC, and the Graduate Secretary will maintain the Preliminary Examination Form/Spreadsheet for students.

It is the official responsibility of the Graduate Coordinator to inform a student of examination results. No other member of GSC or PEC may inform a student(s) of examination results or discuss the results with a student(s) prior to official notification by the Graduate Coordinator.