Computer Science Ph.D. Qualifying Examinations
Rules and Reading List

Revision of December 2000

Rules

The Computer Science Ph.D. qualifying exams are given once a year, typically in January. Next time they will be offered in January 2001. Students must notify the departmental Coordinator of Academic Advising (Jeanette Magee, 718-260-3210, jmagee@poly.edu) of their intent to take the exams at least one month before the exams. There are three exams, which must be taken at the same time on the student’s initial attempt. In general, students who do not pass all three exams will be required to retake all three. However, in exceptional circumstances, a student who does not pass all three exams may be required to retake only one of them. In either case, the exams must be retaken the next time they are offered. Students who do not pass the exams within two attempts may not continue in the PhD program.

Only students already accepted into the Ph.D. program may take the qualifying exams. Full-time students are expected to take the exams no later than during their second year. Supported full-time students may lose their support if they do not take the exams by that time. Full-time Ph.D. students who enter the program with a Master’s degree are encouraged to take the exams during their first year if they feel they will have sufficient preparation (between their Master’s coursework, their first-semester coursework at Poly, and their independent studying) by January of their first year.

Part-time students should consult the Director of Graduate Studies (Prof. Boris Aronov, 718-260-3092, aronov@ziggy.poly.edu) for an appropriate time to take these examinations. Normally, this will be after the student has taken the supporting courses (see below) for the examinations.

The contents of the reading list for each exam define the required knowledge on which the respective exam is based. While the student is advised to take the supporting courses associated with each exam, the student should rely on the reading lists, not the actual contents of the supporting courses, for a definition of expected knowledge. (This is for the sake of uniformity, as students may take the supporting courses at different campuses, with different instructors and/or different texts.)

Samples of exams given in previous years are available from the department.
Algorithms and Theory of Computation (3 hours)


Algorithms

Reading List: Cormen, Leiserson, and Rivest, *Introduction to Algorithms*, McGraw-Hill, Topics I–VI (pp. 1–629) and Chapter 36 from Topic VII (pp. 916–963).

Faculty Contact: Prof. T. Suel, room LC231, e-mail: suel@photon.poly.edu, tel.: 718-260-3354.

Theory


Faculty Contact: Prof. L. Hellerstein, room LC234, e-mail: hstein@duke.poly.edu, tel.: 718-260-3689.
Architecture and Operating Systems (3 hours)

The exam consists of basic material from both topics plus a choice of advanced material from either architecture or operating systems.

Please be advised that the reading list for this exam may be changed for the 2002 exams.


OR

http://www.cs.engr.uky.edu/~raphael/ or http://naxos.poly.edu/~ad/Vade.PS.


Faculty Contact: Prof. A. Delis, room LC217, e-mail: ad@naxos.poly.edu, tel.: 718-260-3313.
AND
Prof. R. Flynn, room WC5, e-mail: flynn@west.poly.edu, tel.: 718-260-2003.


AND

Faculty Contact: Prof. N. Memon, room LC116, e-mail: memon@poly.edu, tel.: 718-260-3970.
Programming Languages, Compilers, Artificial Intelligence, Software Engineering, and Databases (3 hours)

The exam consists of five parts. All student must answer the Programming Languages part and choose TWO of the remaining four parts.


Programming Languages

Faculty Contact: Prof. P. Frankl, room LC237, e-mail: phyllis@morph.poly.edu, tel.: 718-260-3870

Compilers

Faculty Contact: Prof. B. Aronov, room LC236, e-mail: aronov@ziggy.poly.edu, tel.: 718-260-3092.

Artificial Intelligence
Reading List: Primary textbook:
Supplementary textbooks:
Chapters 4 and 5 of the above book supplement Chapters 7 and 9 of Russell and Norving’s book.
Students can study Rich and Knight’s book instead of the primary textbook, but the primary textbook is preferred since it gives a better explanation of the material.

Faculty Contact: Prof. E. Wong, room LC217, e-mail: wong@poly.edu, tel.: 718-260-3523.
**Software Engineering**


OR


**Faculty Contact:** Prof. G. Naumovich, room LC228, e-mail: gleb@poly.edu, tel.: 718-260-3554.

**Databases**


**Faculty Contact:** Prof. A. Delis, room LC217, e-mail: ad@naxos.poly.edu, tel.: 718-260-3313.