Area Examination Procedure in Area II (Old Program)*

Professor Nancy Lynch, Area II Chair

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The "Area Examination" is a combined written and oral examination scheduled and evaluated by the Area II Committee. The purpose of this examination is to test students' ability to acquire knowledge from, analyze, and evaluate the research literature in their field. The first part of the Area Examination is centered around a small number—at most three—of advanced research papers on some topic of research interest to the student. The second part involves general questioning in the student's area.

Students should apply for the examination at the beginning of the term in which the examination is to take place, usually the sixth or seventh semester of graduate study. Application forms are available in the EECS Graduate Office (38-444), Area II Secretary's office (NE43-366) or ftp://theory.lcs.mit.edu/pub/areaii/. Applications are due in the Area II Secretary's office on Registration Day of the term in which the exam is to be taken. Contact joanne@theory.lcs.mit.edu if you need more information.

The Area II Committee appoints the examining committee. It consists of three faculty members, at least two from the Department of Electrical Engineering and Computer Science. When filling out the application form, students should list several faculty members whom they would like to have on the examining committee. If possible, the Area II Committee will assign at least one person from this list.

The student also suggests on the application form three or more research topics for papers to be presented at the exam. These topics should be chosen from the student's research interests, but should not relate directly to his or her thesis topic. If there are regular graduate courses in these topics offered in the department, the student is expected to have taken those courses. The examining committee selects papers on one of these topics after consultation with the student. Papers authored by members of the examining committee should not be selected.

The examining committee assigns the research papers one month before the date of the oral part of the Area Examination. The student is usually also given a specific question to address. The student should read the papers and review other background material—typically several other research papers—that help to put the assigned papers in context.

*Old program applies to students in the EECS Graduate program before September 1999.

The student may care to consult with researchers already familiar with the papers; such consultation should be cleared *in advance* with the examining committee chair, and appropriate acknowledgements should be included in the student's written report. Any other questions the student has about the exam should also be directed to the committee chair.

The student should submit a ten to fifteen page written report to the Exam Committee at least one week before the oral examination. This report should explain the important ideas of the papers, describe their significance to the research area, and describe the relationships among the ideas in the different papers. The report should not be merely a restatement of the material in the papers. The student is encouraged to criticize, make improvements, and suggest alternatives to the approaches described in the papers.

The oral part of the Area Examination begins with an oral presentation by the student of the written report. The presentation should be at most thirty minutes long, not counting time for questions by the Exam Committee. Although the prepared oral presentation is at most half an hour, the questions and ensuing discussion often double the time for this part of the exam. The talk is generally followed by more questioning based on the written document.

After a brief break, the examination continues with general questioning in the student's research field. To be prepared for this part of the exam, students are expected to have taken a selection of advanced courses in their area. Laboratory work or other outside experience can substitute for course work.

After the general questioning, the student is asked to leave the room while the committee discusses the exam. The examining committee will then inform the student of its planned recommendation to the Area II Committee. After the exam, the examining committee chair writes a report and recommendation to the Area II Committee. The Area II Committee, rather than the examining committee, makes the final decision on fulfillment of the Area Examination requirement, based solely on the student's performance on the exam. The Area II Committee then notifies the student of its decision and provides the student with a copy of the examining committee report. The Committee also reports its decision to the Committee on Graduate Students.

The Area II Committee also takes this opportunity to review the student's overall performance in the graduate program, considering in particular, the Area Examination Committee reports, the research supervisor's report, and completion of the graduate core requirement.

Passing this exam constitutes completion of MIT's General Examination requirement. (See also *Memorandum to Graduate Students on the Doctoral Program in Electrical Engineering*, EECS Memo 3800old.)