

# GENERAL INSTRUCTIONS/PROCEDURES FOR PREPARATION AND TAKING QUALIFYING AND MASTERS PLAN II EXAMINATIONS IN THE GRADUATE GROUP IN ECOLOGY

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November 2003; July 2004; December 2009

## **Introduction**

These are the current guidelines to be used to prepare for the oral Examinations in the Graduate Group in Ecology. These rules and procedures were developed by an *ad hoc* subcommittee on examinations in Ecology, chaired by Michael Barbour, in 1988-89, and have been amended by subsequent Executive Committees. They cover the philosophy of the Examination, preparation for the Examination, the selection of committee members and topics to be covered in the Examination: this guideline summary includes all the things both faculty and students need to know to prepare for the Examination. There has been much concern about variation from exam to exam, and these guidelines are an attempt to set reasonable standards for examinations group-wide.

## **Purpose of the Oral Examination**

*The objective of the MS Examination is to evaluate the student's mastery of breadth and depth in a range of subject areas related to ecology. This level of knowledge must be sufficient to demonstrate competency for professional work.*

*The primary objective of the PhD Qualifying Examination is to evaluate the student's ability to think independently, creatively, and critically, and to evaluate the student's mastery of breadth and depth in a range of subject areas in and related to ecology, including the ability to synthesize broad concepts and detailed information. This level of knowledge must be sufficient to demonstrate competency for professional work.*

For simplicity, the MS Examination and the PhD QE are referred to simply as the Examination throughout the rest of this document.

## **Preparation for the Examination**

Preparation for the MS Plan II final oral Examination and PhD Examination is a very important step toward dissertation research and professional life following graduation. The preparation phase should be an opportunity for students to critically review, reflect upon, and evaluate their fundamental understanding of ecology and of related/sub-disciplinary fields they have chosen to emphasize. For most MS Plan II students, this means the accumulation of knowledge in the subjects in ecology they have chosen or in an area of emphasis, and the development of skills in critical thinking.

For PhD students, it usually involves some development of dissertation research prior to the Examination.

Since the Examination is comprehensive in nature, students are well-advised to begin with a curriculum that has been developed thoughtfully with long-term career objectives in mind. Students are encouraged to develop the plan not only with their Major Professor, but also with the other members of their Guidance Committee (GC) (which may include key members of the dissertation and examination committees).

Examiners are expected to help in this preparation phase by meeting with the student to focus and guide them to appropriate literature and significant questions. It is the student's responsibility to initiate the request to meet with committee members. Furthermore, students should seek the advice and use the experience of students who have already taken the oral Examination.

### **Normative Time to the Examination**

The Graduate Group in Ecology requires students to take their MS or PhD Examination no later than their 7th quarter of residence following admission to the program (ignoring summer sessions and periods of leave). *Students who have not taken the appropriate examination by the end of their 7th quarter of residence shall be formally notified that they are delinquent in this regard and that progress toward the degree is unsatisfactory.* A copy of the notice will be sent to the Major Professor and the Office of Graduate Studies. Unsatisfactory progress will result in a "hold" being placed on the student's registration by the Registrar and suspension of employment with the University until the examination is completed.

### **Student Qualifications for the Examination**

In general, planning for the Examination should start with the first meeting of the GC. It is important that care be taken to plan the curriculum with the future Examination in mind.

#### **MS Plan II:**

MS Plan II students must first Advance to Candidacy before they are allowed to take the examination. An MS Plan II student may Advance to Candidacy when approximately one half of the coursework has been completed, and at least one quarter before completion of all degree requirements. The student must have an overall GPA of 3.0 or greater at examination time. MS candidates complete the Advancement to Candidacy petition and submit it to the GGE office. The petition need not be signed by your Major Professor, nor is designation of your MS Examination Committee required by the Office of Graduate Studies. However, the GGE office will need to know the composition of your Examination Committee for your record. Forms, transcripts and other materials will be sent to the Chair of your Examination Committee once you notify the GGE office the date has been set for your Examination. The Chair of the Examination Committee is always the Major Professor.

## PhD:

PhD students start the process by requesting a second **meeting** (the first meeting having taken place during the first quarter of residence to establish course work requirements) with the GC to complete the Pre-Qualifying Examination Evaluation (obtained from the GGE office). It is highly recommended that you do this as early as possible, at least one quarter prior to the quarter the student wishes to take the Examination. **It is also strongly recommended that the GC NOT complete this evaluation via e-mail or by the student meeting individually with each member; it is much better to meet as a group.** Please remember that you must first complete all of your coursework to be eligible to take the QE (please refer to the Guide to Matriculation to Advancement to Candidacy). Once completed, you can turn in your form to the GGE office for evaluation and processing. The date of the exam may be set prior to approval of the QE. Forms, copies of transcripts, and other materials will be sent to the Chair of your Examination Committee once the GGE office has been notified by Graduate Studies that the composition of your Examination Committee has been approved.

Should your Examination Committee members change, a "Reconstitution" request must be approved by the GGE Adviser and submitted for approval to the Office of Graduate Studies prior to the Examination. If it becomes necessary for you to change the date of your Examination, please notify the GGE office so that your record can be updated.

## General Instructions/Procedures for PhD Qualifying Examination Process

- The student will meet with each member of the examination committee before the examination date to discuss and review the QE guidelines and the expectations for the exam, as well as meet with the examiners 3 months or more prior to the examination date to obtain a list of appropriate literature. Prior to the Qualifying Examination (QE), and no later than 60 days prior to the examination date, the Chair of the QE Committee will send a written copy of the GGE qualifying examination guidelines to each member of the Committee.
- PhD Students will be required to prepare a written Research proposal prior to the QE. Please refer to the section on "Written Research Proposal - page 7
- During the QE, the student will present a 15 minute summary of the proposal, and the committee will ask questions relative to the proposal before moving to the more general qualifying examination topics. The total time spent specifically on the proposal during the qualifying examination should not exceed 45 minutes (from the start of the student oral presentation).
- Within 6 months after passing the QE, the student will submit to the GGE office a formal dissertation proposal signed as approved by each member of the dissertation committee.

### **Time Required for Setting Up an Examination = 60 days**

The GGE QE petition to approve the proposed Examination Committee, for both the MS and PhD, needs to be submitted to the GGE office at least **60 days** prior to the anticipated date of the Examination. A coursework audit will be completed at the time of filing the petition to the GGE Office. All GC required coursework must be completed prior to filing the petition. The final Examination date may not be set until the Dean of Graduate Studies has approved the committee.

*Membership of the Examination Committee is a shared responsibility of the GC, the student, and the Chair of the GGE.*

### **Duties of the Student and Chair in Setting up the Exam**

Once the QE petition has been approved by the Office of Graduate Studies (OGS), the student may proceed to finalize the Examination date, which must be included in the GGE QE petition. The date will be finalized when OGS approves the Examination petition.

It is the student's responsibility to find an Examination date and time suitable for everyone, reserve a room, and send a notice of the Examinations location, date, and time to all participants. As mentioned before, the student will meet with each member of the Examination Committee to discuss and review the GGE guidelines for the QE (which will previously have been sent to each committee member by the Chair of the QE Committee) and the expectations for the exam. The GGE staff will provide necessary materials; however, it is the Committee Chair's responsibility to request appropriate student records to have on hand during the Examination. The QE Chair will also monitor the time spent on the research proposal, making sure the 45 minute timeframe is observed.

### **Composition of the Five Member Examination Committee**

- The Examination Chair must be a member of the GGE. Only one member of the Examination can be a non GGE faculty member, or a non Academic Senate member. A non Academic Senate GGE member is exempt from this restriction.
- PhD students - the student's major professor cannot serve on the Examination Committee.
- MS students - the student's Major Professor is expected to serve on the MS Examination, and also serve as Chair.
- SDSU/JDPE students - are required to include at least two examiners from the SDSU campus and two from the UC Davis campus.
- SDSU/JDPE students may not invite their UC Davis host/mentor to serve on the QE.

**Nominees who are not members of the Graduate Group in Ecology will be subject to approval, on a case-by-case basis, by the GGE Chair and the Dean of**

**Graduate Studies.** In the event that an examiner who is not a UC faculty member is chosen, a Graduate Studies External Committee Member Nomination form and CV will have to be provided along with your petition to take the QE explaining the selection. The form may be printed from the Graduate Studies website.

### **The Written Examination Component in The Principles of Ecology (POE)**

The “POE” section of the examination is required, and is understood to be a core of essential ecological theory and knowledge, recognized by both faculty and students. As a part of ECL 200 A/B at UCD and BIO 645/745 at SDSU, students will take a final examination in each course. A committee of GGE faculty will review the examinations to determine if the student has passed at either the MS or PhD level. An MS student wishing to petition to advance to the PhD degree objective must pass at the PhD level to be considered for the PhD program. Students must achieve an A or B average or better in the final exam from both courses, and also pass each course. Students who do not pass the final examination at a satisfactory level will be required to retake the examination. The ECL 200A/B, and BIO 645/745 finals will be placed in the student’s GGE permanent file and will be provided to the Examination Committee.

Students passing this topic will be required to invite 5 examiners despite having passed the POE. The student may wish to invite the Examination Chair to serve as the “POE” examiner, but any committee member may perform the task of Examination Chair. The POE examiner will not question the student on the POE, but may ask questions relevant to the student’s dissertation proposal.

### **Research Methods and Quantitative Skills Examination Topic**

The “Methods” examination area is required, and shall focus on quantitative techniques appropriate to the major area of emphasis chosen by the student. Thus, the range of techniques and analyses is potentially very broad. Please remember that Research Methods and Quantitative Skills is not merely equivalent to Statistics.

**Important Note for students: external, non UCD or non GGE faculty members, will not be allowed to serve as an examiner for this topic.**

### **Selection of the Optional Examination Topics**

*The three Examination topics should be as broad and non-overlapping as possible. (See table below.)* Students are advised that narrowly defined topics and areas with substantial overlap will not be approved. The selection of optional examination topics are identical for both the MS and PhD exams, the only difference being the number of areas/examiners. “Principles of Ecology” and “Research Methods and Quantitative

Skills” are mandatory for both MS and PhD Examinations held by the Graduate Group in Ecology. In addition to the two mandatory topics, MS Plan II candidates must choose one additional examination topic and PhD candidates three. The topics should be based on the first GC report, and supported by appropriate course work as specified on the GC report.

Examiners for each examination topic are nominated by the student, with guidance from the GC, and examiners should have recognized expertise in that area of the Examination. Final approval of examination topics rests with the chair of the Graduate Group in Ecology and the Dean of Graduate Studies.

The Examination is closed to visitors, except by permission of the chair of the examining committee.

**Structure of the Examination: Sample optional examination topics**

The substance of the following table was originally approved by the Executive Committee in 1986 and is being re-introduced effective fall 2004. The operational part of the table is contained in the labels “basic ecology”, “applied ecology”, and “departmental or group PhD programs”. The areas listed are examples and the lists are not meant to be exhaustive. Students are not required to choose one from each section, this is merely a guide to suggest examples.

**Group A: Basic Ecology**

Behavioral Ecology	Allelochemics	Evaluation of environmental
Community Ecology	Biometeorology	policy
Ecosystem Ecology	Ecosystem analysis	Implementation of
Physiological Ecology	Transport phenomena	Environmental policy
	Human population ecology	Population ecology

**Group B: Applied Ecology**

Agroecology	Pollution ecology	Epidemiology
Aquaculture and fisheries	Environmental policy in	Conservation ecology
Aquatic ecology	specific areas: e.g.,	Ecotoxicology
	conservation or energy	Resource management

**Group C: Subjects in which major universities might have departmental or group PhD programs, such as but not limited to:**

Genetics	Geology	Economics
Botany	Mathematics	Anthropology
Soil Science	Biochemistry	Sociology
Entomology	Atmospheric Science	Political Science
Bacteriology	Physical Oceanography	Invertebrate Zoology

**Written Research Proposal - PhD students only**

*Every PhD Examination candidate will be required to submit a written "Research Proposal" to the members of the Examination Committee no later than 14 days prior to the Examination date. Students will be requested to prepare a written proposal prior to the Examination. The proposal will be 5-20 pages (double spaced) in length not to exceed 4,000 to 5,000 words, one inch margins, 12 point font, and will include a reasonable literature review on the proposed research topic (importance, previous work, current critical questions).*

Although a written research proposal is discussed in the exam, under no circumstances is the outcome of the qualifying examination to be determined strictly by the quality of the candidate's dissertation research or research proposal. According to Graduate Council guidelines, the qualifying examination is not a dissertation defense.

The proposal prepared and presented does not have to be a completely defined research proposal, and does not have to be exactly on the actual dissertation topic. The proposal should, however, include a reasonable research design that will allow the testing of hypotheses of importance relative to the literature review portion of the written proposal. The examiners will use this document to help them determine the student's ability to recognize worthwhile problems, assess current research, and formulate appropriate methods and plans of action. The written document may be addressed during the Examination by any examiner, but the research should not be the major focus of the Examination. This phase of the Examination is not intended to supplant or infringe upon any of the traditional functions of a Dissertation Committee. Its only function is to assist the examiners in their appraisal of the students' ability to reason and to assess his/her readiness to accomplish ecological research at the PhD level.

## **Standards of Performance and Evaluation**

The Examination Committee is expected to determine the quality of the performance of the candidate on all parts of the examination, and not solely for the section covered by individual examiners. Graduate Council has stipulated that, on the first attempt, the performance of any candidate irrespective of degree objective can be evaluated as: 1) pass; 2) no pass; or, 3) fail.

The performance required for a 'pass' for the MS is the unanimous consent of the entire committee that the student has passed. For the PhD, opinion may be divided, which requires the filing of both majority and minority reports. In either case, the applicable criteria are those covered under 'purpose' in this document.

"No pass" is specified when the committee in charge does not feel that the candidate's performance meets the standard for the field. For MS degrees, a "no pass" decision requires the approval of the Graduate Adviser for a retake. For the PhD, either

the entire Examination or sections may be reported as a “no pass”. Retaking the Examination may be subject to conditions specified by the committee, including course work, paper preparation, or additional research. The deadline by which these requirements must be completed should be established at the time of the Examination and reported to Graduate Studies by the Examination chair.

Evaluation as a “fail” means that the student will be disqualified from further graduate study in the program. The student has the right to appeal the decision.

Students taking the MS or PhD Examination a second time have only the pass and fail options.

July 19, 2011

## Guidelines/Instructions for the Chair of the Qualifying Examination Graduate Group in Ecology

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- The objective of the **MS Examination** is to evaluate the student's mastery of breadth and depth in a range of subject areas related to ecology.
  - The primary objective of the Ph.D. QE is to evaluate the student's ability to think independently, creatively, critically, and to evaluate the student's mastery of breadth and depth in a range of subject areas in and related to ecology, including the ability to synthesize broad concepts and detailed information.
  - Although a research proposal is presented, the examination is not a dissertation proposal defense. The outcome is not based on the quality of the proposal.
  - It is understood that the research proposal may be a “work in progress” and may not represent the project that the student will actually pursue in their dissertation research.
  - The first priority for the student and the Examination Committee members is to read the *“Guidelines for Preparation and Taking Qualifying and Master’s Plan II Examinations in the Graduate Group in Ecology”*.
  - The student will submit the petition to take the QE no later than 60 days prior to the desired Examination date. Should the Examination date change, the student will notify the GGE of the new date. It is not necessary that the Office of Graduate Studies be notified of the date change.
  - Students must meet with each committee member to discuss the GGE guidelines and topics, and the potential scope of questioning expected during the Examination.
  - The Chair will discuss the Examination format with the student, prior to the exam.
  - The Chair will monitor the length of the Examination, generally not to exceed three hours.
  - The Chair will ensure that Examination Committee members have equal opportunity to examine the student.
  - The Chair will provide de-briefing to the student following the Examination on their performance on the Examination and aspects of their research proposal.
  - The Chair should encourage the student to contact each committee member for further discussion of any comments that the committee members may have had regarding his/her research proposal.