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Department of Biological Sciences

PhD Manual for Graduate Students

Updated 07/29/2024

A GUIDE FOR PhD GRADUATE STUDENTS IN THE DEPARTMENT OF BIOLOGICAL SCIENCES PURDUE UNIVERSITY

Department of Biological Sciences
Purdue University

FOREWORD

The Department of Biological Sciences welcomes you! We hope that you will have a great educational and professional experience during your graduate studies here at Purdue. The Office of Graduate and Advanced Studies provides service to our graduate students from admission to graduation. This manual outlines the normal sequence of events leading to your advanced degree and should serve as your program-specific guide in addition to the regulations provided by the Graduate School.

Each PhD student is expected to satisfy the various program requirements outlined in this manual. Whereas the Graduate Office will provide timely reminders, it remains your responsibility to meet the requirements by the established deadlines. Failure to meet deadlines could prevent you from registering for the subsequent semester, resulting in late registration fees and delays in receiving financial support. The scheduling of annual Advisory Committee Conferences including Preliminary Exams and Thesis Defenses is also your responsibility. We encourage students to schedule these important meetings with their committee well in advance.

Exceptions to the normal sequence of events may be requested by writing to the Convener of the Graduate and Advanced Studies Committee. Any request should detail a justification for the exception and be approved, in advance, by the student's Advisory Committee.

We wish you great success with your thesis research and graduate studies in our program!

Chair of the Graduate Program

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PhD Time-Line
For Meeting Degree Requirements

	Deadline	**Forms**	**Required courses**
1st Fall Semester	Non-RAs start lab rotations 2nd week of semester RA's submit 1st year IDP Form by end of October	Area Required Course Form	BIOL 662 Dept. & Area
1st Spring Semester	Mid - April Submit list of lab choices		BIOL 663 Dept. & Area
2nd Fall Semester	Non-RA's submit 1st year IDP Form by end of October RA's submit 2nd year IDP Form by end of October		Dept. & Area
2nd Spring Semester	1) File Draft EPOS by 2nd week February 2) Submit Final EPOS by 2nd week of March	**Hold Prelim before end of semester**	Dept. & Area Required Courses **Fulfilled**
Yearly until Completion	Research Conference	IDP Form by end of October	
Degree - Completion	Expected - 5 years	Final Exam / Deposit	

NOTE: Completion of PhD should occur in a maximum of seven years. If you are an international student and need to extend the I-20, send an email to cospayroll@purdue.edu. Label the subject line: BIO/Grad I-20 extension letter/your name. Then in your email provide the information and what you are seeking.

If you are unable to meet the normal sequence and timeline of events, please check with the Graduate and Advanced Studies Office or the Convener of the Committee on Graduate and Advanced Studies to be certain it will not create a problem in meeting your next requirement(s).

EPOS = **E**lectronic **P**lan **O**f **S**tudy Updated: 07/29/24

PhD Degree Objective

General Requirements

1. **Grades and index requirement**

   Only grades of B- or better are acceptable for courses on an electronic plan of study (EPOS).

   The student is expected to maintain a grade point average (GPA) of 3.0. All courses for which grades are given will be used in computing the GPA.

   A maximum of 2 Cs are allowed. Courses with a C grade or lower need to be re-taken within one year of the date the course was first taken. A student who receives a C in a course in the second year will need to get a B- or better in that course within one year of receiving the C grade. If a course is no longer offered, a request for an alternate course is proposed to the GASC for approval.

   Students with 3 Cs or lower will not be allowed to retake the courses and will be considered as not meeting the minimum expectation of the program. A student who fails to perform at a satisfactory level may be required to discontinue graduate study at Purdue.
   Credits awarded for a prior degree can be used toward the PhD, with the exception of 500-level courses taken toward the fulfillment of the Bachelor's degree. Students should notify the Chair of the Graduate program by email. They then should enter the prior coursework onto their EPOS, along with the date of the email thread.

2. **Credit hours**

   If you started before Fall 2016:
   Two BIOL seminars (1 credit hour / each) is the only Department credit hour requirement on an EPOS. However, most PhD students take an average of 21+ credit hours.

   If you started Fall 2016 or after:
   New Graduate Curriculum requires a minimum of 16 credit hours. However, most PhD students take an average of 21+ credit hours.

3. **Time limitation**

   Seven (7) years from entry into the graduate program (i.e., 14 semesters plus the intervening summers – plus one additional summer to finish if necessary) is the maximum time allowed to complete the PhD in the College of Science.

   Each student should be aware that, after five years of graduate study in this department, he or she will be given low priority in the assignment of departmental funds for his or her support during subsequent semesters of graduate study.

   An additional year may be allowed if requested by the student's Thesis Committee and approved by the Department's Graduate and Advanced Studies Committee (GASC)

Please be aware that failure to meet any deadlines will result in non-approval of registration for subsequent sessions (see FOREWORD).

4. Residence Requirement

Six units of residence are required for the PhD (90 credit hours beyond the baccalaureate degree. At least four units (60 credit hours) for the PhD degree must be earned by continuous residence on the Purdue campus where the degree is to be authorized)

A master's degree or professional doctoral degree from any accredited institution may be considered to contribute up to 30 credit hours toward satisfying this requirement at the discretion of the student's graduate program.

BIOL 69800 (Master Research) does not count toward the 90 credit hours required for PhD

PhD research hours can be between 1-18.

5. Teaching requirement

Students are required to teach for one semester in direct contact with students unless the student has post-baccalaureate teaching experience at the college level. If post-baccalaureate teaching experience – the student must provide official proof in the form of official letter/memo from supervisor of location the teaching occurred.

All students teaching courses in the Department of Biological Sciences must enroll in BIOL 69500PD, *Teaching Assistant Professional Development*. This is a one-credit course devoted to supporting teaching assistants during their first semester of teaching.

All students whose native language is not English must take the OEPT. The Oral English Proficiency Test (OEPT) is a computer-based test used by the OEPP to screen prospective teaching assistants for language proficiency. Candidates respond to a variety of questions, present information, and speak extemporaneously on various topics. The responses are recorded and evaluated by at least two trained raters. A score of 50 or higher is required for certification.

If a student does not meet the required score for certification by OEPT (at least 50), the preferred option for those who score 45 or 40 is to be enrolled in **ENGL 62000, Classroom Communication for International Teaching Assistants.** Students who complete this course consistently report improvements in their English communication skills that positively affect their work as teaching assistants, their graduate studies, and their professional development.

Students who score 45 on the OEPT may retest after 6 months, if they feel they can improve their score. Only departmental liaisons can request a retest; the OEPP does not accept retest requests from students.

Students who score 40 on the OEPT may be enrolled in ENGL 620 at the request of their department. Those who are not enrolled in ENGL 620 may retake the OEPT after one year if they feel they can improve their score.

Students who score 35 on the OEPT may retest after one year if they feel they can improve their score. They are not eligible to enroll in ENGL 620 – a score of at least 40 on the OEPT is required. Students may not be registered for both the OEPT and the ENGL 620 course concurrently.

Students who took ENGL 620 and were not certified at the end of the semester should take the course again to be certified. Students may not retake the OEPT test once they have taken the ENGL 620 course.

If the student does not pass the OEPT and will be a Teaching Assistant that semester, the student will need to register for the ENG 62000 course. Students can TA while being enrolled in the course

Students who do not have an acceptable score prior to taking their Preliminary Exam will be asked to leave the PhD program. They will have the option of leaving immediately with no degree or taking one additional semester to complete a Non-Thesis MS degree.

6. Rotation Requirements

All PhD students who hold either a Teaching Assistantship or Fellowship must rotate in 3-4 labs during their first year of graduate studies in the Department of Biological Sciences. These rotations can only be in labs in the Department of Biological Sciences. For more information, see below under Basic Steps.

7. Seminar Requirement

Admit year ≤ 2015
Each PhD student is required to take two graduate-level seminar courses (BIOL 69600/69500 Department approved seminar course).

Admit year ≥ 2016
Each PhD student is required to take one graduate-level seminar course according to the required course listing for the specific research area.
https://www.bio.purdue.edu/Academic/graduate/phd/current_phd.html

PhD Degree Objective

Basic Steps

1. PhD required courses within the Graduate Curriculum

Students who entered the program in the Fall 2016 or after must complete the new course requirements as outlined in Supplement 1.

For each research area, the required courses can be viewed here
https://www.bio.purdue.edu/Academic/graduate/phd/current_phd.html

2. Rotations

All PhD students, who hold either a Teaching Assistantship or Fellowship will rotate in 3-4 labs during their first year of graduate studies in the Department of Biological Sciences. These rotations can only be in labs that are in the Department of Biological Sciences. At the conclusion of the rotation, the faculty will provide feedback to the student on the student's likely "fit" for that lab. The discussion to join the lab can be initiated by either party at this time.

PhD students are allowed to rotate in the same lab twice – although this is not encouraged. Joining a lab is not solely based on an agreement between the student and professor, but needs to be approved by the Chair of the Graduate Program.

Students need to fill out a Lab Placement form, also signed by the faculty member confirming the decision. At the end of the 2nd semester the lab assignments will be processed by the Graduate Office. If a student wants to join a lab after 2 rotations, the student will need to submit a request to the BIOL Graduate Office before the end of the first semester.

3. Select the Major Professor/Research Director/PI

If a research director cannot be found after 4 rotations, the student will need to meet with the Chair of the Graduate Program to discuss other options such as additional summer rotations. It should be noted that student funding before a student has a permanent lab only lasts up to one year. If a student is unable to find a permanent lab by the end of the first year, they are unlikely to do so. Funding is thereby terminated.

To be clear about the terminology, "Major Professor" refers to the same faculty as "Research Director" or "Principal Investigator (PI)". This is the faculty, which mentors the PhD student. The Graduate School uses the term "Chair" for the "Major Professor" for the purpose of the Plan of Study. Please note that the student's Major Professor is not the Chair of their Thesis Advisory Committee.

4. Select a Thesis Advisory Committee

The Thesis Advisory Committee consists of the Major Professor/Research Director, two additional faculty members of the Department of Biological Sciences and one faculty who is not in the Department of Biological Sciences. This external faculty member is typically from another Department at Purdue University but can also be a faculty at another institution. Thus, the Thesis Advisory Committee needs to have at least 4 members, one of them being from outside the Department of Biological Sciences.

If the external committee member is not at Purdue and not yet in the Purdue Graduate Faculty Database, the student needs to inform the Graduate Coordinator, so that the Coordinator can gather the required information from the external faculty to be added to the Purdue Graduate Faculty Database.

The student submits a request for the appointment of this committee to the Committee on Graduate and Advanced Studies using the corresponding PhD "Advisory Selection Form" found here.
https://www.bio.purdue.edu/Academic/graduate/phd/current_phd.html

The Thesis Advisory Committee also acts as the Examining Committee. In this capacity, a member other than the Major Professor acts as Chair of the committee. The Chair of the Thesis Advisory/Examining Committee is also called the "Principal Examiner" within the Biological Sciences Graduate Program to avoid confusion with the Graduate School's definition of the Chair of the Plan of Study, which is the Major Professor/Research Director.

The Principal Examiner (Chair of the Thesis Advisory/Examining Committee) should ideally not be a new Assistant Professor but a faculty with a few years of experience. The Principal Examiner should be determined by the Major Professor in discussion with the PhD student. Once the Principal Examiner has agreed to serve in this function, the Major Professor informs the Graduate Office who is the Principal Examiner. The Principal Examiner presides over the preliminary examination, all annual research conferences, and will be primarily responsible for the format of these meetings and for filing the written comments from the Examining Committee members.

To submit the information about the Advisory Committee to the Graduate School, the student completes Form 8 "Request for Appointment of Examining Committee" in MyPurdue.

The Major Professor – PhD student relationship must be a mutually acceptable one. The Major Professor will direct the student's research.

5. File PhD Electronic Plan of Study (EPOS)

Please review the number of credit hours in Supplement 1.

Courses **not** to be included on a EPOS are:
Research credits (BIOL 69900)
Courses taken on pass/not pass option cannot be used on a plan of study.

MS credit will be accepted only after one semester of satisfactory work at Purdue. The research director must indicate the number of credits (0 to 30) that are to apply to the doctoral degree program when they are approving/signing the plan of study. Courses taken as a graduate student at one other university only may be used if they have been used towards only one other advanced degree.

Courses taken as an undergraduate may be used if the course was: 1) designated for graduate students; 2) taken during the student's junior or senior year; 3) a grade of B or better was received.

NO EPOS = NO PRELIM

To make minor changes in an EPOS, the student needs to submit a *Request for Change to the Plan of Study* electronically, through *my*Purdue. Changes to remove a failed course will not be approved. If the composition of the Advisory/Examining Committee requires changes, the student must also submit a *Request for Change to the Plan of Study* electronically through *my*Purdue.

6. Grade Appeals

For grade appeals, please refer to the 2024-2025 University Catalog, Policies and Procedures for Administering Graduate Degree Programs, Section VI: General Academic Requirements and Grade Appeals Part E: Overview of Grade Appeals Committee and Process. The on-line reference manual for students, staff and faculty at

https://catalog.purdue.edu/content.php?catoid=17&navoid=21844&hl=%22grade+appeals%22&returnto=search#vi-general-academic-requirements-grade-appeals

7. Individual Development Plan (IDP)

After joining a lab, the student will complete in discussion with their Major Professor, an Individual Development Plan (IDP) each year. These IDPs are training tools to help the student assess progress and succeed in the program. Forms can be found at https://www.science.purdue.edu/graduate/idp.html
The last page of the IDP, signed by both PhD student and Major Professor, needs to be submitted to the Graduate Office by the end of October. Lack of IDP submission will result in not being allowed to register for the following semester/term.

8. Preliminary Examination.

Preliminary Examination occurs six (6) months after selection of Advisory/Examining Committee but **no later than May of second year.** This deadline is crucial for maintaining the timely progression of graduate studies, ensuring the orderly administration of the program, and accommodating faculty availability before their summer commitments to research, meetings, and travel. Failing to meet this deadline disrupts these objectives and raises concerns regarding a student's preparedness for advanced

academic work. Individuals unable to schedule the preliminary Exam by May of their second year will need to meet for consultation with the program Chair, Dr. Don Ready.

The Examining Committee for the prelim exam will consist of all members of the Advisory/Examining Committee except the Major Professor (EPOS-Chair), who will not be present during the exam. The "Chair" of the Preliminary Exam is typically the Principal Examiner (Chair of the Thesis Advisory/Examining Committee). The replacement of the Major Professor on the examining committee will be selected by the Major Professor and needs to be a faculty member of Biological Sciences. The student needs to update the composition of Examining Committee using Form 8 in myPurdue 4 weeks before the examination. The Major Professor can request a recording of the Preliminary Examination, which should only include the portion of the exam in which the student was participating but not any discussion by the committee before and after the exam.

The student should consult with the Principal Examiner (Chair of the Thesis Advisory/Examining Committee) at least **2 months before** the preliminary examination to determine what will be expected.

The Principal Examiner will preside at the Preliminary Examination and will be primarily responsible for the format of the meeting and for filing the written comments from the committee members to the GASC and Graduate School. The Principal Examiner should establish, in advance, guidelines for the length and nature of the student's presentation, the length and scope of the question and answer period, and any other procedures he or she feels should be specified. Hence, prior to each meeting, the student should discuss the format for the meeting with the Principal Examiner.

The main goals of the Preliminary Examination are to test the PhD candidate's ability to defend a research project and demonstrate independent thinking. The student can choose the thesis research project or another project as the topic for the examination. The student should submit the written report at least 3 weeks before the Preliminary Examination to the whole committee. The report must include a brief description of the proposed thesis research project including a literature review relevant to that project in the background section. In the report the student must clearly outline the objectives of the proposed research and indicate how they plan to achieve them. The literature review does not need to be exhaustive, but must show that the student is aware of the most important papers in the field – especially current papers – and how they relate to the proposed research. If the student's research director so desires, a student will be allowed to submit an original research proposal in an area related to his or her research instead of a proposed thesis research project. In such a case, the research director will have sole responsibility for approving the subject of the proposal. However, the related proposal should not include problems that are being studied in the research director's laboratory. It should be sufficiently related to the student's own project that a similar degree of sophistication can be expected in both areas; a successful defense of this proposal should establish that the student is reasonably equipped to proceed in a scientific manner with his or her own research project. If the committee determines that the written document has enough flaws indicating that the student is likely to fail the oral exam, the committee can request a rescheduling of the exam and revision of the proposal.

Please see Supplement 2 for more information about the written proposal.

During the preliminary examination, the examining committee will determine by means of a Question and Answer period whether or not the student is reasonably equipped to proceed in a scientific manner with the proposed thesis research. Questions on subjects directly or closely related to the research proposal should have priority. These might include questions about current literature, research techniques, collection and evaluation of data, and formal coursework.

The committee members will cast on paper ballot a vote of "pass" or "fail" at the conclusion of the question period. A passing performance will be one in which no more than one member of the committee casts a vote of "fail". If the student fails to achieve a passing performance, the committee will decide whether to schedule a second examination or to recommend that the student leave the program.

If a second exam is approved, it should be held during the next semester.

If the student fails to achieve a passing grade in the second preliminary exam attempt, the student will be dismissed from the PhD program. The student will be allowed to participate in the Master's program. To transition out of the PhD and into the MS program, the student must complete and submit Form 17B to the Graduate Coordinator.

After making their written evaluation, including their comments and their votes for pass or fail, the committee members will discuss with the student both their evaluation of the student and their appraisal of the plan of study. The evaluation should detail areas of weakness and expectations for remedies. If necessary, amendments to the plan of study should be recommended. Any questions about procedures should be directed to the Graduate Office.

Upon successful completion of the preliminary examination, a student will be required to meet at least annually with their advisory committee.

9. Annual Research Conferences (RC)

The principal examiner will preside at the annual meetings and will be primarily responsible for the format of these meetings and for filing the notes and comments from the committee members to the Graduate Office. The principal examiner should establish, in advance, guidelines for the length and nature of the student's presentations, the length and scope of the question and answer periods. Hence, prior to each meeting the student should discuss the format for that meeting with the principal examiner of their advisory committee. It is the student's responsibility to schedule the annual meeting. Annual research conferences, preliminary exams and thesis defenses should not be scheduled during the summer if at all possible with the exception of August graduations. The student should reserve a room using the room reservation system that can be found on the Departmental Website under Resources.

No less than one week before each of the annual research conferences (RC), the student must submit a written progress report to their advisory committee. The report should focus on the accomplishments and outline future goals. At the research conference, the student must make an oral presentation. This presentation should include a discussion of relevant publishable data, interpretation of the data, and research plans for the next year.

By means of a question and answer period, the advisory committee will evaluate the student's progress both in research and in strengthening any weakness in the student's background, if such was indicated by a previous examination or by the progress report. The committee will also document the student's progress by evaluating the 5 learning outcomes on a summary report as well as individual comments by each committee member. All forms should be returned to the Graduate Office as soon as possible. After each meeting, a voting about pass or fail will take place.
Failure to achieve a passing performance at two successive meetings will be considered as grounds for recommending that a student should leave the PhD program.

10. Research in Absentia.

A doctoral student who has completed the preliminary examination and wishes to leave the University to continue doctoral candidacy should request to register for research in absentia. This is only possible after the prelim is passed, all course work is completed, and at a point where remaining work on research problem and thesis may be completed off campus.

11. Identify yourself as an advanced degree candidate.

Indicate on the course registration through MyPurdue with the appropriate CAND course. You can add this course only during the first week of each semester/term. Once you are registered, this will count toward the Graduate School count of consecutive candidacy registrations. Three (3) consecutive semesters will result in a $200 fee on the 3rd semester.

If you need to register as a candidate after the first week of each semester/term, you will need to contact the Graduate Office.

12. Dissertation Preparation

PhD students must prepare their thesis prior to their final examination.

Students are encouraged to review the formatting guidelines and various submission deadlines here: https://www.purdue.edu/gradschool/research/thesis/index.html

The Major Professor is responsible for scanning the dissertation in iThenticate. The Graduate Program Coordinator can assist with this.

13. Final Examination - Planning

At least two terms must elapse and be devoted to research between prelim and finals.

Take after completion of the research and writing of the PhD thesis. This examination (thesis defense) will be publicly announced on the departmental bulletin boards and by email from the Graduate Office. It will consist of a seminar, open to the public, during which the candidate will summarize the thesis research. Following the seminar there will be an oral examination to be attended only by the Examining Committee members.

The *Request For Appointment of Examining Committee* (online GS Form 8) needs to be submitted. This must be completed 3 weeks prior to the date of your exam.

The PhD Bulletin also needs to be submitted with GS Form 8.

14. Report of Final Examination

The Major Professor and all Advisory Committee members must sign the online GS Form 11 *Report of the Final Examination.* The examination report must be filed for candidates to receive their degrees.

Not more than one dissenting vote is acceptable in certifying the candidate to receive the degree.

If the Examining Committee decides that the examination is unsatisfactory, a second examination is required. A new request form, GS Form 8, must be submitted to the Graduate School.

15. Dissertation Deposit Form & Appointment

To initiate the thesis deposit, access your myPurdue page, select the Academics tab.
Find the Graduate Student section and click the Graduate School Plan of Study link.
Then select Form 9 (Thesis/Dissertation Acceptance)
Click Initiate Thesis/Dissertation Acceptance Form
Note: Select Form 8 to indicate the degree you will receive.
Update as needed on title – Save and Continue
No change to committee – Save and Continue
The remaining questions are those that were on the Form 32.

Deposit Appointment with Graduate School: An appointment is required – but you do not need to be in attendance.

The thesis must be deposited no later than the date set by the Graduate School. This is usually the Friday of the last week of classes, but may vary. Check with the Graduate Office for specific dates each semester.

See Supplement 3 regarding electronic thesis deposit. See Supplement 4 for detailed procedures regarding Form 9.

16. Commencement Exercises

Commencement information can be found at:
http://www.purdue.edu/registrar/Commencement/index.html

17. Diplomas

Students who attend the commencement will receive their diplomas at the graduation ceremony. Diplomas for all candidates who do not attend commencement will be mailed to the graduate's "Diploma" address and/or "Permanent" address approximately four to six weeks after the ceremony. To ensure the correct mailing address for your diploma, please indicate your diploma address on the Graduation Tab under Diploma Mailing Address.

18. Degree Certification Statement

Individuals who have satisfied all of the requirements for their degree and need documentation of that fact (as is the case for some post-doctoral appointments) prior to when the degree will be awarded, may obtain such a statement from the Office of the Graduate School (YOUNG 170).

Students failing to meet any of the academic graduation requirements by the last day of the session will not graduate and must register in a later session.

Failure to meet deadlines will result in non-approval of registration for subsequent sessions. All University fees are subject to change without notice.

Supplement 1

Course Requirements

Objective:
The overall objective of these course requirement is to prepare our graduate students for a successful graduate educational and research experience through vigorous training, creative and independent thinking, scientific communication, and quantitative analysis.

Time Frame:
Students are required to declare an area of affiliation by the end of the 2nd semester. Both the course requirements below and the preliminary examination need to be completed by the end of the 2nd year.

Department & Area Specific Course Requirements:
https://www.bio.purdue.edu/Academic/graduate/phd/current_phd.html

Department 1st year
- BIOL 662-Ethics (1 ch) (Fall semester)
- BIOL 663-Oral Presentations (1 ch) (Spring semester)

- Area-specific (1st or 2nd year)
  - Scientific Writing (at least 1 ch)
  - Quantitative Analysis in Biology (3 ch)
    - This is equivalent to statistics and experimental design in the Biological Sciences
  - Advanced Topics Seminar (1 ch)

Area-specific courses:
At least 9 credit hours through graduate level courses to be determined by the research area. This will equal to a total of at least 18 credit hours by the end of the 2nd year.
BIOL 695-Teaching Assistant Professional Development

Grade Requirement:
- Students are required to maintain a B or better for all courses.
- A maximum of 2 Cs are allowed. Courses with a C grade or lower need to be re-taken within one year of the date the course was first taken. A student who receives a C in a course in the second year will need to get a B or better in that course within one year of receiving the C grade.
- Students with 3 Cs or lower will not be allowed to retake the courses and will be considered as not meeting the minimum expectation of the program.
- If a course is no longer offered, a request for an alternate course is proposed to the GASC for approval.

Notes:
- Area-specific requirements must be approved by the GASC.

- Transfer students who wish to substitute the above requirements, must get approvals from both the area conveners and the convener of the GASC.

Supplement 2

Guidelines for the Preliminary Examination in the Department of Biological Sciences

The following suggests procedures for preparation for the Preliminary Examination. It provides a list of do's and don'ts for the student and a framework for understanding expected standards of performance. Remember, this is both an oral examination and a written examination. Thus, a well-written proposal, clear presentation of the project, and solid performance when answering questions by the committee are required to pass the examination.

A. Chair of Prelim Committee & Major Professor status:
Using Form 8, Students and the Major Professor must assign a new "Chair" for the Preliminary Committee in the Plan of Study. The Major Professor is not to be present at the Prelim Exam. The Chair of the Preliminary Exam Committee is the Principal Examiner/Chair of Advisory Committee.

B. Choice of a topic:
Students taking the preliminary examination have two choices of format: (1) a topic within your own research area, or (2) a topic unrelated to the area of your thesis research. **Well in advance**, discuss your choice of format with your Major Professor since they may have strong opinions on which format is most appropriate for you. It should be noted that, regardless of the format, the expectations for performance will be similar. Examining committees are likely to be less forgiving about the depth of your background knowledge when the topic is in the area of your thesis research. Remember also that if you do choose a thesis-related topic, the proposal still must reflect the student's own scientific creativity. Whichever format you choose, you should design approaches that are expected to provide significant advances to the field and you should be prepared to discuss further approaches beyond the immediate scope of your proposal. Thoughtfulness and innovation are highly desirable qualities in a research proposal.

C. Preparation of the written proposal:
The purpose of the written proposal is to provide the examination committee with adequate background and details to understand the current state of the chosen field of research and evaluate your proposed experiments. Too little detail will frustrate the committee in its evaluation while excessive length will be a waste of their time. You should be prepared to discuss experimental details and interpretations without listing them all in the proposal. For example, you can describe how you would characterize a protein by electrophoresis without giving the composition of every solution used in the procedure. The expected length of the written proposal can vary, but 15 double-spaced pages, excluding the title page, references, figures, and figure legends is your limit. Figures should be embedded in the text and have adequate figure legends. Any results that are not your own, should be properly referenced. Keep in mind that extensive preliminary results are not required but a clear description of background, questions, approaches, expected results and alternative approaches. The font size is limited to 11 pt. Arial or 12 pt. Times New Roman.

1. Background and significance
Provide a brief background of the field. Describe the current knowledge as it relates to your proposal. Try to stick to the significant findings, but describe issues that are controversial or unclear. Be sure to point out what information is missing in the field that

you will be providing through your proposed experiments. Within the framework of your current knowledge, formulate a hypothesis (hypotheses) that you will test by experimentation. State concisely what significant issues or questions you are attempting to answer and how your studies are expected to advance the field. This section is extremely important for your committee to grasp. Do your best in conveying this message to them. It is often useful to state the issues in the form of hypotheses because this method tends to organize your thoughts about how best to test the hypotheses.

2. Research design and methods
Provide a description of the experimental approaches you are proposing. A good preliminary proposal will provide 3 or 4 major experimental approaches to be used. Be critical when using approaches proposed by others, and give credit to your sources (references, personal communications).

State the specific aims of the proposal in outline form first. Then, for each approach describe the experiments that will be performed, how data will be collected, analyzed, and interpreted. While not every conceivable detail need be included, you should be aware of the mechanics of the experiment and any instrumentation used, as well as the strengths and limitations of the method. Be prepared for alternative approaches, should your original proposed experiment fail.

3. Discussion of expected results
Describe the expected experimental results within the context of your hypotheses. Be prepared to discuss alternatives should you be able to reject your original hypothesis. Be prepared to suggest further avenues of research beyond the scope of your proposal.

4. References
In the text of your proposal, you should cite references for important previous work in the field. This is essential for the committee to obtain supplemental information as well as to evaluate whether your proposal is novel.

5. Calendar of expected progress.
Include a time estimate of doing and completing various phases of the proposed research, including specific experiments, manuscript writing and submission, dissertation writing, dissertation defense and graduation date. This will, of course, be amended as progress is realized. But it does inform the committee about an expected timetable of accomplishments.

D. Pre-prelim
You are encouraged to practice your oral defense of your proposal as a “pre-prelim”. It is advised that you seek the help of more senior graduate students who can read your proposal, sit in for a practice exam, and provide you with feedback on the strengths and weaknesses of your performance. This practice will be very valuable in preparing you for the expectations of the exam. Choose practice examiners who are beyond prelims themselves and know what to expect. Hold the pre-prelim meeting early enough to give yourself time to make any needed adjustments in the proposal. Use your own judgment in reacting to the suggestions of other students. No one is perfect and omniscient.

E. Seeking outside help

While originality in design of the experimental approach is essential, seeking outside help on details of experimentation and analysis is encouraged. For example, if you do not understand the principles behind analytical ultracentrifugation, you are permitted to seek the advice of an expert. Your Advisory Committee members may also serve in this capacity. However, the Major Professor should refrain from helping you significantly with your proposal since this is an examination.

Supplement 3

Electronic Thesis Deposit (ETD)

Prior to submitting, you are encouraged to review the Thesis Templates & Guidance website:

https://www.purdue.edu/gradschool/research/thesis/index.html

Once you've been approved to submit your ETD, the following procedures apply:

1. Access the Purdue ETD site and establish a personal account https://docs.lib.purdue.edu/cgi/login.cgi?return_to=https%3A%2F%2Fdocs.lib.purdue.edu%2Fcgi%2Fmyaccount.cgi%3Fcontext%3D&context=https://docs.lib.purdue.edu
2. Choose "Submit Your Dissertation/Thesis" at the bottom of the page.
3. Read submission guidelines. Be especially careful when inputting all data since you may not be able to go back and revise it afterwards. Post-facto data changes require action by the Thesis and Dissertation Office!
4. Read ProQuest Information & Learning (PQIL) release.
5. Enter personal contact information.
6. Enter requested thesis and academic information (e.g., title, advisor, abstract, etc.).
7. Upload full text.

NOTE: Candidates must ensure they receive, complete, and attach the special Graduate School Form 30, "*Thesis Acceptance*," as the front (i.e., first) page of their thesis before submission to the Graduate School Thesis/Dissertation Office. The GS Form 30 must be properly re-saved as a PDF document so it cannot be edited afterwards! You must perform this task on a computer loaded with Acrobat Professional since computers loaded only with "Reader" will not be sufficient. Acrobat Professional should be available on most, if not all, Purdue computer lab machines.

8. Select whether or not ProQuest/University Microfilms International will file optional "copyright registration" and enter additional data (if applicable).
9. Choose whether to order additional copies of their thesis (this is optional).
10. Review your order and enter credit card information as requested. This will show any copyright or publication fees charged.
11. If applicable, fill out any feedback surveys required by ProQuest.
12. Review uploaded data and revise submission as needed.
13. The ETD will be sent to the Administrator (Thesis/Dissertation Office) who will review it. Candidates will be notified by e-mail if they have either been approved or if they need to make revisions and resubmit.

The following items still need turned in at their deposit appointment, which must be scheduled at least 24 hours in advance of their requested day and time:

1. Original, signed G. S. Form 9 "Thesis Acceptance." G. S. Form 9's are still needed to confirm that theses have been accepted by departments and will be permanently filed at the Graduate School.

2. Completed and signed G. S. Form 32 "Thesis/Dissertation Agreement, Publication Delay, and Research Integrity & Copyright Disclaimer Form" This will be forwarded to ProQuest Information & Learning, along with electronic submissions, by the Graduate School.

3. If applicable, copyright permissions (e.g., in "hard" form—letter, e-mail, or fax). These will be forwarded to ProQuest Information & Learning by the Graduate School.

NOTE: Candidates who include copyrighted material in their thesis/dissertation not qualifying for an exemption under the copyright law must submit written permission from the copyright holders to the Thesis/Dissertation Office. The T/D Office forwards the permissions to ProQuest Information & Learning to ensure theses are published in their original and complete forms. Failure to provide required permissions will result in identified material being expunged prior to publication by ProQuest.

4. NOTE: Candidates submitting confidential theses must also submit their "hard," departmental copies at their final deposit appointment!
5. Survey of Earned Doctorate and Grad School exit survey. Please complete and turn them in to the Graduate School prior to commencement.

Questions? Please contact the Thesis/Dissertation Office: markj@purdue.edu, 63157, or www.gradschool.purdue.edu/thesis.cfm

Supplement 4

Instructions for the Initiate Thesis Acceptance Form (Form 9)

1. Access the myPurdue page at: https://mypurdue.purdue.edu

2. Log-in using your Purdue Career Account Credentials

3. Select the Academics tab.

4. Find the Graduate Student section and click the Graduate School Plan of Study link.

5. Click on Form 9 (Thesis/Dissertation Acceptance).

6. Click Initiate Thesis/Dissertation Acceptance Form.

7. If you have submitted Form 8 more than once (for multiple graduate degrees), you will select the degree that pertains to the thesis or dissertation you are currently depositing. **Note:** If you have not submitted more than one Form 8, you will not see this page.

8. Review your personal information, update your thesis or dissertation title if necessary, and then click Save and Continue

9. Review your Thesis/Dissertation Committee. If the list is correct, click Save and Continue. If you need to make a change to the list, click Save without submitting, log out of the Graduate School Database, and contact your department's Plan of Study Coordinator. Ask him/her to email gradhelp@purdue.edu with your updated committee list. After you receive a confirmation email that your list has been updated, login to the Graduate School Database again and complete the form.

10. Carefully read all material on the **Confidentiality** page, discuss your options with your major professor, make your selection(s), and then click Save and Continue.

11. Carefully read all material on the **Thesis/Dissertation Agreement** page, make your selection, and then click Save and Continue.

12. Carefully read all material on the **Delay of Publication** page, discuss your options with your major professor, make your selection(s), and click Save and Continue.

13. Carefully read all material on the **Research Integrity and Copyright Disclaimer** page. To proceed with this form and deposit your thesis or dissertation, you must click "Yes, I certify". After you have made your selection, click Save and Continue.

14. Confirm that you have completed all sections (completed sections are marked with a check), and then click Preview Thesis/Dissertation Form.

15. Confirm that all your information and responses are correct, and then click Submit.

16. If your form has been successfully submitted, you will see your decision has been successfully submitted in red at the top of the screen. The form will now proceed to the members of your thesis or dissertation committee (or if you requested a Confidentiality Period longer than 1 year, the form will proceed to the Office of Sponsored Programs). If you do **not** receive the "Thesis Form is successfully submitted" message, please check that you have completed all sections and resubmit. If after resubmitting you still do not receive the message, please contact us at gradhelp@purdue.edu.