ENTOMOLOGY & PLANT PATHOLOGY
INSTITUTE OF AGRICULTURE | UNIVERSITY OF TENNESSEE

Herbert College of Agriculture
The University of Tennessee, Knoxville

EPP Graduate Student Handbook

Photo by Teneria Parker

2022-2023

Effective July 1, 2022

Table of Contents

WELCOME STATEMENT

Welcome to the Department of Entomology and Plant Pathology (EPP) at the University of Tennessee. We are pleased that you have chosen our department for your graduate studies. By taking this important step, you are on your way to becoming a professional in Entomology, Plant Pathology, and/or Bioinformatics. Graduate studies are very different from undergraduate studies. In graduate school, while working with the guidance of your major advisor, you are expected to take responsibility for your plan of study and fulfillment of departmental and university requirements that are pertinent to your program. You also are expected to display high standards of personal and professional integrity, and to satisfy all compliance regulations governing your work and study at the University. Ideally, a successful graduate student establishes a life-long partnership with their major advisor and with the department. We want to assure you that you will receive the necessary guidance and support from your major advisor, other faculty, staff, and other students to help you in furthering your educational and career goals.

This document contains policy statements, procedures, requirements, and institutional philosophy that are consistent with the University of Tennessee Graduate Catalog. This handbook is not intended to be your sole source of information but should provide you with written guidance in many areas. The EPP Graduate Student Handbook is updated annually, and you should always refer to the most recent version. If, after seeking information in this handbook, you are uncertain about appropriate procedures, please seek advice from your major advisor or the Director of Graduate Studies.

The mission of the Department of Entomology and Plant Pathology is to advance scientific knowledge and to provide science-based information to improve the sustainability of food and fiber production, protect natural resources, and enhance the lives of all people in Tennessee and across the world. Our vision is to be a recognized and innovative leader in discovery, education, development, and applications related to entomology, plant pathology, and bioinformatics.

The Department of Entomology and Plant Pathology is fully committed to a diverse, welcoming, inclusive, and equitable environment. We welcome students, postdoctoral research associates, visiting scholars and all others regardless of age, appearance, disability status, gender, gender identity, geographic background, marital/partnered status, parenting status, political affiliation, race, religion, sexual orientation, and all other characteristics that make each of us unique. We continually work to create an inclusive environment that reflects the diversity of society in general. We aim to cultivate an environment built on mentorship, encouragement, tolerance, and mutual respect. Diversity brings together a wide range of abilities, experiences, perspectives, and worldviews that are crucial to enriching experiences and addressing challenging research questions.

The culture of the department reflects a sincere desire for a high degree of collegiality, professionalism, community participation, and mutual respect among all members, and the highest standards of scholarship and extension. We encourage the interactions of faculty, staff, and students in support of intellectual curiosity, scholarly ambition, and social enrichment. Each person's ideas and insights are valued for their creativity and independence of thought; all opinions and thoughts are welcome without prejudice or repercussions. Our departmental culture provides a constructive and safe environment to flourish and succeed, for learning and

active debate, and is one that fosters inclusivity, openness, candor, respect for all people and ideas, and professionalism. All departmental members are encouraged to collaborate freely on teaching, research, and Extension programs with colleagues at the University of Tennessee and with personnel at U.S. and global academic and governmental institutions and industry.

Our faculty members strive to prepare students to lead lives of personal integrity and civic responsibility in an increasingly diverse world. As a graduate student, you are a vital part of our department and its mission. We encourage you to participate actively in departmental activities including seminars; student, staff, and faculty recruitment; committees; outreach activities; fund raising; undergraduate student mentoring; social events; and the EPP Graduate Student Association to gain a broader perspective and more complete professional experience.

GRADUATE SCHOOL INTRODUCTION

(Approved by Graduate Deans, 2010)

In order to serve the mission and vision of the Graduate School and preserve the integrity of Graduate Programs at the University of Tennessee, Knoxville, information related to the process of graduate education in each department is to be provide for all graduate students.

Based on Best Practices offered by the Council of Graduate Schools, it is important that detailed articulation of the information specific to the graduate degrees offered in each department/program be disseminated.

The Department Graduate Handbook does not deviate from established Graduate School Policies (tiny.utk.edu/grad-policies) noted in the Graduate Catalog, but rather provides the specific ways in which those policies are carried out.

PURPOSE OF THE GRADUATE HANDBOOK

Graduate students are expected to be aware of and satisfy all regulations governing their work and study at the university. For additional information please refer to the 2021-2022 Graduate Catalog, to the Hilltopics Student Handbook, and to publications on Understanding your Rights and Obligations.

EPP GRADUATE ADMINISTRATION

The EPP Graduate Studies Committee consists of nine members. The purpose, membership, and procedures for this committee are described in the EPP departmental bylaws. The following section is excerpted from the EPP bylaws.

"Section 4. Graduate Studies Committee

9.4.1. Purpose. The Graduate Studies Committee (GSC) provides oversight to the development and maintenance of healthy and productive graduate degree programs in Entomology and Plant Pathology.

9.4.2. Membership. The committee is appointed by the Department Head. It is comprised of the EPP Director of Graduate Studies (DGS), at least six (6) additional faculty members, one (1) administrative staff member, and the Department Head. The DGS and faculty members have voting privileges. The DGS serves a 5-year renewable term and the six (6) appointed faculty members serve 2-year renewable terms on a staggered basis.

The Department Head serves as an ex officio member without voting rights except in certain cases described below. The administrative staff member serves as an ex officio member without voting rights.

9.4.3. Chair. The EPP Director of Graduate Studies (DGS) serves as the chair of the GSC. The DGS serves on the Herbert Graduate Council as the representative for EPP. In the unavoidable absence of the Chair, the member with the most time served on this committee will act as chair.

9.4.4. Procedures.

(1) The GSC shall evaluate applicants and accept or reject them on the basis of a holistic process, including review of previous transcripts, educational institution, degree, field of study, GPA, strength of academic schedule, relevant work experience, publications, presentations, awards/scholarships, research experience, teaching experience, letter of intent, curriculum vitae, letters of recommendation, TOEFL or IELTS scores for international students if the primary language of their country of origin is not English (waived if they have a degree from a U.S. university), identification of an advisor to support the student or funded of assistantship, and other factors as appropriate. Acceptance or rejection is determined by majority vote of the voting committee members. In the case of a tie vote, the Department Head shall cast the deciding vote.

(2) Votes on acceptance of applicants shall be by voice vote unless a member requests a secret paper ballot. Votes on other matters will be by voice vote unless another means is requested.

(3) The GSC shall review the progress of enrolled graduate students on a continuing basis and report perceived problems to the Department Head and the student's graduate committee. In addition, it will prepare an annual report on the state of the departmental graduate program for presentation at a faculty meeting or distribution via other means.

(4) The GSC shall develop and maintain a best practices plan for student-faculty-graduate committee interactions.

(5) An applicant and (or) prospective major professor may appeal a negative decision by submission of a letter outlining the reasons for the appeal along with additional supporting documentation. The vote of the committee on the appeal will be final.

(6) Other roles of this committee will include the following.

- Recommend admission and program policy, standards, and procedures for approval by the department faculty.
- Identify and designate graduate advisors for all applicants accepted for admission.
- Nominate candidates for fellowships and rank students for appointment to Graduate Research and Teaching Assistantships.
- Oversee the maintenance of all graduate files and records.
- Establish rules and guidelines for M.S. and Ph.D. programs of study.
- Receive and file thesis and dissertation forms.
- Monitor students' progress toward their degrees, consult with students and advisors where problems are identified, and make recommendations for

dismissal for failure to meet conditions or when reasonable progress is not being made.
- Investigate and respond to graduate student grievances.
- Develop and implement procedures and organization of events to increase the number and quality of student applicants and enhance recruitment of minority applicants
- Organize graduate student recruitment and orientation events.
- Identify opportunities to recruit graduate students and funds to support them.
- Assist in developing an attractive and informative webpage for prospective students.

Table 1. Graduate Studies Committee

Member and contact information	Role
Dr. Bonnie Ownley (bownley@utk.edu)	Chair
Dr. Denita Hadziabdic Guerry (dhadziab@utk.edu)	Member
Dr. Zachariah Hansen (hansen1@utk.edu)	Member
Dr. Heather Kelly (youngkelly@utk.edu)	Member
Dr. Bode Olukolu (bolukolu@utk.edu)	Member
Dr. Scott Stewart (sdstewart@utk.edu)	Member
Dr. Rebecca Trout Fryxell (rfryxell@utk.edu)	Member
Sonya Dexter (sdexter@utk.edu)	Ex-officio
Dr. DeWayne Shoemaker (dewayne.shoemaker@utk.edu)	Ex-officio

Department Head
Dr. DeWayne Shoemaker

Director of Graduate Studies
Dr. Bonnie Ownley

Administrative Support
Ms. Sonya Dexter

Dr. Denita Hadziabdic Guerry

Dr. Zachariah Hanson

Dr. Bode Olukolu

Dr. Heather Kelly

Dr. Scott Stewart

Dr. Rebecca Trout Fryxell

EPP FACULTY

Graduate students should review the list of faculty members (Table 2) when selecting a graduate advisor and additional faculty to serve on your graduate advisory committee. All faculty listed in Table 2 can serve as major advisor of M.S. students. Additional information about faculty can be found on the EPP website.

If you are a Ph.D. student, please consult the Recommendations for Credentialing and Dissertation Committees document on who may chair, co-chair, or serve on the committee. This document provides an explanation of five different categories[1] of potential graduate committee members; for some categories, such as non-UT faculty, the Graduate School requires that their curriculum vitae be submitted to the Graduate School for approval.

Once your committee is selected, it must be approved by the EPP Department Head.

Table 2. EPP Faculty Information

Faculty	Role	Location	Ph.D. Committee Service Category[1]
Dr. DeWayne Shoemaker (dewayne.shoemaker@utk.edu)	Professor & Department Head, Entomology	Knoxville	Category 1
Dr. Ernest Bernard (ebernard@utk.edu)	Professor Nematology	Knoxville	Category 1
Dr. Sebe Brown (sbrow175@utk.edu)	Assistant Professor Entomology	Jackson	Category 1
Dr. Jerome Grant (jgrant@utk.edu)	Professor Entomology	Knoxville	Category 1
Dr. Kimberly Gwinn (kgwinn@utk.edu)	Associate Professor Plant Pathology	Knoxville	Category 1
Dr. Denita Hadziabdic Guerry (dhadziab@utk.edu)	Associate Professor Plant Pathology	Knoxville	Category 1
Dr. Reza Hajimorad (mrh@utk.edu)	Associate Professor Plant Pathology	Knoxville	Category 1
Dr. Zachariah Hansen (zhansen1@utk.edu)	Assistant Professor Entomology	Knoxville	Category 1
Dr. Darrell Hensley (dhensley@utk.edu)	Extension Associate Professor Plant Pathology	Knoxville	Category 2
Dr. Juan Jurat-Fuentes (jurat@utk.edu)	Professor Entomology	Knoxville	Category 1

Table 2. EPP Faculty Information continued			
Dr. Heather Kelly (youngkelly@utk.edu)	Professor Plant Pathology	Jackson	Category 1
Dr. Kurt Lamour (klamour@utk.edu)	Professor Plant Pathology	Knoxville	Category 1
Dr. Marcin Nowicki (mnowicki@utk.edu)	Research Assistant Professor Plant Pathology	Knoxville	Category 1
Dr. Kevin Moulton (jmoulton@utk.edu)	Professor & Undergraduate Coordinator Entomology	Knoxville	Category 1
Dr. Bode Olukolu (bolukolu@utk.edu)	Assistant Professor Bioinformatics	Knoxville	Category 1
Dr. Bonnie Ownley (bownley@utk.edu)	Professor & Assistant Department Head Plant Pathology	Knoxville	Category 1
Dr. Scott Stewart (sdstewart@utk.edu)	Professor Entomology	Jackson	Category 1
Dr. Meg Staton (mstaton1@utk.edu)	Associate Professor Bioinformatics	Knoxville	Category 1
Dr. Robert Trigiano (rtrigian@utk.edu)	Chancellor & Institute Professor Plant Pathology	Knoxville	Category 1
Dr. Becky Trout Fryxell (rfryxell@utk.edu)	Associate Professor Entomology	Knoxville	Category 1
Dr. Jennifer Tsuruda (jtsuruda@utk.edu)	Assistant Professor Entomology	Knoxville	Category 1
Dr. Karen Vail (kvail@utk.edu)	Professor Entomology	Knoxville	Category 1

General Duties, Responsibilities, and Appropriate Behavior of Faculty and Graduate Students

The Student Handbook of the University of Tennessee is titled Hilltopics. An important section of Hilltopics is Principles of Civility and Community. These principles should guide the behavior of every person associated with the university. Hilltopics also contains the Student Code of Conduct.

Principles of Civility and Community

In 2011, the university adopted the Principles of Civility and Community, which are designed to work in concert with all existing codes of conduct. The principles encourage all members

of the campus community to foster a learning environment where the differences of our diverse culture are valued, respected, and celebrated. Civility is an act of showing regard and respect for others including politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability, and courteousness. Civility is often described as treating others as we would like to be treated. But consider taking the focus away from yourself and treating others as they would like to be treated. Our community consists of students, faculty, staff, alumni, parents of students and campus visitors. Community members affect the well-being of others and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. By affirming the value of each member of the university community, the campus asks that all its members adhere to the following principles.

AWARENESS - We believe it is important to recognize how others view and relate to the community and recognize that we are part of a larger community. **COLLEGIALITY** - We value an environment that facilitates collegial relationships, encourages mutual understanding among diverse individuals, and leads to addressing issues and differences in an atmosphere of mutual respect and civility. **DIALOGUE** - We value and encourage, and facilitate free exchange of diverse ideas and points-of-view along with free speech and expression. However, we discourage uncivil speech or expression that infringes upon the ability of others to express themselves. **DIVERSITY** - We respect the diverse backgrounds of all members of our community and welcome the opportunity for interpersonal and group interactions. **INCLUSIVITY** - We are welcoming to all and hostile to none. We foster an open community in which educational goals may be pursued.	**INTEGRITY** - We value academic honesty and integrity by all members of the academic community. **KNOWLEDGE** - We encourage development of a civil community that values critical inquiry, debate, discovery, and innovation to better the world through teaching, research, and service. **LEARNING** - We believe that learning is an interpersonal growth experience that fosters appreciation for diversity. **RESPONSIVENESS** - We encourage all community members to speak out against incidents involving bigotry and other types of incivility so the university can fulfill its responsibility of responding in a fair, timely, and consistent fashion. **RESPECT** - We believe that a person's views, ideas, and behavior best reflect the goals of the academic community when the dignity of everyone is respected and when members of the community are considerate of the feelings, circumstances, and individuality of others.

Mentors, as defined by The Council of Graduate Schools, are:

> *Advisors, people with career experience willing to share their knowledge; supporters, people who give emotional and moral encouragement; tutors, people who give specific feedback on one's performance; masters, in the sense of employers to whom one is apprenticed sponsors, sources of information about, and aid in obtaining opportunities; models of identity, of the kind of person one should be to an academic (Zelditch 1990).*

Good mentoring in all its forms involves treating students respectfully and fairly, providing reliable guidance, and serving as a role model for upholding the highest ethical standards.

Role of the Faculty Advisor in Mentoring

(These guidelines were drafted by E. Bernard, K. Gwinn, and B. Ownley in 2012 as an EPP Best Practices document on the mentoring relationship between faculty and students.)

Faculty mentoring of graduate students should be provided in three broad areas:

1. **Guiding students through degree requirements**
   - Ensuring that graduate students receive information about requirements and policies of the graduate program.
   - Advising graduate students on developing a program plan, including appropriate course work, research, or creative activity, and defining a timeline for their completion.
   - Providing regular feedback on the progress of graduate students toward degree requirements. This should include advising doctoral students on their preparedness to take qualifying exams.
   - Providing feedback and advice about the student's performance in coursework, where appropriate.
   - Providing for supervision and advising of graduate students when the faculty advisor is on leave or extended absence.
2. **Guiding students through thesis or dissertation research**
   - Advising graduate students on the selection of a thesis or dissertation topic that offers realistic prospects for successful completion within an appropriate period, and on the formation of the thesis or dissertation committee.
   - Providing training and oversight in the design of research projects, in rigorous research methodologies, in theoretical and technical aspects of the thesis or dissertation research, and in professional integrity.
   - Encouraging graduate students to stay abreast of the scholarly literature and of innovative ideas in the field.
   - Providing regular feedback on the progress of graduate students toward degree completion, including timely feedback on research, creative activities, and teaching, and constructive criticism if the student's progress does not meet expectations.
   - Evaluating clearly and explicitly the strengths and weaknesses of the student's research.
   - Encouraging an open exchange of ideas, including contemplation of the student's ideas if considered feasible by the mentor.
   - Providing and discussing clear criteria for authorship of collaborative research.
   - Assisting in finding sources to support dissertation research, such as, teaching assistantships, research assistantships, internal and external fellowships, etc.
   - Being aware of the student's research needs and aid in obtaining required resources.
   - Encouraging and constructively criticizing oral and written communication.
3. **Guiding students through professional development**
   - Guiding and/or supervising students' development as teachers, helping them find suitable employment as instructors on campus or elsewhere, visiting their classes, and providing constructive commentary and advice.
   - Encouraging participation in professional meetings of regional groups as well as of learned societies.

- Facilitating interactions with other scholars, on campus and in the wider professional community.
- Helping graduate students develop into successful professionals and colleagues, including encouraging students to participate and disseminate results of research or creative activities in the appropriate scholarly or public forums.
- Facilitating career development, including advising graduate students on appropriate job and career options, as well as on the preparation of application materials for appropriate fellowships, scholarships, and other relevant opportunities.
- Assisting with applications for research funding, fellowship applications, field placements, and other applications as appropriate for the respective discipline.
- Being the student's advocate in academic and professional communities as appropriate in the professional judgment of the mentor.
- Providing career guidance and support, including assistance in preparation of a CV and job applications, writing letters of recommendation in a timely manner, and helping the student prepare for interviews and other recruitment procedures.
- Providing guidance, if asked, about the intersection of concerns around physical and mental health, dealing with stress, or disability with the development of the student as a professional. This requires being cognizant of campus resources that address these issues.
- Helping graduate students to develop professional skills in writing reports, papers, and grant proposals, making professional presentations, establishing professional networks, interviewing, and evaluating manuscripts and papers.

4. **Communicate with and strive to understand each student as a unique individual**
   - Mentors should recognize and seek to understand the various cultures of their students.
   - Mentors should build trust and create a comfortable working environment, especially for members of underrepresented groups in the program.
   - Graduate research assistants do not have automatically granted vacations or leave; they are required by their contract to work 20 hours/week on a 12-month appointment. Students should be aware of and adhere to the university calendar (i.e., weekdays not designated as holidays or official closings are workdays). The major professor must approve all non-sick leave before it takes place. A student should notify the major professor if they will be out for medical reasons.
   - With respect to family responsibilities, mentors should be alert to students who need extra support when having a child, raising a child alone, returning to school after child-rearing, caring for an elderly parent, etc. If a student holds an appointment as a GRA or GTA and is unable to fulfill their duties, every effort should be made to modify the student's duties for the remainder of the semester. If family responsibilities (as adequately demonstrated by the student through appropriate documentation) prevent them from performing any duties, it is strongly urged that the student continue to receive a stipend from the department, contract, or grant (if allowed by the funding source) for the leave period.

Graduate Student Responsibilities (from Graduate Council Appeal Procedure Handbook):

> *"A graduate student must abide by the standards for conduct outlined in Hilltopics as specified therein: 'An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty.' A graduate student is required to uphold these standards of integrity and honesty in all learning, teaching, and research activities. A graduate student can, in turn, expect the same degree of integrity and honesty from all teachers, mentors, and advisors."*

Role of the Graduate Student Mentee

As partners in the mentoring relationship, graduate students also have responsibilities. Students should:

1. Be aware of their own mentoring needs and how these change through their graduate student tenure. Graduate students should discuss these changing needs with their mentors. If concerns arise about physical or mental health, dealing with stress, or disability, these may be brought to the attention of the mentor for advice on campus resources. Students should not expect mentors to deal with longstanding health issues or major emotional events that are more properly the province of professional counselors, physicians, and psychotherapists.
2. Recognize that one faculty member may not be able to satisfy all a student's mentoring needs. Seek assistance from multiple individuals/organizations to fulfill the mentoring roles described above.
3. Recognize that their mentoring needs must respect their mentor's other responsibilities and time commitments.
4. Become aware of—and meet—the deadlines associated with the degree program.
5. Maintain and seek regular communication with their mentors, especially the major professor.
6. See to it, in cooperation with the Head and the Graduate Director in the program, that all parties are informed if a change of advisor is contemplated. If specific research plans have been agreed with one advisor, see these through if possible before changing to another advisor.

Advisor/Student Guidelines

Both mentors/advisors and students should be aware of some general common-sense guidelines, as follows:

1. Entering a mentoring relationship is voluntary. Mentors and students should discuss their expectations of the mentoring relationship upon entering it.
2. Either party has the right to withdraw from the mentoring "contract" if, despite genuine attempts to make it work, the relationship is not satisfactory. The department head must be included in this discussion. Portability of assistantships should be discussed.
3. While often the mentor will have more experience on aspects of work, the relationship should be one of partners who jointly make decisions, with consideration of the budget and time limitations of the specific project.

4. Meetings should be held in a quiet environment (or environments, for telephone meetings) where both parties feel they can speak freely without being overheard.
5. Meetings should be long enough and paced to allow the two people to get to know each other in a safe and comfortable environment.
6. Information shared in mentoring meetings is subject to standard rules of professional confidence (see below).
7. Commitments made should be honored by all parties (mentor and mentee). If meetings are canceled or delayed, adequate warning of non-availability or delay should be given. A postponed meeting should be re-booked promptly.
8. Either party has the right to ask for a review of how the mentoring is progressing, or for agreements or plans made at an earlier stage to be reviewed.
9. If either party feels unclear about the status of the mentoring, that party should seek to clarify the views and wishes of the other party.
10. Mentors should recognize their limitations and avoid working with the student in ways that exceed those limitations.
11. Should either party sense there is a conflict of interest between the mentoring and any other role, this should be made known to the other as soon as is practicable.

Specific Items Relating to UTK, Herbert College, and EPP and their Requirements and Expectations

The relationship between the mentor and student should always be congenial, professional, and respectful. Both parties bear responsibility for a healthy relationship. The list below applies primarily to the relationship of the student to other university personnel.

Problems and conflicts are best resolved if they are discussed when they first appear. Both mentor and student are expected to listen carefully to what the other has to say. The university, Herbert College, and the department have formal, well-defined avenues to take if conflict cannot be resolved. A student can always speak informally about problems with any trusted faculty member or ask a faculty member to serve as an advocate. If a problem is not resolved by the mentor-mentee (faculty advisor-student) discussion, the following hierarchy of appeal should be followed:

1. Meeting of the student's graduate advisory committee
2. Director of Graduate Studies (DGS)
3. Department Head (DH) – The DH and DGS may appoint an ad hoc committee to review the situation and recommend solutions. The major advisor and/or student can also request such a committee.
4. Dean of Herbert College

All persons within the department, college, and university are deserving of respect and civil discourse. Unprofessional or hostile behavior or grossly intemperate language toward anyone including faculty, technical staff, clerical staff, or other students will not be tolerated and may be grounds for discipline.

In the case of conflict, a student should not denigrate or cast aspersions on the professional reputation of the mentor, the mentor's lab and personnel, or the department in any manner including verbal, written, electronic, or internet-based. Hurtful gossip, rumor-mongering, and attacks via social media are not only harmful to the target, but they ultimately can also cause severe damage to the reputation of the originator. Serious violations may result in dismissal from the program.

Students are expected to follow the directions, advice, and counsel of the mentor and the graduate committee on matters relating to university activities, including research expectations, agreed-upon work hours, laboratory practices, established deadlines and field work. All university regulations regarding best lab practices must be followed.

Ownership of Research Documents

Laboratory notebooks, research findings, and other research documents are the property of the University of Tennessee and the major professor and must be freely shared on request from the major professor. Labs are encouraged to develop shared online resources that are sanctioned by the University of Tennessee, such as the Microsoft One Drive, UTK Google Drive, and T-Storage (http://oit.utk.edu/storage/). Students must keep in mind that some research is proprietary and confidential; sharing with friends and other unauthorized personnel may be a violation of the agreement the mentor has made with the funding entity. It is essential that the level of confidentiality be understood by all parties because violation could result in the loss of funding.

Course schedules after the first semester MUST be approved by the major professor and the graduate committee before enrollment in classes. The student's graduate committee should have full input into the course of study. Enrollment in extra courses not approved by the advisor or committee costs the department significant funds that could otherwise be used to support another student and may result in the removal of the GRA/GTA tuition waiver.

In addition to current EPP departmental policies, these guidelines are adapted from those published by several other universities and organizations:

Best Practices for Faculty Mentoring of Graduate Students, University of California, Berkeley.

Mentoring Guidelines, Graduate Council, University of California, Davis, http://gradstudies.ucdavis.edu/gradcouncil/mentoring.pdf.

Advisor, Teacher, Role Model, Friend, National Academy of Sciences, National Academy of Engineering, Institute of Medicine, http://www.nap.edu/readingroom/books/mentor/.

Guideline for Faculty Mentors, University of California, San Francisco

The Council of Graduate Schools. https://cgsnet.org/.

Zelditch, M. (1990). Mentor Roles, Proceedings of the 32nd Annual Meeting of the Western Association of Graduate Schools. Cited in Powell, R. C. and Pivo, G. (2001), Mentoring: The Faculty-Graduate Student Relationship. Tucson, AZ: University of Arizona.

ADMISSIONS REQUIREMENTS

For admission to the EPP Master of Science program, a student must meet all requirements of the Graduate School of the University of Tennessee, Knoxville, and must have completed at

least 24 credit hours of biological and physical sciences at the undergraduate level or demonstrated relevant research or work experience.

For admission to the EPPN Ph.D. graduate program, students must meet all requirements of the University of Tennessee, Knoxville, Graduate School and must have completed at least 24 credit hours of biological and physical sciences at the undergraduate level.

For admission to a graduate program at the University of Tennessee, a U.S. student must have earned a minimum 2.7 out of a possible 4.0 GPA or a minimum of 3.0 during the senior year of undergraduate study and a minimum of 3.0 on a 4.0 scale on all graduate work.

An international student must have an equivalent 4-year bachelor's degree. Individuals with degrees from foreign institutions must have earned a minimum of 3.0 on a 4.0 scale on all undergraduate work and a minimum of 3.3 on a 4.0 scale on all graduate work. International students who have been awarded a degree from an accredited U.S. institution, must have earned a minimum 2.7 out of a possible 4.0 GPA or a minimum of 3.0 during the senior year of undergraduate study and a minimum of 3.0 on a 4.0 scale on all graduate work.

English Language Requirement – International students from a country with English as the official language are not required to take an English language test (Table 3). Applicants whose native language is not English are required to take and pass the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). Passing marks are 550 (paper-based), 213 (computer-based), and 80 (internet-based; iBT) for TOEFL, or 6.5 for IELTS. Official scores must be received directly from the appropriate testing service. The University of Tennessee's score reporting code for TOEFL is 1843. The score must not be older than two years from the requested date of entry. International applicants who have received a degree from an accredited U.S. institution in the past two years are exempt from the TOEFL or IELTS requirement.

Countries with English as the Official Language

The following are countries in which English is an official language. If your country of citizenship is one of these listed, you are exempted from the English Certification requirement for application to the Graduate School at UT.

Table 3. Countries with English as the Official Language

Anguilla	Gambia	Nigeria	Singapore
Antigua & Barbuda	Ghana	Niue	Sint Maarten
Bahamas	Grenada	Norfolk Island	Solomon Islands
Belize	Guyana	Northern Mariana Islands	Somalia
Belgium	Hong Kong	Pakistan	South Africa
Bermuda	India	Palau	South Sudan
Botswana	Ireland	Papua New Guinea	Sudan
British Virgin Islands	Jersey	Philippines	Swaziland
Burundi	Kenya	Pitcairn Islands	Tanzania
Cameroon	Liberia	Rwanda	Tonga
Canada	Malawi	Saint Kitts & Nevis	Trinidad & Tobago
Cayman Islands	Malta	Saint Lucia	Turks & Caicos Islands
Christmas Island	Marshall Islands		Tuvalu

Cook Islands	Micronesia	Samoa	Uganda
Dominica	Namibia	Seychelles	Zambia
Fiji	New Zealand	Sierra Leone	Zimbabwe

APPLICATION PROCEDURE

To apply for admission, the following must be submitted to Graduate Admissions through the online application submission process.

1. Non-refundable application fee ($60) for new applications to EPP. This can be paid by credit/debit card or electronic check. If you have completed your M.S. in EPP and are transitioning to our Ph.D. program, select the "change of program "option, and the fee is $30.
2. Uploaded copies of original transcripts of all prior undergraduate and graduate coursework and degree confirmations (if applicable). This includes transcripts from colleges and universities where a degree was not conferred.
3. Uploaded departmental requirements as indicated in the online application system
4. Uploaded degree certificates (if applicable)

Submit application, fee, official transcripts, three letters of reference (or three Graduate Rating Forms), curriculum vitae, and a detailed statement of professional goals and reasons for applying to Entomology and Plant Pathology directly to the Office of Graduate Admissions. In the statement letter and application, the concentration of interest and preferred major advisor must be indicated.

Please note the following information related to EPP requirements for your application.

1. Three letters of reference – The letters of reference should come from former instructors, mentors, or advisors who know you well. Your recommenders should be able to attest to your academic performance and potential for graduate study. Do not include letters that do not specifically address your academic and research abilities.
2. Letter of intent that describes why you are interested in graduate studies in our department
3. Curriculum vitae - Complete supplementary information with emphasis on undergraduate preparation, demonstration of extracurricular or supplemental study related to entomology, plant pathology or bioinformatics, academic honors, awards or scholarships, publications, abstracts, and presentations. We are also very interested in whether applicants have had prior research experience, either as a student or through employment.
4. Statement of interest – professional interests and reasons for applying to EPP
5. Concentration of interest and preferred major professor should be indicated.
6. Applicants are strongly encouraged to contact prospective major professors early in the application process to learn if your interests match their programs.

FINANCIAL SUPPORT

Scholarships in the forms of Graduate Teaching Assistantships (GTA), Graduate Research Assistantships (GRA), and Graduate Assistantships (GA) are awarded on a competitive basis. In the Department of Entomology and Plant Pathology, an assistantship covers tuition costs (referred to as maintenance fees) and provides a stipend for living expenses. We offer half-time (20 hours per week) and quarter-time (10 hours per week) assistantships. For a half-time assistantship, our minimum stipend for living expenses is $20,000 per year for MS students and $22,000 for PhD students.

Before an I-20/DS-2019 can be issued for an admitted international student, documented availability of sufficient funds for the first 12 months of studies must be submitted to the Center for Global Engagement (CGE). Please visit the CGE website for the most current estimate of expenses.

REGISTRATION AND ADVISING

Students should seek the advice of their major advisor about registration for all courses. If more assistance is needed, please contact the Director of Graduate Studies (Dr. Ownley).

INSTITUTE POLICIES AND RIGHTS FOR GRADUATE RESEARCH ASSISTANTS

1. Graduate Research Assistants (GRAs) and Graduate Teaching Assistants (GTAs) are employees responsible to the Department Head and are under the supervision of their major advisor. They are appointed to contribute to the research or teaching program under the direction of their major advisor. **Their workload (beyond academics and their individual research project) is 50% of a full-time equivalent or 20 hours per week**.
2. Assistantships, fellowships, and other stipends are paid in equal portions (over 9 or 12 months depending on the source) and may be subject to Federal Income Tax year-round and Social Security Tax when the student is not enrolled in classes, e.g., between semesters and during the summer.
3. A maximum of 20 hours of academic work per calendar year may be taken. M.S. students on departmental funding are expected to complete the requirements for the M.S. degree in 2 years. M.S. assistantships are generally funded only for 24 months. Students normally take all coursework, thesis hours, etc., during fall and spring semesters. Students do not enroll in courses during the summer semester unless: 1) a necessary course is taught only in the summer, or 2) the student is graduating in the summer semester and must enroll for 3 hours of Thesis (EPP 500) or Dissertation (EPP 600).
4. Ph.D. students are required to take at least 3 credits of EPP 600 every semester (including summer) once they have first received credit for it.
5. Out-of-state tuition is waived for all GRAs and GTAs. University-mandated health insurance and other fees are paid by the department or from granting agencies. GRAs and GTAs are eligible for official University holidays.
6. GRAs and GTAs will develop a work schedule in consultation with their faculty advisor. The priority of all graduate assistants must be satisfactory progress in their scholastic program. At the same time, acceptance of an assistantship is predicated on the belief that

satisfactory progress can be concurrently achieved with additional work assignments. Collaborative efforts between graduate assistants and their major advisors should be focused on the goal of satisfactory performance in both areas.

7. An M.S. student on an assistantship and their major advisor together with the Graduate Advisory Committee will select a thesis problem that can be completed within the two-year term normally expected for the M.S. degree program. Circumstances beyond the control of the student may necessitate a longer time for completion, but there is no guarantee that a funded assistantship will be continued. However, the student may request an extension of the assistantship through the major advisor to the department head by writing a justification as to why the extension is needed. The major advisor should concur and write a letter in support of the extension. The Department Head and Graduate Studies Director will carefully evaluate each request based on the individual circumstances involved and availability of funds and notify the student of the decision.
8. The Student Health Clinic administers the graduate student employee health insurance program. The health plan requires a referral by the Student Health Clinic. Graduate students enrolled in less than 9 hours and who have not paid the student health fee must pay the health fee each semester to utilize the Student Health Service (prior to using the health plan). Students may elect to add spouse or dependent coverage at their own expense. Please direct questions regarding the graduate student employee health insurance to the Student Health Clinic.
9. In all cases of appointment and reappointment, the major advisor is responsible for notifying the graduate assistant as early as possible. When an assistantship is not to be renewed, the graduate student should be notified in advance. In most cases, this notice must be given no later than one month prior to the end of the appointment. Specific reasons for not renewing the contract should be given (e.g., discontinuation of the program or grant, significant neglect of duty, unsatisfactory academic performance or progress toward a degree, lack of research progress, non-compliance with university policies, etc.). In cases where an assistantship is for one year only, the student should be informed at the time of appointment. In some circumstances, graduate assistants may be given a conditional appointment such as an appointment in which funding of a grant is pending.
10. In cases where graduate assistants feel that they have a legitimate complaint about any aspect of carrying out their assignments (work hours, duties assigned, pay, work conditions, etc.), they have a right to pursue all established channels to resolve the conflict. In the order that follows, the student should speak to their immediate supervisor, the department head, the appeals committees in the home unit or college, and the dean of Herbert College. If the student feels that a resolution should be sought beyond the department/college level, the Dean of the Graduate School should be contacted. Established procedures are outlined in the Graduate Council Appeals Procedure and/or Hilltopics.
11. The maximum number of years that a graduate assistant can be appointed to an assistantship is three years as a master's student, five years as a doctoral student, or eight years in doctoral programs in which students enter with a baccalaureate degree only. Some units may have maximum time limits that are less than those stated above.

Requests for an extension beyond the maximum terms here specified must be made in writing by the academic unit to the Dean of the Graduate School. In EPP, these requests should be routed through the Director of Graduate Studies.

12. Information on relationships between students and faculty, including prohibited relationships can be found in section 2.2.6 (Relationships with Students) of the UTK/UTIA Faculty Handbook. Graduate assistants' rights and responsibilities are defined in Student Rights and Responsibilities section of Hilltopics. Additional rights and responsibilities of graduate students are found on the student's copy of the admission status form.

NON-ASSISTANTSHIP STUDENTS

Full or part-time employees may pursue graduate degrees. Procedures for regular university employees in relation to making up work and number of hours/semester are detailed in Policy No.: HRO330. Students who are not on assistantship or employed by UT will work with their advisor to determine course loads and research schedules on a case-by-case basis to ensure timely progression through the program.

FELLOWSHIPS

Graduate Fellowships are available from University. Eligibility requirements, application procedures, stipends and responsibilities for graduate fellowships are given.

LOANS

Student loans for graduate students are administered by the Office of Financial Aid and Scholarships at 115 Student Services Building.

EMPLOYMENT

Graduate Research Assistant Students with a 50% appointment may not incur further on-campus work obligations without specific approval from the Dean of Graduate Studies. GRAs with 50% appointments are discouraged from engaging in off-campus employment.

RESOURCES FOR STUDENT PROBLEM RESOLUTION

Learning to address issues and solve problems in an informed, proactive way helps students improve their knowledge of the University as well as develop personally. When students experience problems at UTK, there are several offices available to help them.

Issues Related to Academic Coursework

Issues related to grades or academic coursework should first be addressed with the course instructor, then the appropriate department head, and finally the dean of the college in which the course is offered. If an appropriate solution cannot be reached through discussions with these individuals, the Associate Dean of Graduate Studies can help regarding the best "next steps" for problem resolution.

Issues Related to Campus Life

All comments and concerns related to campus life, student organization, or student interests should be directed to the Dean of Students Office. Staff in this office will assist in resolving a concern or identifying the appropriate channel of appeal.

Students who are unsure how to initiate the process of problem resolution may contact the Dean of Students (865-974-3179) or Dr. Ernest Brothers, Associate Dean of Graduate Studies (865-974-3634) for assistance in determining the appropriate administrative channels of appeal.

Staff in the following offices provide support and guidance for students who are pursuing the resolution of university-related problems. These staff: (1) explore problems encountered by individual students, (2) inform students of appropriate administrative channels that should be utilized for problem resolution, and (3) work to address the broader issues and policies that impact all students. Each office is open from 8:00 a.m. - 5:00 p.m. Monday through Friday. Students are encouraged to visit any of these offices to share their concerns and ask for assistance.

1. Associate Dean of Graduate Studies (218 Student Services, 865-974-3634). The Associate Dean of Graduate Studies is available to assist graduate students who are experiencing difficulties or want to express academic concerns related to their graduate programs.
2. Dean of Students (413 Student Services Building, 865-974-3179). The Dean of Students Office sponsors and coordinates activities that focus on student growth and development outside of the classroom. This office advocates on behalf of all students, supplements existing channels of appeal, and helps students to resolve problems in a variety of areas.
3. Office of Equity and Diversity (1840 Melrose Avenue, 865-974-2498). The Office of Equity and Diversity (OED) assists the University community in its goal to affirm diversity as an opportunity for personal growth and development. OED provides resources and services for the enhancement of diversity programs campus-wide. In addition, OED works with members of the University community who wish to file a complaint of discrimination or sexual harassment. All complaints receive private and immediate attention.
4. Conflict Resolution Program (865-946-8847). The Conflict Resolution Program provides mediation services whereby people having conflict can work with a neutral third party to resolve their differences. The Conflict Resolution Program also offers seminars, internship opportunities, and consultation for individuals or groups. Services are available to students, faculty, and staff. They are voluntary and confidential.
5. Dean, Herbert College of Agriculture (Herbert) (126 Morgan Hall, 865-974-7303).
6. Student Disability Services (915 Volunteer Blvd/ 100 Dunford Hall, 865-974-6087). If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact Student Disability Services. This will ensure that you are properly registered for service.
7. University Ombudsperson. The ombudsperson program is designed to provide an informal mediator, and the process is an alternative to university's formal complaint and grievance procedure for staff and the administrative and Faculty Senate process for faculty. An ombudsperson does not serve as an advocate for the faculty or staff member or the university, but as a supporter of fair practices. This office can also be utilized for disputes between students and faculty or staff.

ADDITIONAL RESOURCES

1. AgResearch
2. Center for Global Engagement
3. Center for Student Engagement
4. Herbert College of Agriculture (Herbert)
5. Department of Entomology & Plant Pathology (EPP)
6. Event Calendar
7. Financial Aid
8. Fitness and Physical Activity
9. Graduate and International Admissions
10. Graduate Catalog
11. Graduate Orientation
12. Graduate School
13. Graduate School forms
14. Graduate Student Appeals Procedure
15. Graduate Student Life
16. Graduate Student Senate
17. Housing (on campus)
18. Housing (off campus)
19. Information Technology
20. International House
21. ITA testing for teaching assistants
22. Library Resources
    - Scholars' Collaborative
    - Subject Librarians
    - Research Consultation
    - Research Guides
    - Citing Sources
    - EndNote | Zotero
23. Mindfulness Club
24. Multicultural Student Life/Black Cultural Center
25. Office of Research and Engagement
26. Parking Information

27. Parking Maps
28. Publishing Research
29. Register for courses (One Stop)
30. Scholarships One Stop/Scholarships (internal and external)
31. Student Counseling and Mental Health
32. Student Health Center
33. Student Insurance Information
34. Student Resources
35. Thesis/Dissertation

DEGREE REQUIREMENTS FOR EPP GRADUATE PROGRAMS

***Note:* Degree requirements change annually. The Graduate School mandates that graduate students must fulfill the requirements of the Graduate Catalog that are in effect during the semester in which they graduate.**

This handbook serves as a guide for the M.S. and Ph.D. programs in the Department of Entomology and Plant Pathology at the University of Tennessee, Knoxville. The department offers an M.S. degree in Entomology and Plant Pathology, with concentrations in: **Bioinformatics and Genomics; Entomology;** and **Plant Pathology**, and a Ph.D. degree in Entomology, Plant Pathology, and Nematology, with concentrations in **Bioinformatics, Genomics, and Molecular Interactions**; **Organismal Biology, Ecology, and Systematics**; and **Sustainable Disease and Integrated Pest Management**. Each concentration has different requirements, and students may only graduate with one concentration. **For both the M.S. thesis and Ph.D. programs, a concentration must be selected.**

The regulations and procedures described in this handbook are consistent with the requirements of the Office of Graduate and International Admissions as well as those of the Herbert College of Agriculture (Herbert), UT AgResearch, and UT Extension at the University of Tennessee.

Master of Science (M.S.) Entomology & Plant Pathology– Thesis Option

The M.S. degree is designed to provide students with the basic disciplinary knowledge and research background for a career in the life sciences. Graduates have proven to be competitive in obtaining positions at academic institutions, in public service or the private sector, or admission to Ph.D. programs.

Many of the specialties within the department involve cross-disciplinary activity, including close cooperation with bioinformaticians, ecologists, horticulturists, geneticists, soil scientists, and veterinarians. The department has expertise in alternative methods of insect and disease management, such as biological control, resistant cultivars, cultural techniques, and integrated pest management to help meet the need for safe food production.

A student seeking the M.S. degree must complete a written thesis based on original research and the completion of a minimum of 24 semester hours of course work for graduate credit, approved by the student's graduate advisory committee. Included in the course requirements are two acceptable seminar presentations. The first seminar (for 1 hour of EPP 640 credit) is a

research proposal. The second seminar (no course credit received) is an exit seminar based on the student's thesis research. In addition, 6 hours of EPP 500 Thesis are required. During their last semester, regardless of how many hours of EPP 500 a student has taken, graduating students must register for 3 hours of EPP 500 – this is a Graduate School Requirement. Plan your course schedule wisely to avoid excessive credit hours of EPP 500.

Students are strongly encouraged to publish papers derived from their theses. An oral final exam must be passed to the satisfaction of the student's graduate advisory committee after the thesis has been completed. The oral exam is both comprehensive and a defense of the thesis.

A minor is not required but may be selected at the option of the student in consultation with their major advisor and graduate advisory committee. The minor must include at least 6 semester hours and not more than 12 hours of graduate-level credit in the minor department. Requirements for Minor programs vary, and the UT Graduate Catalog must be consulted to find these requirements. The student's committee shall include a member of the faculty from the minor department to assist in designating courses required for the minor. If you select a minor, be aware that this may increase the number of credit hours that you are required to take. However, depending upon your research topic and career goals, a minor may well be appropriate.

Requirements For M.S. Concentration (Thesis Option)

Bioinformatics and Genomics Concentration (Thesis option)

In addition to a strong biological background in entomology, plant pathology or a combination of the two, students will gain foundational knowledge in bioinformatics and genomics. Students concentrating in bioinformatics and genomics can study biological sequencing and analysis of DNA and RNA, epigenetics, metagenomics and metatranscriptomics, phylogenomics, genotyping by sequencing, differential gene expression, population genomics, gene interactions and/or proteomics. A student with prior coursework and/or experience may petition the EPP faculty for a course exemption(s). An exemption may be granted by majority vote based on documentary evidence or written and/or oral exams.

Degree Requirements

Credit Hours Required: 30

Required Courses:

- EPP 500 Thesis, 6 credit hours
- EPP 570 Colloquium, 1 credit hour
- EPP 622 Bioinformatics Applications, 3 credit hours
- EPP 640 Graduate Seminar, 1 credit hour, proposal seminar
- A minimum of 9 credit hours from entomology and plant pathology (EPP) courses (excluding EPP 500, EPP 502, EPP 503, EPP 570, EPP 640, EPP 675, and EPP 622)
- Program electives, a minimum of 7 credit hours including, but not limited to BCMB 422, BCMB 510, BCMB 520, COSC 594 (section titled Bioinformatics), CBE 672, GEOL 590, LFSC 507, LFSC 520, LFSC 521, MICR 540 / LFSC 517, and MICR 650. In addition, special topics on bioinformatics are periodically offered in BCMB 520, EPP 602, EPP 604, EPP 606, LFSC 595, and LFSC 695.

- A quantitative analysis course (3 credit hours) is highly recommended and usually will be required by the student's thesis advisory committee. Recommended courses include COSC 505, COSC 526, COSC 560, EEB 560, EPP 633, PLSC 561, PLSC 571, STAT 577, and STAT 579.

Additional Course Options:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course Requirements:

- The student and the major advisor must select a minimum of two additional faculty members from the University of Tennessee, who hold the rank of assistant professor or above, to serve on the student's thesis advisory committee. The responsibility of this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The committee should be formed during the first semester of the student's program.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their M.S. program.
- Students are expected to prepare a detailed written proposal prior to research for the project.
- A written thesis, approved by the major advisor and thesis advisory committee, is required.
- An oral final examination that covers the thesis and coursework is required and must be passed to the satisfaction of the advisory committee after the thesis has been completed.
- An oral departmental seminar presentation on the thesis is required. All members of the department must be invited to attend.

Entomology Concentration (Thesis Option)

Entomology is an interdisciplinary science that specializes in plant, human, and animal health with a focus on problematic and beneficial insects. Students who wish to prepare for further graduate studies or careers as researchers, teachers, Extension specialists, regulators, or practitioners of plant/human/animal health or insect pest management may choose the Entomology concentration.

Degree Requirements

Credit Hours Required: 30

Required Courses:

- EPP 500 Thesis, 6 credit hours
- EPP 548 Taxonomy of Adult Insects, 4 credit hours
- One course, 3 credit hours, from EPP 530, EPP 552, and EPP 561
- A minimum of one course, 3 credit hours, from EPP 410, EPP 411, EPP 425, EPP 508, EPP 509, EPP 523, EPP 485, EPP 530, EPP 552, EPP 561, and EPP 630
- EPP 570 Colloquium, 1 credit hour
- EPP 640 Graduate Seminar, 1 credit hour
- Program electives, minimum 10 credit hours, will be selected by the student in consultation with the major advisor and advisory committee. Coursework disciplines include but are not limited to the following.
    - Agricultural and Natural Resources (AGNR),
    - Animal Science (ANSC),
    - Biochemistry and Cellular and Molecular Biology (BCMB),
    - Biomedical Engineering (BME),
    - Biosystems Engineering (BSE),
    - Business Analytics (BZAN),
    - Comparative and Experimental Medicine (CEM),
    - Electrical and Computer Engineering (ECE),
    - Ecology and Evolutionary Biology (EEB),
    - Entomology and Plant Pathology (EPP),
    - Environmental Engineering (ENVE),
    - Environmental and Soil Sciences (ESS),
    - Food Science (FDSC),
    - Forestry (FORS, FWF),
    - Geography (GEOG),
    - Life Sciences (LFSC),
    - Microbiology (MICR),
    - Plant Sciences (PLSC),
    - Statistics (STAT), and
    - Wildlife and Fisheries Science (WFS).
- A quantitative analysis course (3 credit hours) is highly recommended and usually will be required by the student's thesis advisory committee. Recommended courses include but are not limited to ANSC 571, EEB 560, FWF 525, PLSC 561, PLSC 571, STAT 531, STAT 532, STAT 577, and STAT 579.

Additional Course Options:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course requirements:

- The student and the major advisor must select a minimum of two additional faculty members from the University of Tennessee, who hold the rank of assistant professor or above, to serve on the student's thesis advisory committee. The responsibility of this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The committee should be formed during the first semester of the student's program.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their M.S. program.
- Students are expected to prepare a detailed written proposal prior to research for the thesis.
- A written thesis, approved by the major advisor and thesis advisory committee, is required.
- An oral final examination that covers the thesis and coursework is required and must be passed to the satisfaction of the advisory committee after the thesis has been completed.
- An oral departmental seminar presentation on the thesis is required. All members of the department must be invited to attend.

Plant Pathology Concentration (Thesis Option)

Plant Pathology is an interdisciplinary science that specializes in plant health with a focus on the organisms that cause plant disease. Students who wish to prepare for further graduate studies or careers as researchers, teachers, Extension specialists, regulators, or practitioners of plant health management may choose the Plant Pathology concentration.

<u>Degree Requirements</u>

Credit Hours Required: 30

Required courses:

- EPP 500 Thesis, 6 credit hours
- EPP 505 Mycology, 3 credit hours
- One course, 3 credit hours, from EPP 516, EPP 520, and EPP 521
- A minimum of one course, 3 credit hours, from EPP 410, EPP 411, EPP 508, EPP 509, EPP 512, EPP 514, EPP 516, EPP 520, and EPP 521
- EPP 570 Colloquium, 1 credit hour
- EPP 640 Graduate Seminar, 1 credit hour
- Program electives, minimum 10 credit hours, will be selected by the student in consultation with the major advisor and thesis advisory committee. Coursework disciplines include but are not limited to the following.
    - Agricultural and Natural Resources (AGNR),
    - Animal Science (ANSC),
    - Biochemistry and Cellular and Molecular Biology (BCMB),
    - Biomedical Engineering (BME),
    - Biosystems Engineering (BSE),
    - Business Analytics (BZAN),
    - Comparative and Experimental Medicine (CEM),
    - Electrical and Computer Engineering (ECE),
    - Ecology and Evolutionary Biology (EEB),
    - Entomology and Plant Pathology (EPP),
    - Environmental Engineering (ENVE),
    - Environmental and Soil Sciences (ESS),
    - Food Science (FDSC),
    - Forestry (FORS, FWF),
    - Geography (GEOG),
    - Life Sciences (LFSC),
    - Microbiology (MICR),
    - Plant Sciences (PLSC),
    - Statistics (STAT), and
    - Wildlife and Fisheries Science (WFS).
- A quantitative analysis course (3 credit hours) is highly recommended and usually will be required by the student's thesis advisory committee. Recommended courses include but are not limited to ANSC 571, EEB 560, FWF 525, PLSC 561, PLSC 571, STAT 531, STAT 532, STAT 577, and STAT 579.

Additional Course Requirements:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course Requirements:

- The student and the major advisor must select a minimum of two additional faculty members from the University of Tennessee, who hold the rank of assistant professor or above, to serve on the student's thesis advisory committee. The responsibility of

this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The committee should be formed during the first semester of the student's program.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their M.S. program.
- Students are expected to prepare a detailed written proposal prior to research for the thesis.
- A written thesis, approved by the major advisor and thesis advisory committee, is required.
- An oral final examination that covers the thesis and coursework is required and must be passed to the satisfaction of the advisory committee after the thesis has been completed.
- An oral departmental seminar presentation on the thesis is required.

Master of Science (M.S.) Entomology & Plant Pathology – Project/Non-Thesis Option

There are no concentrations for the project (non-thesis) option. In lieu of a thesis, students are required to complete a project/practicum and prepare a written report summarizing project findings. Students working on a project/practicum must complete 30 credit hours of graduate credit, which includes one to four credit hours of EPP 503, and an acceptable seminar presentation for one credit hour. A final oral examination covering the project and coursework are required and must be passed to the satisfaction of the advisory committee after the project/practicum has been completed.

Students who select the non-thesis M.S. option are not eligible for Graduate Research or Teaching Assistantships but may receive hourly pay based on availability of major advisor grant/contract funds or scholarships. The non-thesis option is directed primarily at those who are already employed full-time and wish to fulfill degree requirements over a longer time.

Requirements for M.S. Project/Non-Thesis Option

Degree Requirements

Credit Hours Required: 30

Required Courses:

- EPP 503 Project/Practicum, 1-4 credit hours
- EPP 570 – Colloquium, 1 credit hour
- EPP 640 - Graduate Seminar, 1 credit hour. Students are expected to attend seminar each academic semester of their M.S. program, regardless of whether they are registered for EPP 640 credit. Online options are available.
- A minimum of 15 credit hours from EPP courses that are approved for graduate credit (excluding EPP 500, EPP 502, EPP 503, EPP 570, EPP 640, and EPP 675).
- A minimum of one course (3 credit hours) from EPP 425, EPP 508, EPP 523, EPP 530, EPP 552, and EPP 561
- Program Electives, 9 to 12 credit hours will be selected by the student in consultation with the major advisor and graduate advisory committee. Coursework disciplines include, but are not limited to
    - Agricultural and Natural Resources (AGNR),
    - Animal Science (ANSC),
    - Biochemistry and Cellular and Molecular Biology (BCMB),
    - Biomedical Engineering (BME),
    - Biosystems Engineering (BSE),
    - Business Analytics (BZAN),
    - Comparative and Experimental Medicine (CEM),
    - Electrical and Computer Engineering (ECE),
    - Ecology and Evolutionary Biology (EEB),
    - Entomology and Plant Pathology (EPP),
    - Environmental Engineering (ENVE),
    - Environmental and Soil Sciences (ESS),
    - Food Science (FDSC),
    - Forestry (FORS, FWF),
    - Geography (GEOG),
    - Life Sciences (LFSC),
    - Microbiology (MICR),
    - Plant Sciences (PLSC),
    - Statistics (STAT), and
    - Wildlife and Fisheries Science (WFS).
- Course(s) in quantitative analysis of biological data are highly recommended, but not required. Recommended courses include ANSC 571, EEB 560, FWF 525, PLSC 561, PLSC 571, STAT 531, STAT 532, STAT 577, and STAT 579.

Additional Course Options:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course Requirements:

- The student and the major advisor will select a minimum of two additional faculty members from the University of Tennessee, who hold the rank of assistant professor

or above, to serve on the student's project advisory committee. The responsibility of this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The committee should be formed during the first semester of the student's program.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their M.S. program.
- Students are expected to prepare a detailed written proposal prior to initiation of the project/ practicum.
- A final report summarizing results of the project/practicum is required.
- Final oral examination on the project and coursework are required by the Graduate School, and must be passed to the satisfaction of the project advisory committee after the project has been completed.
- An oral departmental seminar presentation on the results of the project/ practicum is required.

M.S. Student Program Checklist

***Note**: Newest Version of All Forms Mentioned Below Can Be Found at the Graduate School Forms Website - http://gradschool.utk.edu/forms-central/.*

Always invite Department Head and/or Director of Graduate Studies to Committee Meetings. This is especially important if you foresee conflict.

<u>First Semester</u>

1. Contact major advisor

   ***NOTE:** International students need to visit the Student Health Services and the Center for Global Engagement (CGE) before reporting to the department.*

2. Complete departmental paperwork

   - Bring Passport or driver's license and Social Security card; International students must bring visa paperwork (I-20).

- Bring Bank account number and Bank routing number. Assistantships are paid via direct deposit to your bank account.

3. Register for courses prior to your first semester. All students are required to enroll in courses their first semester, regardless of whether the first semester is spring, summer, or fall.
4. Develop first semester's coursework (including deficiencies and prerequisites)
5. Attend graduate student orientation provided by the Graduate School (https://gradschool.utk.edu/graduate-student-life/graduate-student-orientations/) and EPP.
6. Form a graduate advisory committee (preferably before first semester final exams)
   - Consult with the Graduate Director to ensure that the composition of your committee meets the criteria of the Graduate School.
   - Submit the names of your committee members to the Director of Graduate Studies.
7. Schedule and convene your first committee meeting
   - Develop a plan, approved by your graduate advisory committee, for remaining coursework.
   - Obtain approval of the proposed research project from your committee.
8. Complete required trainings

Second Semester

9. Schedule and convene committee meeting to present your academic and research progress
10. Schedule and present M.S. proposal seminar (EPP 640, 1 credit hour)

Summer Session

11. M.S. students should concentrate on their research project, but they are required to take courses if this is their first semester.
12. If this is not your first semester, enrollment in classes in your first summer session is not required unless there are courses of interest on your plan of study.

Interim Semesters (for fully employed students who are taking less hours per semester)

13. Schedule and convene a committee meeting each semester to discuss academic and research progress

Third Semester (or semester preceding graduation)

14. Schedule and convene a committee meeting to discuss academic and research progress.
15. Submit the Admission to Candidacy Application.
16. Attend thesis workshop (thesis option students only)
17. Submit Graduation Application.

Final Semester of Graduation

18. Give final exit seminar. ***BUT do not enroll in EPP 640 to give your final thesis defense seminar.***
19. Schedule Master's thesis defense or project /practicum defense (non-thesis).
20. Meet with Thesis/Dissertation Consultant for preliminary review of your thesis (thesis option only).
21. Submit thesis to graduate advisory committee 2 weeks prior to defense and to department head 48 hours prior to final exam. Non-thesis option students submit project report.
22. Defend your thesis (oral examination) and Submit Report of Final Examination (Pass/Fail) Form to the Graduate School. Non-thesis students take oral and written exam on research project and course work.
23. Submit dissertation to iThenticate and submit approved form to the Graduate School. Non-thesis students use iThenticate to check project report, but form is not submitted to the Graduate School.
24. Submit final thesis (approved & accepted by Thesis/Dissertation Consultant) (thesis option only).
25. In consultation with major advisor, decide whether your thesis should receive an embargo (thesis option only).
26. Pay graduation fee at Bursar's office.
27. Graduate Hooding Ceremony (optional).

Post-Graduation

28. Schedule an exit interview with Department Head.
29. Return keys, computer or any other UT-owned items used during your studies.

Ph.D. in Entomology, Plant Pathology, and Nematology

The Ph.D. degree is evidence of exceptional scholarly attainment and demonstrated capacity in original investigation. Requirements for the degree include courses, examinations, and a period of resident study, as well as arrangements that guarantee sustained, systematic study and superior competency in the chosen concentration. The program of study as listed by the student on the Admission to Candidacy form must be approved by the doctoral committee and the Director of Graduate Studies before submission to the Graduate School.

A candidate for doctoral degree must complete a minimum of 24 hours of graduate coursework ***beyond*** the master's degree, which is a prerequisite for entry into most doctoral programs. The Department of Entomology and Plant Pathology does not ordinarily admit Ph.D. students who have not earned an M.S. degree with a thesis, although there will be exceptions. A student entering the doctoral program without an M.S. degree must complete a minimum of 48 hours of graduate coursework beyond the baccalaureate degree. A minimum of 12 of the 24 hours, or 30 of the 48 hours, must be graded A-F. A minimum of 6 hours of the student's coursework must be University of Tennessee courses at the 600 level, exclusive of dissertation (EPP 600).

Ph.D. students are required to present two seminars. The first seminar is the only one required to be taken for credit (1 hour of EPP 640) and is the research proposal seminar. The second is an exit seminar based on the student's dissertation research. In addition, 24 hours of EPP 600 Doctoral Research and Dissertation are required. Written and Oral Comprehensive Exams, as well as the Defense of Dissertation Exam are required of Ph.D. students in the EPPN program. If agreed upon by the graduate student, major advisor, and all members of the graduate committee, the Written Comprehensive exam may consist of a grant proposal.

Requirements for Ph.D. Concentrations

Bioinformatics, Genomics, and Molecular Interactions Concentration

Bioinformatics is the retrieval and analysis of biochemical and biological data using mathematics and computer science. Students concentrating in bioinformatics, genomics, and molecular interactions can study biological sequencing and analysis of DNA and RNA, epigenetics, metagenomics and metatranscriptomics, phylogenomics, genotyping by sequencing, differential gene expression, population genomics, gene interactions and/or proteomics. A student with prior coursework and/or experience may petition the EPP faculty for a course exemption(s). An exemption may be granted by majority vote based on documentary evidence or written and/or oral exams.

Degree Requirements

Credit Hours Required: ***48 beyond the M.S. degree or 72 beyond the baccalaureate degree***

Required Courses:

- A candidate for the doctoral degree must complete a minimum of 24 credit hours of graduate course work numbered 503 or higher beyond the M.S. degree.
- Candidates not having an M.S. degree must complete a minimum of 48 credit hours of graduate course work beyond the baccalaureate degree, 24 credit hours of which must be numbered 503 or higher.
- A minimum of 12 of the 24 credit hours, or 30 of the 48 credit hours, must be graded A-F.
- At least 9 credit hours of the student's course work must be from outside the Entomology and Plant Pathology curriculum
- A minimum of 6 credit hours of courses numbered 601 or higher must be taken at the University of Tennessee, excluding EPP 603.
- A student with prior course work and/or experience may petition the EPP faculty for an exemption(s). An exemption may be granted by majority vote based on documentary evidence or written and/or oral exams.
- EPP 570 Colloquium, 1 credit hour
- EPP 600 Doctoral Research and Dissertation, 24 credit hours
- EPP 622 Bioinformatics Applications, 3 credit hours
- EPP 640 Seminar, 1 credit hour
- EPP 675 Scientific Writing and Grantsmanship, 3 credit hours
- A minimum of 6 credit hours from entomology and plant pathology (EPP) courses, including EPP 505, EPP 508, EPP 509, EPP 512, EPP 514, EPP 516, EPP 520, EPP

521, EPP 523, EPP 530, EPP 531, EPP 548, EPP 561, EPP 552, EPP 575, EPP 560, EPP 633 and EPP 634.

- A minimum of 7 credit hours of elective coursework from within or outside EPP; the list of coursework outside EPP is not all-inclusive, as the course needs of individual student programs vary. Recommended courses include BCMB 510, BCMB 511, BCMB 512, BCMB 517, BCMB 523, CEM 541, COSC 594 (section titled Bioinformatics), CBE 672, ENVE 561, ENVE 655, GEOL 590, LFSC 507, LFSC 520, LFSC 521, MICR 520, MICR 540 / LFSC 517, MICR 650, PLSC 552, PLSC 553, PLSC 554, and PLSC 653. In addition, special topics on bioinformatics are periodically offered in BCMB 520, GEOL 590, LFSC 595, and LFSC 695.
- Advanced quantitative methods course, 3 credit hours, is required. Recommended courses include COSC 505, COSC 526, COSC 565, EEB 560, EPP 633, PLSC 561, STAT 577, and STAT 579.

Additional Course Options:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course Requirements:

- The student and the major advisor will select three members to serve on the student's doctoral committee, with least two faculty members from the University of Tennessee, holding the rank of assistant professor or above. The responsibility of this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The Dean of the Graduate School must approve the major professor and committee members.
    - At least one member of the committee must be from outside the department.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
    - The doctoral committee must be formalized by the end of the second semester of graduate study.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their Ph.D. program.

- Satisfactory preparation of a written dissertation proposal to the student's committee is required. The dissertation proposal must be completed during the first two semesters of graduate study and before enrollment in EPP 600.

  Both written and oral sections of the comprehensive examination must be passed. The written comprehensive exam can take the form of an examination or a grant proposal. Candidates will be tested on their knowledge of their proposed dissertation and related fields.
- Satisfactory preparation of a written dissertation and an oral defense to the student's doctoral committee are required.
- An oral final examination that covers the dissertation and coursework is required and must be passed to the satisfaction of the student's doctoral committee after the dissertation has been completed.
- An oral departmental seminar presentation on the dissertation is required.

Organismal Biology, Ecology, and Systematics Concentration

Organismal biology, ecology, and systematics includes the study of the life history of an organism including its interactions within communities and with the environment, as well as classification, taxonomy, and nomenclature. Topics may include biology and ecology of plant associated insects, nematodes and microbes; plant, human and animal disease vectors; arthropods associated with humans and their structures; disease epidemiology; host-pathogen, host-parasite, and host-parasitoid interactions; biology of biological control agents; entomopathogenic bacteria, fungi and nematodes; plant, insect, and nematode microbial symbioses; nematodes and insects as environmental bioindicators; pollinator biology and ecology, and forensic entomology.

Degree Requirements

Credit Hours Required: ***48 beyond the M.S. degree or 72 beyond the baccalaureate degree***

Required Courses:

- A candidate for the doctoral degree must complete a minimum of 24 credit hours of graduate course work numbered 503 or higher beyond the M.S. degree.
- Candidates not having an M.S. degree must complete a minimum of 48 credit hours of graduate course work beyond the baccalaureate degree, 24 credit hours of which must be numbered 503 or higher.
- A minimum of 12 of the 24 credit hours, or 30 of the 48 credit hours, must be graded A-F.
- At least 9 credit hours of the student's course work must be from outside the Entomology and Plant Pathology curriculum
- A minimum of 6 credit hours of courses numbered 601 or higher must be taken at the University of Tennessee, excluding EPP 603.
- A student with prior course work and/or experience may petition the EPP faculty for an exemption(s). An exemption may be granted by majority vote based on documentary evidence or written and/or oral exams.
- EPP 570 Colloquium, 1 credit hour
- EPP 600 Doctoral Research and Dissertation, 24 credit hours

- EPP 640 Seminar, 1 credit hour
- EPP 675 Scientific Writing and Grantsmanship, 3 credit hours
- A minimum of 9 credit hours selected from EPP courses, including EPP 505, EPP 514, EPP 516, EPP 520, EPP 521, EPP 523, EPP 530, EPP 548, EPP 552, and EPP 561.
- A minimum of 7 credit hours of elective coursework selected from within or outside EPP; the list of coursework outside EPP is not all-inclusive, as the course needs of individual student programs vary. Recommended courses include ANSC 571 / PLSC 571, BSE 555, BZAN 553 / STAT 573, CEM 504, CEM 507, CEM 601, CEM 602, PLSC 561, EEB 509, EEB 560, EEB 583, EPP 512, ESS 516, STAT 578, STAT 579, WFS 501, and WFS 545.
- Advanced quantitative methods course, 3 credit hours. Recommended courses include ANSC 572, EEB 560, FWF 525, PLSC 561, PLSC 571, STAT 531, STAT 532, STAT 577, and STAT 579.

Additional Course Options:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course Requirements:

- The student and the major advisor will select three members to serve on the student's doctoral committee, with least two faculty members from the University of Tennessee, holding the rank of assistant professor or above. The responsibility of this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The Dean of the Graduate School must approve the major professor and committee members.
    - At least one member of the committee must be from outside the department.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
    - The doctoral committee must be formalized by the end of the second semester of graduate study.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their Ph.D. program.

- Satisfactory preparation of a written dissertation proposal to the student's committee is required. The dissertation proposal must be completed during the first two semesters of graduate study and before enrollment in EPP 600.
- Both written and oral sections of the comprehensive examination must be passed. The written comprehensive exam can take the form of an examination or a grant proposal. Candidates will be tested on their knowledge of their proposed dissertation and related fields.
- Satisfactory preparation of a written dissertation and an oral defense to the student's doctoral committee are required.
- An oral final examination that covers the dissertation and coursework is required and must be passed to the satisfaction of the student's doctoral committee after the dissertation has been completed.
- An oral departmental seminar presentation on the dissertation is required.

Sustainable Disease and Integrated Pest Management Systems Concentration

Sustainable disease and integrated pest management (SDIPM) systems provide economic means to reduce pest and disease losses while minimizing negative impacts on the environment. As the global population is expected to reach nine billion people by 2050, production systems will have to become more efficient to produce the quality and quantity of food needed to supply the world. SDIPM systems can provide the solutions to positively impact food production and meet the increased global demand. SDIPM systems can also improve plant and animal health in forests, parks, landscapes, and other natural systems and enhance quality of life by balancing and reducing risks from pests and pesticides in residences and other human structures. These systems incorporate many disciplines, including entomology, nematology, plant pathology, weed science, animal science, veterinary medicine, public health, and food science.

Degree Requirements

Credit Hours Required: ***48 beyond the M.S. degree or 72 beyond the baccalaureate degree***

Required Courses:

- A candidate for the doctoral degree must complete a minimum of 24 credit hours of graduate course work numbered 503 or higher beyond the master's degree.
- Candidates not having a master's degree must complete a minimum of 48 credit hours of graduate course work beyond the baccalaureate degree, 24 credit hours of which must be numbered 503 or higher.
- A minimum of 12 of the 24 credit hours, or 30 of the 48 credit hours, must be graded A-F.
- At least 9 credit hours of the student's course work must be from outside the Entomology and Plant Pathology curriculum
- A minimum of 6 credit hours of courses numbered 601 or higher must be taken at the University of Tennessee, excluding EPP 603.
- A student with prior course work and/or experience may petition the EPP faculty for an exemption(s). An exemption may be granted by majority vote based on documentary evidence or written and/or oral exams.

- EPP 570 Colloquium, 1 credit hour
- EPP 600 Doctoral Research and Dissertation, 24 credit hours
- EPP 630 Advanced Integrated Pest and Pathogen Management, 3 credit hours
- EPP 640 Seminar, 1 credit hour
- EPP 675 Scientific Writing and Grantsmanship, 3 credit hours
- A minimum of 6 credit hours selected from EPP courses, including EPP 505, EPP 508, EPP 509, EPP 512, EPP 514, EPP 516, EPP 520, EPP 521, EPP 523, EPP 525, and EPP 530.
- A minimum of 7 credit hours of elective coursework selected from within or outside EPP; examples are provided below. This list is not all-inclusive, as the course needs of individual student programs vary. Recommended courses include ANSC 571/ PLSC 571, BSE 555, PLSC 515, PLSC 552, and PLSC 634.
- Advanced quantitative methods course, 3 credit hours. Recommended courses include ANSC 571, EEB 560, FWF 525, PLSC 561, PLSC 571, STAT 531, STAT 532, STAT 577, and STAT 579.

Additional Course Options:

- A minor is not required but may be selected at the option of the student. A minor includes 6 (minimum) to 12 (maximum) credit hours of graduate-level credit in the minor department.

Non-course Requirements:

- The student and the major advisor will select a minimum of three additional faculty members holding the rank of assistant professor or above, to serve on the student's doctoral committee. The responsibility of this committee is to assist the student in planning a program of study and carrying out research, and to assure fulfillment of the degree requirements.
    - The Dean of the Graduate School must approve the major professor and committee members.
    - At least one member of the committee must be from outside the department.
    - If the student has a minor, one member of the committee must be a faculty member from the minor department to assist in designating courses required for the minor.
    - The doctoral committee must be formalized by the end of the second semester of graduate study.
- Research Ethics training is required, which may be achieved through (CITI RCR) training, as evidenced by presenting a valid CITI RCR certificate to the EPP Director of Graduate Studies or their designee.
- Environmental Health and Safety training is required. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Computer Security Awareness training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.
- Title IX Mandatory Reporter training is required annually. Evidence (certificates or test scores) of this training must be provided to the EPP Director of Graduate Studies or their designee.

- Students are expected to attend (in person or online) seminar (EPP 640) each academic semester of their Ph.D. program.
- Satisfactory preparation of a written dissertation proposal to the student's committee is required. The dissertation proposal must be completed during the first two semesters of graduate study and before enrollment in EPP 600.
- Both written and oral sections of the comprehensive examination must be passed. The written comprehensive exam can take the form of an examination or a grant proposal. Candidates will be tested on their knowledge of their proposed dissertation and related fields.
- Satisfactory preparation of a written dissertation and an oral defense to the student's doctoral committee are required.
- An oral final examination that covers the dissertation and coursework is required and must be passed to the satisfaction of the student's doctoral committee after the dissertation has been completed.
- An oral departmental seminar presentation on the dissertation is required.

Ph.D. Student Program Checklist

***Note**: Newest Version of All Forms Mentioned Below Can Be Found at the Graduate School Forms Website - http://gradschool.utk.edu/forms-central/.*

Always invite Department Head and/or Director of Graduate Studies to Committee Meetings. This is especially important if you foresee conflict.

First Semester

1. Contact major advisor

   ***NOTE:** International students need to visit the student health services and the Center for Global Engagement (CGE) before reporting to the department*

2. Complete departmental paperwork
   - Bring Passport or driver's license and Social Security card. International students must bring visa paperwork (I-20)
   - Bring Bank account number and Bank routing number. Assistantship stipends are paid via direct deposit to your bank account.
3. Register for courses prior to your first semester. All students are required to enroll in courses their first semester, regardless of whether the first semester is spring, summer, or fall.
4. Develop first semester's coursework (including deficiencies and prerequisites)
5. Attend graduate student orientations provided by the Graduate School (https://gradschool.utk.edu/graduate-student-life/graduate-student-orientations/) and EPP.
6. Form a graduate advisory committee (preferably before first semester final exams)
   - Consult with the Graduate Director to ensure that the composition of your committee meets the criteria of the Graduate School

- Submit Graduate Student Committee form to Department Head for signature and deliver to the Graduate School.

7. Schedule and convene your first committee meeting
   - Develop a plan, approved by your graduate advisory committee, for remaining coursework.
   - Obtain approval of the proposed research project from your committee.
8. Complete required trainings.

Second Semester

9. Schedule and convene committee meeting to discuss academic and research progress
10. Schedule and present Ph.D. research proposal seminar (EPP 640, 1 credit hour). This can be done during your third academic semester.

Interim Semesters

11. Schedule and convene committee meetings to discuss academic and research progress

Semester Prior to Intended Graduation

12. Schedule and convene a committee meeting to discuss academic and research progress
13. Attend Dissertation Workshop
14. Complete oral and written Comprehensive Exams, report results on the Admission to Candidacy form, and submit to the Graduate School
15. Submit Graduation Application

Final Semester of Graduation

15. Give final exit seminar (EPP 640, 1 credit hour). ***BUT do not enroll in EPP 640 to give your final dissertation defense seminar.***
16. Meet with Thesis/Dissertation Consultant for preliminary review of your dissertation.
17. Submit Scheduling of Defense of Dissertation Form.
18. Submit dissertation to graduate advisory committee at least 2 weeks prior to scheduled defense date and to department head 48 hours prior to scheduled defense date
19. Defend your dissertation (oral examination)
20. Submit report of Final Examination (Pass/Fail) Form to the Graduate School
21. Submit dissertation to iThenticate and submit form to the Graduate School
22. Submit final dissertation (approved & accepted by Thesis/Dissertation Consultant)
23. In consultation with major advisor, decide whether your dissertation should receive an embargo.
24. Pay graduation fee at Bursar's office
25. Graduate Hooding Ceremony (optional)

Post-Graduation

26. Schedule an exit interview with Department Head
27. Return keys, computer or any other UT-owned items used during your studies

GRADUATE MINORS IN ENTOMOLOGY & PLANT PATHOLOGY

The Department of Entomology and Plant Pathology offers four different graduate minors. Graduate students who are in rolled in an EPP concentration that includes Bioinformatics are not eligible to enroll in the Bioinformatics: Agriculture and natural Resources minor. For students outside EPP, the student's graduate advisory committee must include a member of the faculty from the Department of Entomology and Plant Pathology who will be responsible for designating courses required for the minor.

A minor in **Bioinformatics: Agriculture and Natural Resources** requires 9 credit hours of bioinformatics-oriented 500-level courses or above (excluding EPP 500, EPP 502, EPP 503, EPP 600, EPP 603, EPP 640, and EPP 675).

A minor in **Entomology and Plant Pathology** requires 9 credit hours of course work in the department with at least 6 credit hours in 500-level courses and above (excluding EPP 500, EPP 502, EPP 503, EPP 600, EPP 603, EPP 640, and EPP 675).

An **Entomology** minor requires 9 credit hours of entomology-oriented 500-level or above courses in the department -(excluding EPP 500, EPP 502, EPP 503, EPP 600, EPP 603, EPP 640, and EPP 675).

A minor in **Plant Pathology** requires 9 credit hours of plant pathology-oriented 500-level coursework or above in the department (excluding EPP 500, EPP 503, EPP 600, EPP 603, EPP 640, and EPP 675).

GRADUATE MINOR IN STATISTICS

The department also participates in a program designed to give EPP graduate students the opportunity to pursue a minor in statistics. See the Intercollegiate Graduate Statistics and Data Science Program (IGSDSP) for a description of the program in the Graduate Catalog and the IGSDSP website for approved courses. Please review the currently approved list of faculty who can serve on your graduate advisory committee as a representative of the IGSDSP if you select this program as a minor.

COMPOSITION OF GRADUATE ADVISORY COMMITTEE FOR M.S. STUDENTS

1. Major Advisor
2. Two other faculty members (at the rank of assistant professor or above)
   - If the student has a minor, one member of the committee must be from the minor department
   - Two members of the M.S. committee must be from EPP, but it is recommended that one member of the committee be from outside the department or from one of the other departmental disciplines. For example, if you are in plant pathology, another committee member may be from bioinformatics.

COMPOSITION OF GRADUATE ADVISORY COMMITTEE FOR PH.D. STUDENTS

1. Major Advisor
2. Three Faculty members (at the rank of assistant professor or above)
    - Three of these four faculty members must be approved by the Graduate School to direct doctoral research.
    - At least one member of the Ph.D. committee must be from an academic unit other than the student's major field.
    - Ph.D. students are encouraged where appropriate to seek a fifth member in the field of specialization from outside the university to serve on their dissertation committee.

ENTOMOLOGY AND PLANT PATHOLOGY GRADUATE COURSE DESCRIPTIONS

EPP 410 - Diseases and Insects of Ornamental Plants (M.S. credit only)
3 Credit Hours Lecture
Symptoms, identification, and management of diseases and insect pests that affect plants in greenhouse, nursery, and landscape environments.
Instructors: TBD and J. Grant

EPP 411 - Forest Insects and Diseases (M.S. credit only)
3 Credit Hours Lecture
Insects and pathogens associated with trees and shrubs will be identified and their impacts on host plants evaluated.
Instructors: D. Hadziabdic and TBD

EPP 425 – Medical and Veterinary Entomology (M.S. credit only)
3 Credit Hours Lecture and Lab
Identification, biology, and control of arthropod parasites of humans and animals. The course focuses on arthropods and their biology, life histories, habitats, hosts, and options for management. Review and discussion of sampling/monitoring methods and decision-making guidelines to managing vector-borne diseases also will be addressed. Graduate students will be required to complete an in-depth research project that requires manuscript submission for publication.
Instructor: R. Trout Fryxell

EPP 485 – Forensic Entomology and Crime Scene Investigations (M.S. credit only)
3 Credit Hours Lecture and Lab
Objectively observe, record, and determine how insects and other arthropods contribute to the overall analysis of a death event or crime scene, e.g., homicide, child/elderly neglect investigations, food contamination, and other civil and criminal applications. Learn how to collect, preserve, and identify forensically important arthropods as well as estimate post-mortem interval. Learn how to prepare written reports of investigation, write an affidavit, learn the basics of crime scene processing, identify, and classify forensically important insects, and present findings in a mock courtroom.
Contact Hour Distribution: 2 hours lecture and 1 lab. Prerequisite(s): 12 hours of biology and/or anthropology, or consent of instructor.
Instructors: E. Bernard and G. Phillips

EPP 500 – Thesis
1-15 Credit Hours
Grading Restriction: P/NP only. Repeatability: May be repeated. Max. 15 hours; Credit Level Restriction: Graduate credit only. Registration Restriction: M.S.-Entomology & Plant Pathology

EPP 502 - Registration for Use of Facilities
1-15 credit hours. Required for students not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. *Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated; Credit Restriction: May not be used toward degree requirements. Credit Level Restriction: Graduate credit only; Registration Restriction(s): Minimum student level – graduate.*

EPP 503 – Non-Thesis Project / Practicum
1-4 Credit Hours
Field, laboratory, or library project under the supervision of a faculty member.
Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 4 hours. Registration Restriction(s): Available only to: Entomology and Plant Pathology major, M.S., in the non-thesis option.

EPP 505 – Mycology
3 Credit Hours Lecture
Survey of the fungal kingdom and traditional allies in the context of phyla and taxonomic classes. Topics include systematics, biology, reproduction, structure-function, physiology, genetics, mycotic diseases of animals and plants, mycotoxins, hallucinogens, and poisons, insect-fungal associations, composting, edible mushrooms, industrial uses of fungi, fermented food and beverages, and fungal ecology.
Instructor: B. Ownley

EPP 508 - Plant Health Diagnostics – Field Crops
3 Credit Hours - One-week summer workshop offered in even years at the West TN Research and Education Center in Jackson, TN. Practical experience diagnosing plant health problems caused by insects, nematodes, microbial pathogens, and abiotic stresses of field crops. Students will use modern plant health diagnostics tools and techniques, both in the laboratory and field, to diagnose plant health problems of agronomic row crops.
Instructors: H. Kelly and S. Brown

EPP 509 - Plant Health Diagnostics – Horticulture and Specialty Crops
3 Credit Hours **-** One-week summer workshop offered in odd years at the Soil, Plant, and Pest Center in Nashville, TN. Practical experience diagnosing plant health problems caused by insects, nematodes, microbial pathogens, and abiotic stresses. Students will use modern plant health diagnostics tools and techniques both in the laboratory and field to diagnose health problems of horticultural crops, orchard, and specialty crops in fields, orchards, forests, and urban landscapes.
Instructor: TBD

EPP 512 - Soilborne Plant Pathogens
3 Credit Hours Lecture
Causal agents; host-parasite-soil environment interactions; epidemiology; detection and identification of soilborne plant pathogens; biological, cultural, and chemical control.

Instructor: B. Ownley

EPP 516 - Biopesticides
3 Credit Hours Lecture
Plant protection; natural products; international issues in crop protection. The history of biopesticides, their modes of actions, challenges, and trends in biopesticide development, and biopesticides in integrated pest management systems will be discussed.
Instructor: K. Gwinn

EPP 520 – Nematology
3 Credit Hours Lecture and Lab
Survey of the phylum Nematoda, including free-living, insect-parasitic, vertebrate-parasitic, and plant-parasitic groups. Emphases will be on identification, collecting methodologies, economic importance, and applications to pest management and soil health. *Recommended Background: 8 hours of biology.*
Instructor: E. Bernard

EPP 521 - Plant Virology
3 Credit Hours Lecture and Lab
Symptomatology, epidemiology, and management of virus infection; structure, morphology, replications, transmission, purification, characterization, and classification of plant viruses; serology; plant pathogenic viroids, mycoplasmas and spiroplasmas. *Recommended background: EPP 313 or introductory plant pathology*
Instructor: R. Hajimorad

EPP 523 - Field Crop and Vegetable Entomology
3 Credit Hours Lecture and Lab
Identification, biology, ecology, and management of insects affecting field crops, commercial vegetables, and home garden crops.
Recommended Background: EPP 321 or basic entomology course.
Instructor: J. Grant

EPP 530 - Integrated Pest Management
3 Credit Hours Lecture
Principles and application of biological, cultural, genetic, behavioral, and chemical methods of control to maintain pest populations below economic threshold levels.
Cross Listed: (Same as PLSC 530). Recommend Background: EPP 321 or consent of instructor.
Instructor: J. Grant

EPP 531 - Special Problems in Entomology, Nematology and Plant Pathology
Credit Hours 1-3
Comprehensive individual study of current problems.
Repeatability: May be repeated. Maximum 9 hours.
Instructor: varies

EPP 531 – Writing Essentials
1 Credit Hour; Online
Writing Essentials is designed to help you get ideas on finding literature to support your thesis work; practice writing abstracts for presentations, theses, and manuscripts; develop attractive and informative resumes and cover letters; get hints for writing extension, popular

press, and newspaper articles; practice writing a two-page grant proposal to supplement your graduate stipend/research.
Instructor: R.N. Trigiano

EPP 548 - Taxonomy of Adult Insects
4 Credit Hours Lecture and Lab
Classification, phylogeny, and distribution of insects and related arthropods. Lectures on theory and practice of insect systematics and major features of insect evolution. Laboratory practice on methods of collection, preservation, and study of insects, with emphasis on order and family identification of adults. Substantial insect collection, one or more field trips, and a taxonomically oriented project required.
Instructors: J. K. Moulton and E. Bernard

EPP 552 - Insect Morphology
3 Credit Hours Lecture and Lab
Identification of insect structures and relevance of structures to insect development, survival, physiology, and classification.
Instructor: J. K. Moulton

EPP 561 Insect Physiology
3 Credit Hours Lecture
Molecular, cellular, and tissue mechanisms involved in relevant physiological processes in insects, and the evolutionary diversity of these processes among insect taxa. Students will be able to identify and understand emerging areas of research in insect physiology and molecular biology. *Recommended background: Biochemistry, molecular biology, basic cell biology.*
Instructor: J. L. Jurat-Fuentes

EPP 570 Entomology and Plant Pathology Colloquium
1 Credit Hour
Professional development and other essential topics for new Graduate Students, who are enrolled in a graduate academic program in the Department of Entomology and Plant Pathology.
Instructors: B. Ownley and D. Shoemaker

EPP 575 Introduction to RNASeq
1 Credit Hour
Computational analysis of RNASeq data. Students will learn the basics of using a command line interface on UT's Linux-based computational resources to analyze RNASeq data. Basic steps such as quality assessment, read mapping and differential gene expression statistical analysis will be covered.
Instructor: M. Staton

EPP 600 - Doctoral Research and Dissertation
3-15 Credit Hours
Grading Restriction: P/NP only Repeatability: May be repeated. Registration Restriction(s): Doctor of Philosophy - Entomology, Plant Pathology, and Nematology major. Ph.D. students only.
Instructors: varies

EPP 602 - Advanced Topics in Entomology
1-3 Credit Hours

Morphology, systematics, physiology, ecology and genetics of arthropods, apiculture, medical and veterinary entomology, insect biodiversity, insect pathology.
Repeatability: May be repeated. Maximum 12 hours. Registration Restriction(s): Minimum student level – graduate.
Instructors: varies

EPP - 603 Research Planning
1-15 Credit Hours
Preliminary research and investigation of dissertation research topic.
Grading Restriction: P/NP only Repeatability: May be repeated. Maximum 15 credit hours
Instructors: varies

EPP 604 - Advanced Topics in Plant Pathology
1-3 Credit Hours
Biological control, disease diagnosis and management, epidemiology, fungal plant pathogens, integrated pest management, molecular plant-microbe interactions, nematology, plant pathogenesis, plant pathogenic bacteria, soil and seed-borne pathogens, and virology.
Repeatability: May be repeated. Maximum 12 hours. Registration Restriction(s): Minimum student level – graduate. Instructors: varies

EPP 604 – Statistical Genetics and Genomics Lab
1 Credit Hour
This course offers experiential learning exercises to reinforce the lectures in EPP 633.
Instructor: B. Olukolu

EPP 606 - Advanced Topics in Nematology
1-3 Credit Hours
Specialized instruction on systematics, physiology, ecology, genetics, genomics, and evolution of nematodes, plant, insect, mollusk, medical and veterinary nematology, nematode biodiversity, entomopathogenic nematodes, nematode-microbe interactions, plant-nematode interactions, and biological control.
Repeatability: May be repeated. Maximum 12 hours. Registration Restriction(s): Minimum student level – graduate.
Instructors: varies

EPP 622 – Bioinformatics Applications
3 Credit Hours Lecture and Lab
Fundamental bioinformatics concepts, principles, and techniques with a focus on the application of bioinformatics to problems in agriculture. Laboratory practical will be taught within a LINUX computational environment where students will gain basic skills in bash and python scripting and construction open source-software based workflows to analyze genomic data. *Prerequisite(s): Life Sciences 520 or introductory genetics course. Registration Restriction(s): minimum student level – graduate.*
Instructor: M. Staton

EPP 630 - Advanced Integrated Pest and Pathogen Management
3 Credit Hours Lecture
Use of principles and concepts of IPM to focus on real-life, practical applications of IPM programs. This course builds on EPP 530/PLS 530: Integrated Pest Management [IPM]),

where students are introduced to principles and concepts of pest and plant disease management and investigate its importance as an environmentally sound practice based on economic, ecological, and sociological consequences. EPP 630 extends these concepts to focus on real-life, practical applications of IPM programs. The course will have a seminar-type format with presentations, guest lecturers, and field trips to both regulatory centers and businesses that have implemented IPM programs.
Prerequisite: EPP 530/PLS 530.
Instructor: J. Grant

EPP 633 – Statistical Genetics and Genomics
3 Credit Hours Lecture
Statistical concepts for analysis of genetic and genomics data using classical and state-of-the-art analytical methods. Basic UNIX scripting and R programming, as well as fundamental genetic and -omics principles will be taught. Class activities will include a combination of lectures, review of literature, and hands-on experience with real data sets. The goal is to understand basic analytical concepts to equip students for independent learning. *Registration Restriction(s): minimum student level – graduate.*
Instructor: B. Olukolu

EPP 634 – Statistical Genetics and Genomics Laboratory
1 Credit Hour
Experiential learning of Basic UNIX scripting and R programming and analysis of real data sets to equip students for independent learning. Laboratory topics include data wrangling and visualization, Quality filtering NGS data, haplotype-based variant calling/filtering, metagenomic profiling, genetic linkage map construction, QTL analysis, genome-wide association analysis (GWAS), genomic prediction, and meta-analysis (phenotypic, genomic, and metagenomic data. *Registration Restriction(s): minimum student level – graduate.*
Instructor: B. Olukolu

EPP 640 – Seminar
1 Credit Hour
Presentation of research proposals and research (dissertation or thesis) seminars by students. Presentations on current topics by outside speakers
Registration Restriction(s): Minimum student level – graduate.
Grading Restriction: Satisfactory/No Credit grading only.
Instructor: K. Lamour

EPP 675 - Scientific Writing and Grantsmanship
3 Credit Hours Lecture
Preparation of scientific evidence for the thesis or dissertation in scientific journals, parts of the scientific paper, graphical and tabular presentation of data, sources of funding to support research, authoring research grants, the editorial process, elements of style, and ethics.
Registration Restriction(s): Minimum student level – graduate.
Instructors: R. Trigiano and TBD

ENTOMOLOGY & PLANT PATHOLOGY GRADUATE COURSE SCHEDULE					
Course	**FALL Odd years**	**SPRING Even years**	**Summer**	**FALL Even years**	**SPRING Odd years**
410		410: Insects and Diseases of Ornamental Plants			
411	411: Forest Insects and Diseases			411: Forest Insects and Diseases	
425		425: Medical and Veterinary Entomology			
485			485: Forensic Entomology and Crime Scene Investigations		
500	500: Thesis	500: Thesis	500: Thesis	500: Thesis	500: Thesis
502	EPP 502: Registration for Use of Facilities	EPP 502: Registration for Use of Facilities	EPP 502: Registration for Use of Facilities	502: Registration for Use of Facilities	EPP 502: Registration for Use of Facilities
503	503: Non-thesis Project/Practicum	503: Non-thesis Project/Practicum	503: Non-thesis Project/Practicum	503: Non-thesis Project/Practicum	503: Non-thesis Project/Practicum
505				505: Mycology	
508			508: Plant Health Diagnostics - Field Crops		
509			509: Plant Health Diagnostics - Horticulture and Specialty Crops		
512					512: Soilborne Plant Pathogens
516		516: Biopesticides			
520					520: Nematology
521		521: Plant Virology			
523	523: Field Crop & Vegetable Insects				
530				530: Integrated Pest Management	
531	531: Special Problems in Entomology & Plant Pathology	531: Special Problems in Entomology & Plant Pathology	531: Special Problems in Entomology & Plant Pathology	531: Special Problems in Entomology & Plant Pathology	531: Special Problems in Entomology & Plant Pathology

Course	FALL Odd years	SPRING Even years	Summer	FALL Even years	SPRING Odd years
548	548: Taxonomy of Adult Insects				
552		EPP 552: Insect Morphology			
561					561: Insect Physiology
570	570: EPP Colloquium			570: EPP Colloquium	
575			575: Introduction to RNASeq (odd years)		
600	600: Doctoral Research and Dissertation	600: Doctoral Research and Dissertation	600: Doctoral Research and Dissertation	600: Doctoral Research and Dissertation	600: Doctoral Research and Dissertation
602	602: Advanced Topics in Entomology	602: Advanced Topics in Entomology	602: Advanced Topics in Entomology	602: Advanced Topics in Entomology	602: Advanced Topics in Entomology
603	603: Research Planning	603: Research Planning	603: Research Planning	603: Research Planning	603: Research Planning
604	604: Advanced Topics in Plant Pathology	604: Advanced Topics in Plant Pathology	604: Advanced Topics in Plant Pathology	604: Advanced Topics in Plant Pathology	604: Advanced Topics in Plant Pathology
606	606: Advanced Topics Nematology	606: Advanced Topics Nematology	606: Advanced Topics Nematology	606: Advanced Topics Nematology	606: Advanced Topics Nematology
622				622: Bioinformatics Applications	
630					630: Advanced IPM
633	633: Statistical Genetics and Genomics				
634	634: Statistical Genetics and Genomics Laboratory				
640	640: Seminar	640: Seminar		640: Seminar	640: Seminar
675		675: Scientific Writing & Grantsmanship			675: Scientific Writing & Grantsmanship

Note: This schedule is accurate as of August 2022. Some courses are taught on an as-needed basis and instructors may teach in different semesters than indicated. The on-line timetable will be accurate for the current semester. To confirm the availability of a course in future semesters, check with the instructor. For Special Problem and Advanced Topic courses, check with your major advisor.

SEMINAR (EPP 640)

All students pursuing an M.S. (thesis option) or Ph.D. graduate degree in the Department of Entomology and Plant Pathology are required to register twice for EPP 640. All students pursuing a non-thesis option M.S. are required to register once for EPP 640. Credit is given only in the semester in which the student registers and presents a seminar. The seminar course is not offered in the summer.

All graduate students in the EPP department are required to **attend all seminars whether they are registered for credit**; exceptions include class conflicts, required field research, and scientific meetings. In the case of anticipated conflicts, students should contact the course instructor prior to the seminar. Attendance will be taken at seminar and the results forwarded to the Graduate Studies Committee.

The first seminar is focused on a research proposal and the second on the project (non-thesis), thesis, or dissertation research (exit seminar). Non-thesis M.S. students are not required to give a research proposal.

Research Proposal Seminar –Students should work closely with their major advisors to develop this seminar to present it in their second academic semester.

Exit Seminar – Upon completion (or near completion) of the dissertation research all Ph.D. students must present a dissertation seminar to the department. Students must register for the dissertation seminar prior to graduation in the last regular academic semester of their Ph.D. studies.

Seminar Length

1. **Research Proposal Seminars (M.S. and Ph.D.)** will last for a maximum of 25 min, including 5-10 min for questions and answers.
2. **Exit Seminars (non-thesis M.S., M.S., and Ph.D.)** will last for 50 min, which includes 10 to 15 min for questions and answers.

Abstracts

1. A written abstract and a graphic abstract of the presentation must be delivered by the presenter to the course instructor for distribution to all the departmental faculty, students, and staff. These abstracts are due no later than noon on the **Wednesday (**for Fall semester**)** OR **Tuesday** (for Spring semester) **of the week scheduled for the presentation (i.e., three business days prior to the day of the scheduled seminar**. Students should e-mail the abstracts to Tonya Jelf with a request to forward them to the course instructor for distribution to all faculty, students, and staff. Abstracts that are received after the due date at noon will be considered late and may result in a 5-point grade deduction (1/2 letter grade).
2. Written abstracts are limited to 300 words for all types of M.S. Seminars and 250 words for all types of Ph.D. Seminars. Thus, the word limitation for abstracts is independent of the type of the seminar but differs between an M.S. and a Ph.D. seminar.
3. A graphic abstract summarizes the presentation in a concise, pictorial form and is designed to capture the attention of seminar announcement flyer readers. Keep in mind that the seminar announcement flyer is viewed by a wide range of readers. Provide an image or group of images, with or without a short legible text, which clearly represents

the content of the seminar. Keep the graphic abstract as simple as possible with a high resolution.

4. The quality of the abstract will be evaluated as part of the student's grade**.**

Grading

1. Entomology and Plant Pathology faculty members, students, and staff, and visitors attending the seminars will evaluate students based on criteria listed on the Student Seminar Evaluation Form.
2. Evaluations will be reviewed and discussed by members of the Seminar Committee. The Chair of the Committee will share the audience evaluations with the student**. If interested, students would be able to discuss the seminar with the Chair of the Committee during the week of final exams**. Final grade assignments will be made by the Chair of the Seminar Committee at the end of the semester.
3. Final grades will be based on the following point values:

Title and timeliness of the abstract submission	5
Graphic abstract	5
Quality of the abstracts and adherence to word count limit	10
Moderating a seminar session	5
Attendance at seminars	5
Participation in meetings with invited seminar speakers	5
Seminar Score Sheet Evaluation	65

Format and general instructions

1. PowerPoint is the recommended software program for seminar presentations.
2. Laptop computers to prepare the presentation are available for checkout from the main office (PBB 370), if needed.
3. Seminar will be broadcasted live to participants using Zoom and will be recorded and loaded to a YouTube channel as unlisted, meaning that viewers will need to have received the link to view it. This link will be shared upon request.
4. Please contact Tonya Jelf for any questions or concerns you may have about the electronic technology pertinent to seminar presentation.

Tips for Seminar Preparation and Presentation

Oral delivery

1. Avoid reading your seminar presentation. The idea of giving an extemporaneous seminar frightens some students, but you are a professional and must learn to do this. Seminars are invaluable for experience in presentation without reading.
2. Do not memorize your seminar. Some students are good at memorizing and can recite a seminar presentation perfectly. But these students usually give it in a "singsong" voice and/or use stilted and conventional textbook style language. Notes are acceptable and

desirable if you need them. Your notes can be in the form of words, phrases, or outlines to follow.

3. Describe the information you wish to convey in your own words. However, **avoid slang and poor grammar.**
4. **Practice!!!** You should practice your seminar at least once with your major professor. Practice in the seminar room, if possible.
5. M.S. students who have not given a seminar are advised to present a practice "dry run" of the seminar one week prior to the scheduled seminar to their major professor or co-advisors.
6. Students who have previously given seminars but still think that they need extra help WILL BENEFIT GREATLY benefit from a dry-run with the student's major professor (this is HIGHLY recommended).

Visual Aids

1. **Tabular data**: Do not copy tables from the literature. They usually contain so much material that your audience in the back of the room cannot read the values. Tables containing excessive data are confusing. Re-make the table and include only the results of a few treatments most relevant to the point that you would like to make.
2. **Graphs**: Simple graphs may be copied from publications. Be sure that the lines and values given are large enough to be read from the back of the room. When presenting a graph, always describe it fully, e.g., "this graph illustrates the relationship of temperature (point to horizontal axis) to spore size in *Alternaria solani*. The vertical axis (point) represents spore size in micrometers. As the temperature increased up to X degrees (point), spore size increased, then sharply decreased with further rises in temperature. This experiment was done by A. R. Richie, a USDA plant pathologist at the University of Maryland."
3. **Photographs**: When presenting details of a photograph such as a photomicrograph of hyperplasia in phloem tissue, or markings on the abdomen of an insect, etc., first explain what the photo is about, so that the audience (especially those in other disciplines who see only a mass of jumbled lines and curves) can understand what they are seeing. Then point out details.
4. **Acknowledgement of the source for the original data**. If you are using published data, graphs, or figures from the literature, then you should acknowledge the "original source for such information" in small font directly on that slide! It should be noted that without giving credit to "the original source" on the relevant slides, such a practice is considered plagiarism!

RESEARCH SUPPORT AND WORK

If you received a teaching or research assistantship, you are a part-time employee of state government. All state employees are required to follow state and university regulations involving work schedules and productivity. You must pay attention to all e-mail messages to you from your major advisor, department head, graduate director, faculty, staff, Graduate School, and university officials. You are required to maintain contact with your major advisor,

effectively communicating your whereabouts and any planned or unplanned absence from work.

Assistantships are awarded to the department in lieu of additional technical support. Therefore, GRAs on departmental funding are expected to perform in a support capacity in addition to their own thesis or dissertation research projects. This requires working the hours mutually agreed upon by the GRA and the major advisor. Hours working in the lab on nonacademic projects should not exceed 20 hours. Students shall keep their major professor apprised of any difficulties in meeting their workload or their work in a support capacity.

The work responsibilities for GRAs may include:

1. Student's own thesis or dissertation research, when agreed upon by both student and major advisor, and is to be considered a priority.
2. Major advisor's research.
3. Research of other project leaders in the department.
4. Other duties as assigned.

Termination of Assistantship or Dismissal from the Program

Termination of a GRA's assistantship or dismissal from the program may be recommended by the student's committee for poor scholarship, lack of research progress, or failure to comply with University of Tennessee, Herbert College of Agriculture, or departmental guidelines.

Thesis or Dissertation and iThenticate

It is the responsibility of the student to submit a thesis or dissertation based on substantial original research conducted by the student. The thesis or dissertation must be completed to the satisfaction of the major advisor and graduate advisory committee and the student must furnish an approved electronic copy of the thesis or dissertation (ETD) to the Office of Graduate Student Services, department, major advisor, and each committee member who requests one.

Prior to submission to the Graduate School, all theses and dissertations must be submitted to iThenticate software to check for plagiarism. The major advisor must work with the student to ensure that potential plagiarism is corrected prior to submission to the Graduate School. The major advisor must also sign a form that acknowledges the Thesis/Dissertation has been checked for plagiarism with iThenticate. Access to the UTK sponsored iThenticate software and additional information can be found at: https://gradschool.utk.edu/thesesdissertations/using-ithenticate.

A draft of the thesis or dissertation should be presented to each member of the graduate advisory committee for critique 2 weeks prior to the oral examination. Failure to comply with this time requirement may result in extending the time necessary for completion of the M.S. or Ph.D. program. A copy of the draft is to be made available to the department head, or designee, 24 hours (thesis) or 48 hours (dissertation) prior to the final exam.

ADMISSION TO CANDIDACY - M.S. DEGREE

Admission to Candidacy indicates agreement among the student's committee that the student has demonstrated the ability to do acceptable graduate work and that satisfactory progress has been made toward a degree. This action connotes that all prerequisites to admission have been completed and a program of study has been approved. The Admission to Candidacy Form must be signed by the student, major advisor, graduate advisory committee members, and the EPP Director of Graduate Studies. All courses to be used for the degree must be listed, including transfer coursework. **The form must be submitted to the Graduate School by the deadline, which will occur at the end of the semester preceding the semester in which the student plans to graduate. The form can be revised after the deadline!**

ADMISSION TO CANDIDACY - PH.D. DEGREE

Admission to Candidacy indicates agreement that the student has demonstrated the ability to do acceptable graduate work and that satisfactory progress has been made toward a degree. This action connotes that all prerequisites to admission have been completed and a program of study has been approved. A student may be admitted to candidacy for the doctoral degree after passing the written and oral comprehensive examinations, fulfilling any language requirements, and maintaining at least a 3.0 average in all graduate coursework. Each student is responsible for filing the Admission to Candidacy Form, which lists all graduate courses to be used for the degree, including courses taken at the University of Tennessee, Knoxville, or at another institution prior to admission to the doctoral program. The form must be signed by the student, major advisor, graduate advisory committee members, and the EPP Director of Graduate Studies. **Admission to candidacy must be applied for and approved by the Graduate School at least one full semester prior to the date the degree is to be conferred.**

EXPECTATIONS OF PARTICIPATION IN PROFESSIONAL CONFERENCES

Graduate students are expected to participate in professional scientific society meetings during their program. They are expected to give oral or poster presentations at these meetings. With approval of the major advisor, funding is available through EPP (Thompson Student Development Fund), Herbert College, AgResearch and the Graduate Student Senate to cover the costs of travel to professional conferences. In addition, most professional scientific societies offer opportunities for competitive funding for meeting travel. Students are strongly encouraged to seek these opportunities also.

RESIDENCY (IN-STATE OR OUT-OF-STATE) REQUIREMENTS (FROM GRADUATE CATALOG)

Initial residency classification is determined by a designated staff member from information included on the UT Graduate Application for Admission. Notice of residency classification is included in the email acknowledging receipt of the application for admission. Students who would like their residency classification reviewed may submit a Graduate Application for In-State Classification appeal form to the graduate residency officer listed on the Office of the University Registrar's Student Residency Classification webpage. The appeal form and supporting documentation must be filed no later than the last day of regular, or priority, registration to have the reclassification effective for the semester. Classification will be determined, and the applicant will be notified by email. Additional information regarding the

State of Tennessee regulations for classification may be found under Regulations on the https://registrar.utk.edu/.

RESIDENCE REQUIREMENTS FOR PH.D. STUDENTS (ADMISSION TO CANDIDACY FORM)

All Ph.D. students have a "residence" requirement. Residence is defined as a minimum of two consecutive semesters of full-time (9 credit hours) enrollment or three consecutive semesters of part-time (6 credit hours) enrollment.

CONTINUOUS ENROLLMENT

All degree-seeking graduate students are expected to make a full commitment to their graduate and professional study to ensure that they can complete all degree requirements without unnecessary delay. Graduate students are required to maintain an active status through continuous enrollment from the time of first enrollment until graduation; however, summer semesters are excluded for M.S. students and Ph.D. students who have never registered for EPP 600.

Continuous enrollment is maintained by registering for a minimum of one graduate credit hour per semester (excluding the summer, unless stipulated otherwise by the program or department). However, Ph.D. students who have started taking dissertation hours (course 600) must maintain a minimum of three credit hours of EPP 600 per semester during all semesters, including the summer, as stipulated in the policy under "*Registration and Enrollment Requirements*" to comply with the Continuous Enrollment requirement.

The minimum enrollment for international students may be different, and international students always need to check with the Center for Global Engagement (CGE) to determine the minimum credit hour enrollment that they need to maintain to satisfy all enrollment requirements attached to their specific visa.

Exemption from Continuous Enrollment of Course EPP 600: Internships/Practicum for Ph.D. Students (from Graduate Catalog)

Doctoral students who have started taking EPP 600 Dissertation and wish to do an internship/practicum that is relevant to their degree, but not specific to the dissertation, can petition to be exempted from the Continuous Enrollment requirement for a maximum of up to three semesters or 12 months. The petition should be submitted before the student participates in an internship/practicum, describe the nature of the internship/practicum, and must include justification. Approval must be granted first by the student's advisor, then the Department, followed by the Graduate School. Multiple terms may be separate in time or back-to-back. Students whose petition is approved need not sign up for any coursework while doing the internship/practicum except international students must always check with the CGE to ensure that they remain compliant with their specific type of visa. The time limit to degree is not extended because of an internship/practicum. The petition form is available at the Graduate School's Forms Central webpage.

Consequences of Non-Enrollment without Leave of Absence (from Graduate Catalog)

Graduate students who do not maintain continuous enrollment as stipulated in the Continuous Enrollment policy will lose their active student status. A student who has lost their active status without having been granted a Leave of Absence for the period of non-

enrollment will not be allowed to continue in their graduate program until readmitted. (See policy on Readmission for more details.)

Non-enrollment other than during an approved Leave of Absence (LOA) does not alter or affect any of the milestone deadlines, such as admission to candidacy, time to degree, and other milestones depending upon the program.

Students who have begun taking dissertation hours (course 600 Doctoral Research/ Dissertation) must continually enroll in course 600 in spring, summer, and fall semesters (see Continuous Enrollment). If doctoral students taking dissertation hours do not enroll in at least 3 credit hours of course 600, the students will be retroactively enrolled in every semester of missed enrollment for 3 credit hours of course 600 Dissertation. Students will be responsible for paying the past tuition charges and fees as well as the current university per semester late registration penalty. All past due charges will need to be paid before the Graduate School will approve the student for any future enrollment and/or graduation.

SHORT-TERM ABSENCES

If a student needs to take a short-term leave of absence there is no official graduate school policy. These requests are handled by the departments on a case by case basis. This option may be preferable to the Leave of Absence request described below. If the need arises for this type of request, please discuss with your major advisor, the graduate studies director, and the department head. If the request is approved, a written plan of action will be developed to accommodate your request.

LEAVE OF ABSENCE (LOA) REQUEST (FROM GRADUATE CATALOG)

If extenuating circumstances arise that make it necessary for students to interrupt their studies temporarily, a Request for a Leave of Absence (LOA) for a maximum of two years may be granted by the Graduate School upon approval by the student's home department or program. All Graduate Student Leave of Absence Requests are reviewed and granted on a case-by-case basis. There are many situations for which a leave can be requested, such as the birth or adoption of a child, dependent care, a serious medical condition, military service, or other personal reasons. An LOA can be granted for financial hardship.

Graduate students are strongly encouraged to consult with their program, advisor, and Director of Graduate Studies of their academic unit in order to determine whether an LOA is the most appropriate course of action, and international students must also consult with the Center for Global Engagement (CGE) in order to ensure compliance with Federal immigration policy. Prior to requesting an LOA, graduate students should always explore alternatives, which would allow them to remain registered and make progress toward the degree, even if at a slower pace.

Graduate students who are on an LOA suspend their active study for one semester or more (up to 2 years), and while on an LOA they are not able to make any formal progress toward their degree. In addition, they may not use faculty services and/or university facilities for the time that they are on an LOA.

Students are expected to return from an LOA. If they do not return to active student status by the end of the time stipulated in the approved LOA, they will be considered non-enrolled once their LOA has expired and lose their eligibility for Reinstatement. Graduate Students who have

lost their eligibility for Reinstatement need to seek Readmission prior to being able to continue work in their graduate degree program (see policies below on Consequences of Non-Enrollment without Leave of Absence and on Readmission).

To return to an active student status, graduate students on an approved LOA need to establish Reinstatement into their graduate degree program by the end of the leave period stipulated on their approved LOA. Students on an approved LOA need to complete and submit their Request for Reinstatements to the Graduate School no later than on the last day of classes of the semester prior to the semester for which they seek to be reinstated (also see policy below on "Reinstatement").

Reinstatement Following LOA (from Graduate Catalog)

Graduate students on an approved Leave of Absence (LOA) are expected to seek reinstatement to active student status by the end of the period approved by the Graduate School. Reinstatement Requests need to be initiated by the student, processed by the Director of Graduate Studies in charge of the graduate degree program to which reinstatement is requested, and submitted to the Graduate School no later than the last day of classes of the semester prior to the semester for which reinstatement is requested.

Early Reinstatement. If a student would like to return to active study earlier than originally anticipated and approved on their LOA Request, the student will need to contact the EPP Director of Graduate Studies to discuss available options.

International students must note that all published deadline dates for new international graduate applications also apply for applications for reinstatement. (See section on Admission Requirements of International Students.)

Time Limit to Obtain Degrees – M.S. Students

Candidates have six calendar years to complete the degree, starting at the beginning of the semester of the first course counted toward the degree. Students who change degree programs during this six-year period may be granted an extension after review and approval by the Dean of the Graduate School. In any event, courses used toward a master's degree must have been taken within six calendar years of graduation. The term(s) and/or year(s) of an approved LOA will not be counted toward time to degree, and milestone deadlines such as Admission to Candidacy will be adjusted accordingly.

Time Limit to Obtain Degrees – Ph.D. Students

Comprehensive examinations must be taken within five calendar years, and all requirements must be completed within eight calendar years, from the time of a student's first enrollment in a doctoral degree program. The term(s) and/or year(s) of an approved LOA will not be counted toward time to degree, and milestone deadlines such as Admission to Candidacy will be adjusted accordingly.

Exemptions and Substitutions for Required Courses

Please contact the Graduate Studies Director for all requests related to course exemptions and substitutions in your Graduate Program. Your request must be approved by your major advisor and Graduate Advisory Committee. If a similar course is taught in EPP, the instructor

of the course must approve. The request will then be considered by the Graduate Studies Committee and the departmental faculty.

SPECIAL GRADUATION REQUIREMENTS FOR PH.D. STUDENTS

Comprehensive Written and Oral Exams (from Graduate Catalog)

A student may be admitted to candidacy for the doctoral degree after passing the comprehensive examination and maintaining at least a 3.00 GPA in all graduate coursework. Each student is responsible for filing the Admission to Candidacy form, which lists all courses to be used for the degree, including courses taken at UTK or at another institution prior to admission to the doctoral program, and is signed by all doctoral committee members. Admission to candidacy must be applied for and approved by the Graduate School at least one full semester prior to the date the degree is to be conferred. The candidacy form must be submitted with original or electronic signatures.

Comprehensive examinations must be taken within five years, and all requirements must be completed within eight years, from the time of a student's first enrollment in a doctoral degree program. The semester(s) and/or year(s) of an approved Graduate Student Leave of Absence (LOA) will not be counted toward time to degree, and milestone deadlines such as Admission to Candidacy will be adjusted accordingly.

The comprehensive examination is normally taken when the doctoral student has completed all or nearly all prescribed courses. Thus, its successful completion indicates that, in the judgment of the faculty, the doctoral student can think analytically and creatively, has a comprehensive knowledge of the field and the specialty, knows how to use academic resources, and is deemed capable of completing the dissertation. The comprehensive examination must be passed prior to Admission to Candidacy. A written examination is required, and an oral examination is encouraged.

The student's doctoral committee will determine the content, nature, and timing of the comprehensive examination and certify its successful completion. The committee may at its discretion subdivide the examination, administering portions of the examination at several times during the student's course of study. Students should carefully discuss the details of timing, topics covered, grading procedures, and provisions for repeating a failed examination.

Professional Skills

Doctoral students in the Department of Entomology and Plant Pathology at the University of Tennessee are expected to obtain varied professional skills during their graduate program. To help students meet this expectation, five Professional Experiences must be incorporated into their graduate Plan of Study and completed before graduation. In addition to your Advisor and Graduate Advisory Committee, numerous other faculty members are available to serve as mentors for any of these experiences. The five Professional Experiences are described below:

Academic Outreach Experience:

The University of Tennessee, Knoxville, defines academic outreach and engagement as integrated scholarship, which engages its academic missions of research, creativity, teaching, and service with its community. This type of experience involves students collaborating with external groups in mutually beneficial partnerships that extends the University's intellectual resources to its constituents. Graduate students will have numerous

opportunities to gain meaningful academic outreach experience through the department's ongoing K-12 activities focused on students and teachers. Graduate students who participate in this experience will learn the philosophy and practice of successful academic outreach.

Examples of outreach experiences include but are not limited to the following:

1. K-12 teaching lessons
2. Academic outreach at a land grant university
3. Programs and Partnerships from the UT Office of Community Engagement and Outreach
4. Academic outreach to community programs (Gadget Girls, judging Science Fair projects, Emerald Youth)
5. 4-H activities

Extension Experience:

Extension is one of the three missions of UTK, as a land grant university. UT Extension is the outreach unit of the Institute of Agriculture, and it extends research-based information about agriculture, family and consumer sciences, and resource development to the people of Tennessee. UT Extension's mission is to help people improve their lives through an educational process that uses scientific knowledge to address issues and needs. The department provides opportunities for graduate students to gain meaningful extension experience as part of their graduate education. This experience may involve one of the EPP faculty members with an extension appointment. Students participating in this activity are expected to learn the philosophy and practice of extension education.

Examples of an extension experience include but are not limited to the following:

1. Developing an Extension article for a blog or website delivery
2. Working with stakeholders to implement a new practice or policy
3. Q/A and troubleshooting pest management issues, involvement in diagnostics in collaboration with Extension specialist or agent
4. Developing an Extension App
5. Developing an Extension Fact Sheet

Leadership Experience:

Leadership skills are essential in all occupations, and are paramount for success in academia, industry, non-profit organizations, government, and other professional careers. Students may meet the leadership experience expectation by leading one or more of the department's activities including social activities, fundraising, visibility, branding and marketing, alumni networking, and K-12 and public engagement. Students may also fulfill this requirement by providing leadership in the EPP Graduate Student Association or they may design their own leadership activity in consultation with the Department Head, Graduate Advisory Committee, and/or a faculty member. Participating in the activities/committees without an identified leadership role will be considered a service experience and will not fulfill the activity requirement for a leadership experience.

Mentoring Experience:

A successful mentor is the hallmark of academic life. Graduate students may gain formal mentoring experience by working with high school, undergraduate and incoming graduate students at the University of Tennessee. Graduate students are connected with potential mentees through participation in the department's teaching, research, and outreach programs. To fulfill the mentoring experience, students can arrange to work for a specified length of time with one or more undergraduates or new graduate students as mentees. The mentee must agree with the arrangement. Activities appropriate during the mentoring experience include, but are not limited to, helping the mentee(s) with class projects, answering questions about different majors, providing information about job prospects, and training related to their research project.

Teaching Experience:

Students have a multitude of opportunities to gain significant teaching experience in the department's academic programs. Students seeking to fulfill the teaching experience requirement should contact an EPP faculty member with a teaching appointment slated to teach an undergraduate or graduate course, and work with them, assisting and engaging in various teaching activities. Depending upon their prior experience and language skills, the students may conduct labs and/or deliver one or more formal lectures.

Examples of teaching experiences include but are not limited to the following:

1. Serving as a teaching assistant (can receive credit for AGNR 512 or volunteer)
2. Best Practices in Teaching Program (3-month program – seven lectures offered during fall and spring semesters. Final product is a teaching portfolio) through the UT Graduate School: https://gradschool.utk.edu/training-and-mentorship/bpit/
3. Giving lectures to university students in an undergraduate or graduate course in EPP
4. Writing and publishing a teaching lesson for educational sections of professional scientific societies

Procedure for Completion of Professional Skills Experiences

In consultation with their Advisor, a student will determine which experiences are appropriate to fulfill the professional skills requirement. For each chosen experience, a student must complete an online Ph.D. Professional Experience Application Form, which includes a brief description of the activity and the name of the proposed Mentor, if other than Advisor. The link to the Professional Experience Application Form can be found at the EPP website, under the "RESOURCES" and "Professional Experiences" tabs. The password is EPProcks. Once submitted, the Seminar and Program Assessment Committee (SPAC) will confirm with the Mentor and communicate approval to the student (normally within 72 hours) so the student can initiate the activity. The role of SPAC in this process is to evaluate all applications for consistency and appropriateness of the proposed activity and reply to the student within two working days of receiving the submission.

Upon completion of each Professional Experience, students are required to submit a brief written report documenting the activities conducted and lessons learned (expected length is 1-2 paragraphs) to the SPAC member in charge of Professional Experiences (currently Dr. Juan Luis Jurat-Fuentes, jurat@utk.edu). In addition, all students completing a Professional

Experience during the year will make a brief (3 to 5 min) presentation detailing their completed experiences during the Professional Experience Extravaganza seminar to the department, which occurs annually. For students whose graduation timeline does not fit this annual Extravaganza, they may share their outcomes during their Final Exit Seminar. Students with substantial experience/ skill in any experience(s) may be exempted (i.e., receive a waiver) from that Professional Experience by completing the same Form and obtaining written approval from their Advisor and SPAC.

The following step-by-step procedures will guide the student through the process of completing their Professional Experiences:

1. Select an experience.
2. Develop an activity to satisfy that experience.
3. Discuss your activity with your Advisor; together select (or agree upon) the person with whom you would like to complete your experience (i.e., Faculty Mentor).
4. Discuss your activity with your Faculty Mentor; finalize the specifics of the activity. Complete and submit a Ph.D. Professional Experience Application Form online (access from the EPP website under the "RESOURCES" and "Professional Experiences" tabs).
5. Wait to receive reply from SPAC (within 72 h).
6. Once you receive approval from SPAC, begin your activity.
7. Once your activity is completed, develop a written report (typically 1-2 paragraphs), attach it to your approved Form, obtain signatures from your Advisor and Faculty Mentor, and submit it to the SPAC member responsible for Professional Experiences (Dr. Juan Luis Jurat-Fuentes) prior to the end of the semester in which your activity was completed.
8. Present a brief (3-5 min) overview of your Professional Experience to the department at the Annual Professional Experience Extravaganza seminar; be sure to indicate your completion of this Experience on your Ph.D. Progress Form.
9. Repeat Steps 1-8 to complete the remaining four Professional Experiences.
10. Once you have completed all five Professional Experience categories, reflect, and enjoy your accomplishments in expanding your professional skills.

Publication Submission Requirement for Ph.D. Students

All Ph.D. students enrolled in the Entomology, Plant Pathology, and Nematology Ph.D. program are required to prepare a submission-ready first-authored scientific paper to a referred journal prior to graduation.

REQUIRED TRAINING CERTIFICATIONS – READ INSTRUCTIONS CAREFULLY!

Child Protection Training for Covered Adults (required)

Faculty, staff, and students who work with minors (persons under 18 years of age) are required to take specific training. Go to the following website - https://hr.tennessee.edu/eod/child-protection-training/. ***If you are a staff employee working towards a degree, go through K@TE (online) to take the training. If you are a***

graduate student with or without an assistantship, scroll down the page and click on the link for External Users. Please complete the training during your first semester or in EPP 570 and send a copy of your completion form to Sonya Dexter (sdexter@utk.edu).

Information Security Awareness Training (required)

Online training is available at https://oit.utk.edu/security/tools/awareness/. ***This training site is available for faculty, staff, and graduate students.*** Training is required annually. Please complete the training during your first semester or in EPP 570 and send a copy of your completion form to Sonya Dexter (sdexter@utk.edu).

Laboratory Chemical Safety Training (required)

Login to https://ehs.utk.edu/index.php/training/#canvas. ***If you are a staff employee working towards a degree, go through K@TE (online) to take the training. If you are a graduate student with or without an assistantship, go through Canvas (online) to take the training and complete all eight modules.*** Training is required annually. Please complete the training during your first semester or in EPP 570 and send a copy of your completion forms to Sonya Dexter (sdexter@utk.edu) who will provide your documents to the Graduate Studies Committee.

Responsible Conduct of Research (Ethics) Training (required)

All EPP graduate students are required to take training in research ethics. Many federal granting agencies require that anyone working on a project that they funded receive this training or take a formal course that covers this material. The online modules are the easiest way to receive the training. Please complete the training and send a copy of your completion form to the Graduate Studies Director (Dr. Ownley) by the end of your first semester or in EPP 570. The training is good for 5 years and is recognized at other institutions – save your certificate.
Directions for Online Training:

1. Go to this site: https://www.citiprogram.org/
2. Register to create an account and **select University of Tennessee-Knoxville (SSO) as your organization from the dropdown list on the Instruction page, question 1, choose research with Data or laboratory specimens-only; No direct contract with human subjects**
3. Complete the training modules during your first semester or in EPP 570.
4. When the training is complete, you will have access to a certificate. Please send an electronic copy of your certificate to Sonya Dexter (sdexter@utk.edu).

Title IX Training (required)

If you are a staff employee working towards a degree, go through K@TE (online) to take the training. TITLE IX training will be under the subject 'Compliance,' If you are a graduate student with or without an assistantship, go to the following website - https://titleix.utk.edu/graduate-student-online-training/. Please complete the training during your first semester or in EPP 570 and send a copy of your completion forms to Sonya Dexter (sdexter@utk.edu) who will provide your documents to the Graduate Studies Committee.

Optional Training Certifications

Active Shooter Training

Training can be found in K@TE. Follow instructions in the "Getting Started" section.

Biosafety Level 2+ Training

Students should consult with their major advisor to determine if their research requires Biosafety Level 2 training. In general, this type of research would involve blood borne pathogens and infectious agents. Additional information can be found at the Biosafety Program website at https://biosafety.utk.edu/biosafety-program/training/.

Institutional Animal Care and Use Committee (IACUC) Training

Students who work with animals must complete the IACUC training. More information can be found on the following website - https://iacuc.utk.edu/.

Institutional Review Board (IRB) Training

Students who work with human subjects, including administration of surveys, may be required to have IRB training. More information can be found at the following website - http://irb.utk.edu/. Students should discuss this possibility with their major advisor.

Training Opportunities at LinkedIn Learning

Online and classroom training on many different software programs is available to students free of charge through the Office of Information Technology. There are many training opportunities offered. For more information, please go to - https://oit.utk.edu/training/online-training/lil/.

EPP Graduate Student Association

The Entomology and Plant Pathology Graduate Student Association (GSA) is a self-governing student organization. The GSA participates in various community awareness programs, including visits to local elementary schools and the Ijams Insect Walk. The GSA also participates in university events, and information to undergraduates about the Department of Entomology and Plant Pathology. You are strongly encouraged to get involved in your Association.

Officers for the Graduate Student Association are elected each fall semester for 1-year terms. A Student Organization Update Form should be filled out each time there is a change in elected officers. A designated representative from GSA is entitled and expected to attend EPP faculty meetings at the discretion of the department head. A member of the EPP GSA must also serve on the Graduate Student Senate. For additional information, contact the Faculty Advisor for the EPP GSA, Dr. Moulton.

General Procedures for All Students

Keys

University keys can be obtained through an online application process. Please contact Tonya Jelf (tjelf@utk.edu) for this process.

Room Reservations

Requests to reserve conference rooms can be made through Tonya Jelf (tjelf@utk.edu).

Computer / Software/ Technology Problems

If students have problems with computer hardware or software, visit the OIT website https://oit.utk.edu/ for assistance. Communication can be via call (865-974-9900), chat, message, or face-to-face visit if hardware needs repair.

Transportation/ Travel Policies (ALL travel information is subject to MAJOR revision)

The University has recently COMPLETELY changed their travel policies and procedures. Please contact Sonya Dexter (sdexter@utk.edu), who is our departmental travel expert for information on in-state, out-of-state, and out-of-country travel for research, training, and professional society meetings.

Motor Pool Vehicles

1. Everyone reserves their own Motor Pool cars through https://fleetmanagement.utk.edu/. The first time, you will need to set up an account using your NetID and password.
2. No smoking in any university-owned vehicle (or University property, grounds included).
3. Upon returning from a trip, remove all trash and all equipment and supplies from the vehicle.
4. Vehicles taken out-of-town should be refueled upon returning to campus. The motor pool is open 7:00 a.m. - 11:30 p.m. Monday through Friday.
5. Use of UT Transportation equipment is a privilege and not a right. Abuse of privileges by students, staff, or faculty may result in loss of such privilege.
6. Wearing seat belts is a state law - any traffic citation is the responsibility of the driver. We are expected to obey all posted traffic signs.
7. To purchase gas and oil at an out-of-town location, use the university provided fuel cards. All fuel cards are in the leather key pocket of each vehicle. In Knoxville, fuel should be obtained from Fleet Management (*Division of Finance & Administration*, 1201 UT Drive, Knoxville, TN 37996-2920.

What to do in an Emergency Involving a University Vehicle

If there is an injury - call 911. If an accident occurs always get a police report. Usually, the Voyager card can be used for minor repairs when out of town. However, should an emergency occur where the "Voyager" card cannot be used you may call the UT Motor Pool at the following numbers: 7:00 a.m. - 11:30 p.m. 865-974-2134. For emergencies from 11:00 p.m. to 7:00 a.m., you may call UT Safety and Security at 865-974-3114. This number will get a tow-in only. For further safety precautions call 911 and request police to come to where vehicle is broken down. Flashlights, triangular reflective flares, and other emergency items have been placed in each vehicle for your added personal safety. We encourage you to use these should the need arise.

EPP Travel Procedures

Authorization for travel and reimbursement of expenses must follow the provisions of UT and EPP policy. It is the employee's responsibility to be familiar with and follow established travel policies. Deliberate disregard of these regulations while traveling on UT business or filing of an intentionally misleading or fraudulent travel claim, are grounds for disciplinary action, including termination of employment. The travel policy and other travel resources can be found at https://finance.tennessee.edu/travel/. Travel Training is available through K@TE.

Sonya Dexter (370 Plant Biotech) is responsible for all travel processing and IRIS entry. Please contact Sonya (sdexter@utk.edu) if you have any questions about travel (training, policy, or procedure).

All travel must be necessary to execute official university business or educational objectives. Professional meetings, conferences, or workshops must be directly connected to your duties and role within the university. All student travel must be reimbursed in accordance with FI0535 - Student Payments (Non-Employment Related) and, if applicable, reported to the campus financial aid office.

World Travel Services Inc. is the university's travel agency and employees should book all travel through them to ensure that they receive negotiated discounts, required supporting documentation and assistance in complying with policy. Concur Solutions is the online self-service booking tool provided by World Travel and is available to all employees. Expenses associated with other travel agencies, including online booking tools will not be reimbursed. Please ask Sonya for specific instructions or check the UT Travel Policy.

Permission to Travel

In-state Travel - If your travel is in-state, please proceed to "Travel Expense Reimbursement." For most employees, a Travel Request is not needed for in-state travel. In-state travel is travel within the state of Tennessee and travel into another state and back in the same day.

Out-of-state or International Travel - All out-of-state and/or international travel require a Travel Request Worksheet (even if at no cost to UT).

1. Notify Sonya of an upcoming trip as far in advance of the trip as possible to allow for proper routing and approval.
2. Sonya will email you instructions and a form to fill out (this does not need to be typed). Provide travel information that is as accurate as possible on the request but if the information changes you can put the corrected information on the Travel Expense with a detailed reason for the change. "Destinations" are where you will lodge overnight and other places to be visited can be listed in the comments.
3. Attach supportive conference documentation or website address and return to Sonya.
4. The major advisor must reply to an email from Sonya authorizing the usage of their account number(s)
5. Sonya will enter the travel information into Concur.
6. Sonya will send you an email asking for you to proof and submit the request.

7. UT must approve the request (or your travel is not approved).
8. You will receive an email from Concur letting you know when this has been approved.
9. You can now make your travel arrangements.

   NOTE: *Anyone traveling internationally on any UT funding must prepare the International Travel Registration form at http://international.utk.edu. Remember that the dates you register with CGE and the dates on the travel request must match.*

Expenses

Employees may pay registration fees with personal funds and apply for reimbursement at the end of the trip or arrange to have the cost paid by a UT Travel Card (either their major advisor's card or Sonya Dexter's departmental card). Out-of-Pocket expenses can be offset by applying for a Travel Advance (ask Sonya) when you do your Travel Request.

NOTE: *All expenses posted to a UT Travel Card must follow both UT Travel Policy and UT Travel Card Policy. All travel bookings made on a UT Travel Card (airfare/car rental charges, etc.) must be booked through World Travel or Concur. All travel bookings made on personal funds should be booked through World Travel or Concur.*

Travel Expense Reimbursements

1. Notify Sonya that you are back from your trip and need to prepare an expense reimbursement.
2. Sonya will email you instructions and a form to complete. Travel information provided must be accurate.
3. Attach receipts (e-receipts, scans, clear pics) and return to Sonya.
4. Sonya will enter travel expenses into Concur.
5. The major advisor must reply to an email from Sonya authorizing the charge to their account number(s).
6. Sonya will send you an email asking for you to proof and submit the expenses.
7. UT must approve the expense.
8. You will receive an email from Concur letting you know when this has been approved.

Funding Sources for Travel

Thompson Student Development Fund

Guidelines:

1. EPP Thompson Student Development Funds may be used for travel to scientific meetings, research-relevant training workshops, or other similar venues. If attending a meeting, the student should be an active participant by presentation of an oral paper or a poster.
2. Funds are not transferable to other students and remainders may not be rolled over. Instead, they will remain among the available funds for use by future students.

3. A graduated student may still have access to funds for presenting a paper at a meeting if the following criteria are met:
    - The meeting must be no later than six months after graduation,
    - The student's stated affiliation must be The University of Tennessee,
    - The reported research must have been substantially performed in EPP at the University of Tennessee,
    - Requests for fund use must be made and approved before the official graduation date.
    - A student who has finished an M.S. degree in EPP and started a Ph.D. program in EPP must use Ph.D. funds rather than any remaining M.S. funds.
4. Major Advisors and graduate students are expected to seek outside funding and to include travel to meetings and workshops in their grant proposals. Each major advisor and student should plan to ensure that the student has funds available for the activity. Students also should be proactive in seeking potential sources of funding for their travel and plan accordingly.
5. The department head and business manager will periodically review the financial status of the fund and adjust amounts if necessary.

Graduate Student Senate (GSS) Travel Award
See information at https://gss.utk.edu/gss-travel-awards/