Welcome to Purdue and the Department of Agronomy! This handbook was created by the Agronomy Graduate Committee and Graduate Students to be a source of information and answer questions about the Purdue Agronomy System.

Inside you will find information about Purdue agriculture research farms and facilities, the State of Indiana, campus facilities available to you, and even a section on “Cutting the Red Tape”. A listing of suggested courses for academic areas of specialization has been included.

We hope you find this book useful and hope that your stay at Purdue is an enriching and enjoyable experience.
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Who to See
Before Europeans entered Indiana in the late 1600’s, successive groups of Indian tribes inhabited the area. The French established three forts in the early 1700’s, one, Fort Quiautenon, was located near Lafayette. The area was ceded to the British in the 1760’s, and then to America after the Revolutionary War. After Indiana became the 19th state in 1816, pioneers began arriving in the state in large numbers. Settlers from states south and east of Indiana came in search of the highly productive Indiana farmland. In the 20th century the state has seen a change from an agricultural economy to one emphasizing manufacturing. Agriculture, though, remains a strong force in the state’s economy.

Indiana’s landscape varies from the wooded hills in the southern part of the state, flat fertile farmland in its central section to swamps and marshes in the north. Points of interest range from such natural features as sand dunes, caves and lakes to the man-made Indianapolis Motor Speedway, scene of the internationally known Memorial Day 500-mile automobile race and the Brickyard 400. We have 4 distinct seasons. Our average annual rainfall is 40 inches, average summer temperature is 70-80º fahrenheit, and average winter temperature is 25 to 35ºF.

Indiana is known affectionately as the “Hoosier State” and its inhabitants are known as “Hoosiers”. Famous Hoosiers include Benjamin Harrison (our 23rd President), James Whitcomb Riley, Kurt Vonnegut, Jr. and Dan Quayle. Entertainers Jane Pauley, John Mellencamp, David Letterman, Larry Bird and actors Steve McQueen and James Dean all hail from Indiana. Seventeen Purdue graduates have been selected for space flight, including Neil Armstrong and Eugene Cernan, the first and last men on the moon.

(indiana.gov/core/about.html)

INDIANA AGRICULTURE

Agriculture is big business in Indiana. There are 63,000 farms with over 15.4 million acres devoted to agricultural production. The annual value of agricultural products exceeds $5.1 billion. Corn, soybeans, wheat and forages are the principle agronomic crops.

Nationally, Indiana ranks first in ducks, second in popcorn, tomatoes, and eggs; fourth in soybeans and mints; fifth in corn and hogs; and seventh in turkeys. As an exporter, Indiana exports over $2 billion in agricultural products annually and is the largest trading partner with Canada of any of the fifty states.
PURDUE UNIVERSITY

Founded in 1869, Purdue University ranks among the 25 largest colleges and universities in the nation. Today over 39,000 students are enrolled at the West Lafayette campus with an additional 30,000 enrolled at the four regional campuses and nine Statewide Technology sites. Diversity and opportunity are characteristics of the University. Students today represent all 50 states and 123 countries. Purdue offers over 500 academic programs and over 7,400 courses. Among Purdue’s 260,000 alumni are Nobel Prize winners, astronauts, and three U.S. Secretaries of Agriculture.

The College of Agriculture at Purdue has about 288 faculty and a total of 2,069 staff and faculty involved in teaching, extension and research and offers more than 40 undergraduate degree programs through its 11 academic departments. Each of these departments also offers master’s and Ph.D. degrees. The Indiana Agricultural Experiment Station is the primary research arm of the Purdue College of Agriculture. Through the experiment station, and grants and contracts about 75 million dollars are invested in agricultural research each year. The Cooperative Extension Service is the primary out-reach and technology transfer arm of the College of Agriculture. Over 250 county agents supported by 75 technical specialists provide local access to the information and resources found at the University.

Innovative interdisciplinary programs such as the Crops Diagnostic Training and Research Center and the Plant and Pest Diagnostic Laboratory provide continuing education and technical services to the crop production industries of the states.

The Agronomy Department has 41 faculty and 10 adjunct faculty. Major program thrusts in the department include: Cropping systems; Environmental Science of Soil, Water and Air; Plant Breeding; Molecular Genetics; Crop Physiology; Surface Chemistry; and Physics of Soil. Departmental facilities include office and laboratory space in Lilly Hall of Life Science, a Plant and Soil Science building and greenhouse complex, a 991-acre Agronomy Research Center and over 5000 acres of research land at eight Agriculture Centers throughout Indiana.

THE COMMUNITY

Lafayette and West Lafayette, Indiana lie on Interstate Highway 65, 65 miles northwest of Indianapolis and 125 miles southeast of Chicago. The two cities, separated by the Wabash River, have a combined population of 90,241.

The community has much to offer as a place to live. Housing is high quality and affordable. The public schools are excellent and benefit from a close interaction with the university. More than 60 churches of all major denominations, an art museum, historical museum and 1600 acres of public parks add to the quality of life. There are two hospitals which serve the community.

The economy of the area is strong and diverse. Employment is high and offers a broad range of opportunities. Purdue is the single largest employer. A rapidly growing manufacturing industry is also present which includes, metals, corn processing, automobiles, machine tools, pharmaceuticals and chemicals.
Nearby points of scenic and historic interest include Fort Quiatenon, an early French settlement located approximately 3 miles southwest of West Lafayette on South River Road. On the nation’s register of historic places are: Battle Ground where William Henry Harrison fought the Battle of Tippecanoe; the Shades and Turkey Run state parks; and Lake Shafer and Lake Freeman, near Monticello.

In 1919 Harry J. Marack opened Harry’s Chocolate Shop at 329 West State Street in West Lafayette. The Marack family operated the Chocolate Shop as the only Soda Fountain near Purdue University well into the 1920’s.

The Purdue University Horticulture Gardens (0.5 acres) are botanical gardens located on the Purdue campus, adjacent to the Horticulture building at 625 Agriculture Mall Drive. Established in 1982, the gardens display a wide diversity of plants, including nearly 200 species of perennial flowers and foliage plants, and over 300 cultivars of annual flowers and garden vegetables. The gardens are open to the public year-round, seven days a week.

**SHUTTLE SERVICE TO THE AIRPORTS**

There are three companies, Lafayette Limo, Star of America, and Express Air Coach, that provide express shuttle service between Purdue University and the two nearest airports (Indianapolis and Chicago O’Hare). Lafayette Limo (765 497-3828; www.lafayettelimo.com/) has shuttles leaving every 2 hours, 9 times at day to the Indianapolis Airport. The fare is $27.00 one way and $50.00 round trip. Star of America (800-228-0814; www.soashuttle.com/) is $19 one way and $38 round trip to the Indianapolis Airport. They have free wi-fi on shuttle. Express Air Coach (765-743-3120; ww2.expressaircoach.com/purdue/) provides shuttle service to Chicago O'Hare. The rate is $65.00 one way.

**INDIANA OUTDOOR INFORMATION**

http://www.in.gov/dnr/parklake/
http://www.indianaoutfitters.com/statemap.html
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Turfgrass Science

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Edwin Suarez  Jon Trappe
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Patsy King
Cheryl Long
Sherron Myers
Lana Burnau
Brenda Warren (Grad Payroll)

Greenhouse Assistance
Ron Steiner (AGRY)
Deb Lubelski (BTNY)

Graduate/Undergraduate Secretary
Scholarship Coordinator
Karen Clymer

Web, Event/Student Activities
Lynn Bargseudt

Graduate Chair
Eileen Kladivko

NRES Secretary/Academic Schedule
Deputy/Soils Teaching
Dawn Foushi

Turfgrass, Genetics & Plant Breeding
Plant Science Social
Jennifer Biehl

Department Head Secretary
Sandy Spitznagel

Extension Staff/Cropping Systems/
DTC Secretary
Lisa Green

Building Deputy
Ed Stath

Computer Analyst/Network Administrator
Tom Pluimer

Agronomy Main Office
Connie Foster (Receptionist)

Agronomy Farm Manager
Jim Beaty

Agronomy Grad Committee
Eileen Kladivko, Chair
Laura Bowling
Shaun Casteel
Yiwei Jiang
Mitch Tuinstra
Agronomy Research Center: Located northwest of West Lafayette and the Purdue campus on State Road 52. This 991 acre farm is site for more than 150 research projects conducted by some 50 university researchers. Studies range from basic to applied science and include: plant breeding and genetics, crop production, and soil management, plant physiology, soil fertility, weed control, disease and insect resistance and control, and variety performance evaluation for corn, soybeans, and small grains, and soil microbial community analysis. New facilities include a Crop Protection Laboratory, a state-of-the-art facility designed with personal safety, environmental safety, and functional use in mind. A shop and a Variety testing building are new additions to this farm. The Agronomy Farm is administered through the Agronomy Department, but research is also conducted by the Departments of Botany/Plant Pathology and Entomology.

- **Davis:** Swine production research is the emphasis of this center located approximately 15 miles north northeast of Muncie in Randolph County. Other research includes a natural forest habitat area, and agronomic crops. The original gift of 385 acres was given to Purdue in 1917 by Martha Davis in memory of her son.

- **Feldun:** Located in Lawrence County near Bedford, the original 477 acres were donated to Purdue in 1914 by Moses Fell Dunn. A limestone quarry on the farm, worked under contract, helps support research projects. Current research includes beef cattle, forestry, and row crops. Feldun is also the home of the Indiana Beef Evaluation Program bull test station.

- **Northeast:** (NEPAC) This 425 acre site near Columbia City in Whitley County was acquired in 1990. Primary research interests at this site are on agronomic crops.

- **Pinney:** Located on the Porter-Laporte County line, the original 486 acres were a gift in 1919 from Myra Pinney Clark, in honor of her father, William Pinney. An additional 157 acres was acquired from Wayne Pinney in 1979. The farm is noted by researchers for its three distinct soil types. Research is conducted under irrigation and on agronomic and vegetable crops.

- **Southeast:** (SEPAC) This farm is located in Jennings County (Butlerville, IN) on the typical, hard to manage soils of the region. The soils have low organic matter content and are highly erosive. It is active in row crop, forage and forestry research. A major study of
drainage and water quality by agronomists and ag engineers is conducted at SEPAC.

- **Southern Indiana**: (SIPAC) Located in Dubois County near the Patoka Reservoir, the center covers 1300 acres, including the Patoka Forest Project. It was donated to Purdue by the citizens of southern Indiana in 1952 to conduct research on the sandstone-shale derived soils of the area. Livestock, forage, and forestry research are conducted on this farm.

- **Southwest**: (SWPAC) The 175 acre site near Vincennes (Knox County) was purchased in 1979 for research on fruits, vegetables and agronomic crops. Development has included trickle and overhead irrigation systems.

- **Throckmorton**: Located eight miles south of Lafayette in Tippecanoe County, the farm covers 296 acres and was a gift of Dr. George Throckmorton in memory of his father in 1935. Its rolling Raub silt loam soil is used primarily for row crop research. This center has a distinguished history of entomology, soil erosion, crop rotation, and tillage research.

**GREENHOUSE FACILITIES**

The greenhouse facilities are located on the south side of the Life Science Building. There is 700 sq. ft. of bench space in each of 48 greenhouses that are used by the Departments of Agronomy, Biochemistry, Biology and Botany/Plant Pathology. Students wishing to conduct research in these areas should speak with their major professors as to the space(s) available. Ron Steiner (AGRY) and Deb Lubelski (BTNY) are in charge of greenhouse operations.

**BECK AGRICULTURAL CENTER** (4540 U.S. 52 West, West Lafayette, IN 47906)

The Beck Agricultural Center offers outstanding flexible resources for meetings, conferences, workshops, and retreats associated with Agriculture education. Located at the Agronomy Center for Research and Education, the Center offers the opportunity to combine hand-on field experience with classroom presentations and discussions. For more information or to schedule an event at the Beck Agricultural Center, contact: Linda Pitstick, Beck Center Coordinator, phone 765-583-0590, or email beckcenter@purdue.edu.

**WILLIAM H. DANIEL TURFGRASS RESEARCH AND DIAGNOSTIC CENTER** (Daniel Center) (1340 Cherry Lane, West Lafayette, IN 47907)

The Daniel Center is located just north of campus and adjacent to one of two 18-hole campus golf courses. It has an educational facility and turfgrass research plots. There are 22 acres at the Daniel Center dedicated to turf research. Glenn Hardebeck is the manager of the Center and can be reached at 765-496-6566.
Purdue Agricultural Centers

To serve people in all parts of Indiana, Purdue operates eight regional Purdue Agricultural Centers (PACs).

Davis Purdue (DPAC)  
Feldun-Purdue (FPAC)  
Northeast-Purdue (NEPAC)  
Pinney-Purdue (PPAC)  
Southeast-Purdue (SEPAC)  
Southern Indiana-Purdue (SIPAC)  
Southwest-Purdue (SWPAC)  
Throckmorton-Purdue (TPAC)

Indiana has over 300 soil types and multiple microclimates. Each section of farmland reacts differently to fertilizers, cultural practices, pesticides, and tillage systems. Each parcel of forest reacts differently to different management practices. So Purdue’s PACs are located where they can do the most good.

At the PACs, researchers and Extension educators help identify and solve production problems, take risks that eventually will benefit farmers, and explain and demonstrate the results of sophisticated research.

The Director of Purdue Agricultural Centers, Jerry Fankhauser, and the Agricultural Research Programs staff administer and coordinate projects at the regional centers, which are used by researchers from all agricultural disciplines.

Information taken from: http://www3.ag.purdue.edu/arp/pac/Pages/default.aspx
MISCELLANEOUS

COPIERS
Copiers are available on the second and third floor of Agronomy, and in the Lilly Life Sciences Library. Personal copies are $.05 per copy. The main office copy machine can make pdf files.

COMPUTER SERVICES
Purdue’s computing and network facilities support the University’s instruction, research, and service missions. Proper use of computing and network facilities respects all University regulations, contracts with University suppliers, and all local, state, and federal laws. Improper use may have serious consequences.

There are University-maintained computer labs located across campus in which students can log in with their University “Career Account.” The nearest lab is LILY G-431. To find other labs on campus visit https://www.purdue.edu/apps/ics/LabMap. Another useful url that details resources for new students is http://www.itap.purdue.edu/learning/index.cfm. The network drive (H:) used with the Career Account in campus labs is mapped automatically on Agronomy computers.

Many faculty provide computer access to their own graduate students. These PCs are usually located in the faculty member’s laboratory facility. Check with the individual faculty member for more information.

Computers are also available in the Crops and Soils Resource Study Centers, located in rooms 2-417 and 3-419, respectively. Although these computers are primarily for undergraduate teaching purposes, they are available to graduates when not in use by undergraduates. Check with the Study Center staff first, please.

If you have questions or need help, please contact Judy Santini, research statistical agronomist (LILY 2-333, 46663) or email Tom Pluimer (agrytech@purdue.edu), systems analyst/network manager.

MAIL: ITaP (Information Technology at Purdue) provides email storage (maximum of 500MB) for University users. Most Agronomy students and staff access their mail using Microsoft Outlook. There are two types of University email accounts: Mail hub—basic and general email account. This can be accessed using Microsoft Outlook or other email clients, by MAC computer clients, or by using the Internet web-based access at http://webmail.purdue.edu.
Exchange—enhanced email account by adding email along with calendar (appointments), contacts and tasks. This can only be accessed by using Microsoft Outlook, MAC Entourage, or by using the Internet web-based access https://exchange.purdue.edu. Please contact your Agronomy computer support agrytech@purdue.edu for an Exchange account.

Boilermaker Copy Center
CD’s for University licensed software can be purchased for student and staff-owned computers for as low as $15 in Boil Copy Center, which is located in Steward Center, Room 157. A list of available software is located at: http://www.itap.purdue.edu/support/licensing/search/.

myPurdue
All Purdue graduate students at the West Lafayette campus use the myPurdue web portal as the source for academic and financial account information. You will use myPurdue to self-register
PHONE CALLS

MERS - To make long distance business calls from a campus phone, obtain a MERS number from your supervisor/major professor and dial the long distance number followed by the MERS number. For long distance calls from off campus (i.e. Agronomy Farm) call the Purdue Operator (494-4600) and indicate you want to make a MERS call.

To Call                          Dial
Departmental number             last five digits
Purdue number                  5 digit extension
Off-campus number              7 + seven digit number
Long Distance (Univ. Business)  7 + 1 + area code + number, MERS number
Purdue Operator                0
Directory Assistance            7 + 1 + 765 + 555-1212
Long Distance (Personal)        7 + 0 + area code + number, press 0 for options
International                  7 + 011 + country code + city code + number, MERS

KEYS

   Graduate students can request keys for the outside door, offices, laboratories, and resources centers. Keys to the following are recommended:

      Lilly Hall main door
      Office
      Laboratories

   Additional keys can be requested at any time of access to other laboratories or resource centers as it becomes necessary.

   To request keys, a KEY REQUEST Card from the Business Office, requiring the consent and signature of the person responsible for the room must be submitted to Ed Stath. Keys can be received from Biology Stores within 1-2 days after submitting your request form. The Master Key is also available which opens most Lilly Hall doors. If you need to enter a room and do not have a key, sign out the Master Key in the Main Office and return it promptly when finished.

SAFETY

   Every graduate student should read and complete the Chemical Hygiene Plan and Hazardous Materials Safety Manual and the training checklist if applicable the first week of employment.
(add and drop) classes, pay tuition, check grades, access your academic history and more.

**Before Using myPurdue**

- Read this page: http://www.purdue.edu/onepurdue/ESA/studentinfo.shtml. It includes important information that both returning and new students need to know. Links to video demonstrations of myPurdue also are on this page. (You will need to enter a valid Purdue Career Account username and password to access the demos. If you do not know your username, instructions on how to find it are on this page: http://help.itap.purdue.edu/2550.)

**Access myPurdue—Agronomy Graduate Student Pin Number is 999999**

1. Go to the myPurdue login page: https://mypurdue.purdue.edu
2. Enter your Career Account username and password.

You will then be able to take advantage of these myPurdue features:

- Viewing your class schedule
- Dropping and adding classes

**Tips for Dropping and Adding Classes Online**

- Dropping courses may impact your curriculum plan. Be aware that dropping classes could affect assessed fees, awards, health insurance requirements, athletic eligibility and international student visa requirements. If you are unsure of the ramifications of dropping a course, please contact your major professor first. For guidance regarding course adjustment timelines go to http://www.purdue.edu/registrar/InteralOps/Calendars/index.htm.
- To add a class, click on the “Student” tab, and then the “Registration” link. Click the “Add or Drop Classes” link. Select the proper registration term from the drop-down box and click “Submit”. If you are currently registered for classes, those classes will appear. Scroll to the bottom of the page and either enter the CRN (course Reference Number) and click “Submit Changes” or click “Class Search” to find the appropriate open section of the class.
- To search for a class, enter at least one subject code. Multiple subjects can be entered by holding down the Ctrl key while clicking on various subjects. Once the appropriate search criteria has been entered, click the “Class Search” button at the bottom of the page. Your search results will be returned. Review the available courses.
- To register for one or more classes, click the checkbox to the left of the course name and either select “Register” to add the class or “Add to Worksheet” if you need to search for other subparts of the course (such as a lab).

**Help**

If you have problems accessing myPurdue, read this page: https://help.itap.purdue.edu/3447.
If you need help using myPurdue, contact the ITaP Customer Service Center at:
E-mail: itap@purdue.edu; Phone: (765) 494-4000; Online: www.itap.purdue.edu/help

**ADMISSIONS**

Admission to graduate school is done via the web. The web address is
http://www.gradschool.purdue.edu/admissions/. More importantly, if you wish to be considered for an assistantship or fellowship, you must contact the faculty member with whom you are most interested in working. They will be able to tell you whether or not they have the funds to support you. If you will be independently supported, contact them anyway to get an idea of what they are working on and if they would be willing to work with you.

Most commonly, admission is first confirmed through the department and the appropriate faculty member. Later you will get formal admission to Purdue from the Graduate School.

**ACADEMICS**

Degrees offered in the Department of Agronomy are:
- Master of Science, thesis option
- Master of Science, non-thesis option
- Doctor of Philosophy

Areas of Research are:

**Cropping Systems and Plant Nutrition**
- Soil Physical Properties
- Crop Management
- Soil Fertility
- Applied Meteorology
- Spatial Technologies

**Genetic Improvement of Economic Crops**
- Structural Genomics
- Functional Genomics
- Computational Genomics
- Comparative Genomics

**Environmental Soils and Landscape Processes**

**Processes**
- Fate and Transport of Contaminants in Soils
- Soil Remediation
- Remote Sensing of Soil Resources and Earth Observations
- Soil Erosion
- Soil Classification, Mapping, Survey
- Soil Chemistry/Mineralogy
- Soil Biology and Biochemistry
- Nanotechnology

**Turf and the Urban Interface**
- Turf
- Land Use
- Septic Systems

**MINIMUM COURSE REQUIREMENTS**

*(Fall 2010 beginning students may take this program or the new program that*
SUMMARY OF TIMELINE FOR M.S. CANDIDATES

First Semester

- Initial registration
- English proficiency needs to be satisfied by foreign students before filing plan of study.

Second Semester

- Advisory committee selected.
- Plan of study filed before the end of the second semester.
- Transcripts on file for all previous course work.

Start of Last Semester/Session

- Committee meeting to determine course and research objectives have been met.
- Indicate intent to graduate on Form 23.
- All course work completed and incomplete grades cleared.
- First draft of thesis must be submitted to major professor at least six weeks before intended examination date.
- Two weeks before intended examination and after thesis approval by advisory committee, request an appointment for an examining committee.
- At this time students must submit an abstract for their seminar notice to the Graduate Secretary. This will be circulated one week before your seminar.
- Final examination is a public seminar followed by an oral exam in which the student defends the thesis.
- The final thesis with all corrections and three duplicates should be in the hands of the major professor three weeks before the end of the session in which degree is expected.
- Submit thesis via Electronic Thesis Deposit (ETD) at least 24 hours prior to scheduled appointment. Call 494-2600 or email gradinfo@purdue.edu to set-up appointment in Thesis Office, Room 170, Young Hall (YONG).

Course work for M.S. Thesis Option: 24 course credit hours including 1 credit of seminar. Agronomy Department requires GRAD 612 for all students.
Course work for M.S. Non-Thesis Option: 33 course credit hours including 1 credit of seminar, 3 (but not more than 6) credits of special problems, GRAD 612 required.
SUMMARY OF TIMELINE FOR PH.D. CANDIDATES

First Semester

- Initial registration
- English proficiency needs to be satisfied by foreign students before filing plan of study.

Second Semester

- Advisory committee selected.
- Plan of study filed before the end of the second semester.
- Transcripts on file for all previous course work.

Preliminary Examination (at least two semester before final examination)

- Prelims scheduled after majority of course work on plan of study has been completed.
- Scheduling of exam must be done two weeks before date of exam. This applies for all oral examinations.
- You MUST have a minimum of two semesters between prelim and final examination.

Start of Last Semester/Session

- Committee meeting to determine course and research objectives have been met.
- Indicate intent to graduate on Form 23.
- All course work completed and incomplete grades cleared.
- First draft of thesis submitted to major professor at least six weeks before intended examination date.
- Two weeks before intended examination and after thesis approval by advisory committee, request an appointment for examining committee. At this time students must submit an abstract for their seminar notice to the Graduate Secretary. This will be circulated one week before your seminar.
- Final examination is a public seminar followed by an oral exam in which the student defends the thesis.
- The final thesis and three duplicates should be in the hands of the major professor three weeks before the end of the session in which degree expected.
- Submit thesis via Electronic Thesis Deposit (ETD) at least 24 hours prior to scheduled appointment. Call 494-2600 or email gradinfo@purdue.edu to set-up appointment in Thesis Office, Room 170, Young Hall (YONG).

Course work for Ph.D.: 36 total course credit hours including 2 credits of seminar (Can include a maximum of 24 credits obtained during M.S. degree from one university). GRAD 612 required for all students.
ACCEPTABLE TOEFL SCORES AND WAIVER REQUIREMENTS:

Paper Based: 550  
Computer Based: 213  
Internet Based  
  Writing: 18  
  Speaking: 18  
  Listening: 14  
  Reading: 19  
  TOTAL: 77

The Graduate School will also accept the IELTS (Academic Module) with a total band score of 6.5 or higher. The Admission’s office staff will verify all IELTS scores, either prior to or at the time of submission of application credentials.

TOEFL and IELTS scores must not be more than 24 months old at the time the application credentials are reviewed in the Graduate School.

The Graduate School will routinely waive the TOEFL/IELTS for applicants who have received a baccalaureate degree or graduate or professional degree, within the last 24 months from a school where English is the primary language of instruction in a country where English is the native language.

Official English speaking countries, in addition to the U.S. include: Antigua, Australia, Bahamas, Bahrain, Bangladesh, Barbados, Barbuda, Belize, Bermuda, Botswana, Canada, Dominica, Fiji, Ghana, Grand Cayman Islands, Grenada, Guam, Guyana, Irish Republic, Jamaica, Kenya, Lesotho, Liberia, Malawi, New Zealand, Nigeria, No. Mariana Island, Pakistan, Papua New Guinea, the Philippines, Sierra Leone, Singapore, St. Kitt & Nevis, St. Lucia, St. Vincent & Grenadines, Swaziland, Tanzania, Tobago, Trinidad, Uganda, the United Kingdom, Virgin Islands, Zambia and Zimbabwe.
Department of Agronomy Credit Hour Requirements for Ph.D. students
(Effective Spring 2011)

Students (starting prior to Spring 2011) who do not have an approved plan of study by the Graduate School will have the option to follow the past plan (page 28) or be included in the new plan. Students who have an approved plan of study by the Graduate School do not qualify for this option. Students entering in January 2011 or later can only follow the new credit hour requirement.

- Total of 36 credit hours for Ph.D.
  - 27 course credits*, plus the required 9 departmental core credits = 36 credit hrs.
- Six credit hours may be independent study, but not with the student’s major professor. Students must have prior approval by Agronomy Graduate Committee for independent study credits—provide objectives, syllabus and deliverables.

- Departmental Core of 9 credit hours include:
  - Statistics (STAT 503 or 611, or equivalent) 3 credits
  - Statistics 51200 (encouraged) or 51400 3 credits
  - Ethics (GRAD 61200) 1 credit
  - Seminar (AGRY 69600, 59600, 59700) 2 credits

- Preliminary Exam structure would remain the same as currently used. No qualifying exam required. (Note: this preliminary exam structure will be reviewed in the future by Agronomy faculty.)

- Students may take more than 36 credits as directed by their discipline or major professor.

Exception: Plant Breeding and Genetics Core Course Requirements and Preliminary Exam Structure

- Plant Breeding and Genetics Core Course Requirement—minimum of 24 course credits (includes the 9 departmental core requirements plus minimum of 15 credits in plant breeding and genetics), with a competency-based preliminary exam at the end of the fifth semester. Details of this program stated in the attached curriculum and preliminary structure document.

- Current students who have not filed a plan of study by August 2010, will have the option to follow the current requirements or be included in the new plan. Students entering on or after January 2011 must follow the new Ph.D. credit hour requirements initiated in this memo.
Core course requirements and preliminary exam structure for PhD students in the Agronomy Department area of specialization: Plant Genetics and Breeding (PGB)  
Track II

Faculty in PGB have the option to follow an alternate departmental path for graduate student training. Track II has reduced course requirements and an accelerated, competency-based preliminary exam to be taken by the end of the fifth semester.

I. Course Work
Minimum of 15 credits Core Courses in Plant Genetics and Breeding (in addition to nine credits of Department Core Requirements). Minimum of 24 course credits overall

Advanced Genetics and Breeding
AGRY605, Advanced Plant Breeding 3
AGRY530, Advanced Genetics 3

Plant Molecular and Cell Biology (at least one from the list below) 3

Plant Cell biology, AGRY 598
Plant Growth and Development, BTNY 552?
Molecular Plant Phys, HORT 551
Plant Molecular Biology, BIOL 550

Quantitative Genetics and Genomics (at least one from the list below) 3

Genomics, AGRY 600
Quant. Genetics, AGRY (M. Tuinstra, AGRY 611)
Population Genetics, (B. Muir, AGRY 511)
QTL Analyses, (R. Doerge)
Others to be added.

Elective (at least one) 3
Any 500+ level course, within or outside an area of concentration
Note: 300 and 400 level courses will not count toward the 24 credit hours required for the PhD. Course credits taken at other institutions for the MS degree, must be advanced graduate level courses to be accepted toward the 24 credit hours.

Areas of concentration in the PGB area

Competency areas:

Statistics (mandatory for all Ph.D. students in the Department): ANOV (STAT 503/511 or equivalent) AND Regression (STAT 512 or equivalent) OR Experimental Design (STAT 514 or equivalent).

Plant Breeding AGRY 605, or equivalent. Plant breeding methods and their applications, selection and experimentation with plant populations in field, greenhouse and controlled chamber conditions, analysis of qualitative and quantitative traits, integration of phenotyping and genotyping with molecular technologies, genetic mapping, genetic linkage, heritability, analysis of genetic gain from selection, heritability, analytic breeding, interspecific gene transfer and utilization. Demonstrate ability to develop, in form of research proposals, crop improvement and genetic research objectives and research plans.

Plant Genetics AGRY 530 – to be renumbered as 630, STAT 512 or STAT 598 and BIOL598Z, or equivalents. Strong fundamentals in both Mendelian, non-Mendelian inheritance, and molecular genetics. Students should have a full understanding of modern molecular genetics and have the ability to analyze mutants and genetic interactions. Knowledge of gene mapping through the construction and use of
recombinant inbred lines and recombination-based mapping using molecular markers. Know experimental techniques to determine cell autonomous vs. non-cell autonomous functions. Knowledge about plant reproduction, genetic imprinting, and epigenetic phenomenon.

Genomics and Quantitative Genetics: (competency in subject areas similar to the content in AGRY 600 and Bioinformatics – STAT598B, BIOL595B, CHM599A). Emphasis on genome structure and analysis, molecular methods for large-scale mapping of genes and genetic markers, and systems-level evaluation of phenotype and gene function.

Quantitative Genetics ANSC/AGRY/FNR 511, ANSC/AGRY 611, or equivalents. Quantitative genetics methods and tools, and their applications to breeding, genetics and evolution of plants--specifically in the analysis of changes in allele/gene frequencies in populations due to genetic drift, selection and mutation. Demonstrate ability to use, integrate and develop quantitative methodology in the development and analysis of complex genetic data sets.

Plant Molecular and Cell Biology: Course work in modern plant molecular and developmental biology. Plant Growth and Development BTNY 520?, Plant Molecular Biology BIOL 550. Integration of molecular genetics to basic problems in plant growth and development. Additional courses in this area focus on plant science at the level of cellular compartmentalization of functions, protein trafficking, cell wall biogenesis, signal transduction (Plant Cell biology AGRY 598). Cell biology questions that scale to the physiology of tissues and organs are the topic of Molecular Plant Phys HORT 551.

The advisory committee for respective PhD students could (and likely will, in the interest of helping the student pass the Prelim Exam) require additional courses, depending on the student’s primary area of interest (i.e., plant breeding, genetics, genomics), thesis research area, and prior courses taken.

II. Preliminary exam: a competency based exam that is used as the basis to admit a student into candidacy for a Ph.D.

Students must take their preliminary exam by the end of their 5th semester. Students who do not pass will have one additional attempt. Students must have passed the preliminary exam by the end of the 6th semester or they will be removed from the program.

A. Preliminary exam structure: A faculty representative of the PGB group will act as the exam coordinator. This individual will match student exam content with the appropriate faculty. The exam committee will be comprised of four individuals. Up to 2 can be from the student’s advisory committee, 2 will be from outside of the students advisory committee. All four will be content experts in areas of concentration that are suited to a particular student’s topic area. The student’s major professor can attend the preliminary exam, but only as a non-participating observer.

B. Preliminary exam content: The exam will have a written and oral component. The exam will be centered on a research proposal that is distinct from the student’s thesis research in that the central hypothesis and specific aims of the proposal are not identical to the thesis project or any grant proposal to which the student has been given access. The preliminary exam coordinator will get written confirmation of this from the student’s major professor.

The proposal will have a background section, a well-defined knowledge gap, a central hypothesis, and specific aims that test the central hypothesis. The written exam will test the student’s ability to command key, current knowledge and develop a problem solving strategy to answer new questions. The exam coordinator and the exam committee will review an outline of the proposal addressing the points above, prior to holding the exam and, typically, before the student writes the proposal. If the proposal is deemed as not defendable the student will get feedback from the exam chair and then have a second and last attempt to submit a proposal.

The oral exam will test depth and breadth of knowledge in areas of concentration that are central to the PGB discipline area. Specific details of the proposal will also be examined during the oral session. Upon passing the preliminary exam the student will be admitted to candidacy.
MINIMUM COURSE REQUIREMENTS—Ph.D.
(Effective prior to Spring 2011)
(Fall 2010 beginning students may take this program or the new program
that goes into effect January 2011)

Ph.D.
• 45 credit hours
• Including 2 hrs seminar
• ENTM 612 required

Minimum Requirement

<table>
<thead>
<tr>
<th>Credit Type</th>
<th>Minimum Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Credits</td>
<td>45*</td>
</tr>
<tr>
<td>Research Credits</td>
<td>45**</td>
</tr>
<tr>
<td>Total Credits</td>
<td>90 hours</td>
</tr>
</tbody>
</table>

* Can transfer 24 course credits from M.S.
** Can transfer 6 research credits from M.S.

90 credits hours required (30 from a Master’s, 21 course hours and at least 15 research hours)

If you do not have a Master’s degree you will need 90 credit hours (45 course hours and 45 research hours).
MINIMUM COURSE REQUIREMENTS—M.S.

M.S. - Non-thesis
33 credit hours, including 1 hour seminar
3, but not more than 6 credits of special problems
ENTM 612 required

M.S.
24 credit hours
1 hour seminar
ENTM 612 required

Master’s Degree

<table>
<thead>
<tr>
<th>Minimum Requirement</th>
<th>Course Credits</th>
<th>Research Credits</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
<td>6</td>
<td>30</td>
</tr>
</tbody>
</table>

30 credit hours required (24 course hours and at least 6 research hours)

MINIMUM TIME IN PROGRAM

<table>
<thead>
<tr>
<th>Appointment Level</th>
<th>Master’s Degree</th>
<th>Doctoral Degree with Master’s</th>
<th>Doctoral Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>.50 FTE (graduate)</td>
<td>1 year</td>
<td>2 years</td>
<td>3 years</td>
</tr>
<tr>
<td>.75 FTE (graduate)</td>
<td>1.5 years</td>
<td>3 years</td>
<td>4 years</td>
</tr>
<tr>
<td>1.00 FTE (graduate)</td>
<td>2 years</td>
<td>4 years</td>
<td>6 years</td>
</tr>
<tr>
<td>Staff (AP, clerical, service)</td>
<td>2 years</td>
<td>3.3 years</td>
<td>5 years</td>
</tr>
</tbody>
</table>

MAXIMUM TIME IN PROGRAM

Master’s Degree—4 years
Doctoral Degree—6 years with an M.S.; 8 years with only a B.S.
REGISTRATION

Assistantships and Fellowships

As mentioned previously, assistantships are governed by the professor and his/her ability to fund a graduate student. These are generally available on a half-time basis. Fellowships are obtained by students through a variety of government, foundation, industrial, or individual sources. Most assistantships are for research only, although a limited number of teaching assistantships are available. See Dr. George Van Scoyoc for more information about these teaching assistantships.

Students on a non-thesis option are not offered an assistantship.

If a student is on an appointment, research must begin within the first 6 weeks of a semester (3 weeks for summer term) in order to be eligible for fee reduction.

CORE SCIENCE REQUIREMENTS FOR THE Ph.D. DEGREE

The following core science and mathematics courses, or their equivalent, are required of all Ph.D. candidates. Students deficient in these courses will be require to take them during their degree program. These remedial courses may be taken for a letter grade (A, B, C, ….) or Pass/No Pass.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Requirement</th>
<th>Purdue Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMISTRY</td>
<td>General plus one semester of:</td>
<td>CHM 111/112*</td>
</tr>
<tr>
<td>(9 credit minimum)</td>
<td>Organic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inorganic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analytical</td>
<td></td>
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<tr>
<td></td>
<td>Physical or Biochemistry</td>
<td></td>
</tr>
<tr>
<td>PHYSICS</td>
<td>General</td>
<td>PHYS 220/221*</td>
</tr>
<tr>
<td>(6 credit minimum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>Calculus</td>
<td>MA 223/224*</td>
</tr>
<tr>
<td>(6 credit minimum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOLOGY</td>
<td>General</td>
<td>BIOL 110/111*</td>
</tr>
<tr>
<td>(8 credit minimum)</td>
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<td></td>
</tr>
</tbody>
</table>

*or equivalent

Students can test out of MA 223 and MA 224 by going to the Undergraduate Services Office, Room 242 of the Math Building to schedule an appointment to take a credit exam.
DEGREE REQUIREMENTS

1. English proficiency requirements must be met before foreign students can submit their plan of study.

   English proficiency of domestic students will be left to the discretion of the advisor and advisory committee. Students who wish help with their writing can obtain more information from the Purdue Online Writing Lab (OWL) at http://owl.english.purdue.edu/.

2. The selection of an advisory committee and the filing of the plan of study must be completed before the end of the student’s second semester.

   **Failure to file a plan of study by the end of the second semester will result in loss of assistantship support and termination of the student’s study program.**

3. Before the plan is typed the student should meet with his/her advisory committee with a rough draft of the plan of study. Plans of study will be typed by the student on the web and sent to the graduate secretary to check for errors. After approval of the plan of study by the Agronomy Graduate Committee the student will be notified. Only at this time should the student save it as final. The form will then be routed electronically to their advisory committee.

4. After the plan is approved by our Graduate Committee the student will then route it to his/her committee members for their electronic signature.

   Keep copies of all paperwork and make sure that these deadlines are met. Assume responsibility and ownership of your graduate program.

5. In the middle of the second semester, letters will be sent to all students who have not filed their plan of study. Their major advisors will receive a copy of the letter. Penalty for not filing, according to the rules set by Purdue’s Graduate Council, the student will lose their assistantship. Under special circumstances where the document cannot be filed within the time requirement, an extension of one semester will be considered if the student’s major advisor writes a letter of explanation to the departmental graduate committee.

ADVISORY COMMITTEE

The Advisory Committee will consist of at least three members for Masters candidates. If the student intends to continue his work toward a Ph.D., it is recommended that one member of the Masters’ Committee be from outside the Agronomy Department. The Advisory Committee will consist of four members for Ph.D. candidates with one member from outside the Agronomy Department.

Major professors are expected to convene a meeting with each students advisory
committee to discuss the students plan of study and proposed research. This must be done before the Graduate Committee will approve the plan of study.

**All students must have a minimum of one committee meeting a year.** Students are strongly encouraged to have more than one meeting a year and this should be discussed with your advisor. The graduate student will arrange the time and place of their meetings based on the availability of the advisory committee. The student will file a report of the meeting in the Agronomy Graduate Office. A form is available in the Graduate Office. The report will include a note of the student’s progress, any recommendations from their committee members, and signatures of all their committee members.

**PLAN OF STUDY**

This is a list of courses that meet the needs of each student as determined by the advisory/graduate committee and approved by the Department’s Graduate Committee, the Dean of the College of Agriculture, and the Dean of the Graduate School. The Plan of Study should be filled out by the student and reviewed by the committee before the end of the second semester.

Neither 100- nor 200-level courses may appear on a plan of study. Otherwise, requirements for the numerical level (300 through 600) of courses are determined by each department or administrative unit subject to the restriction that not more than a total of six 300- or 400-level course credit hours may appear on a plan of study.

Courses will be listed on the Plan of Study under the category heading “Primary Area” or “Related Area”. Note: Courses taken that are NOT on the plan of study can be taken as PASS/FAIL.

Courses listed as “Special Problems” should be no more than 3 research hours, taught/supervised by someone other than the major professor, and the problem should be on something other than the students thesis research. Prior approval is required.

**PROCESSING THE PLAN OF STUDY**

You can access the electronic plan of study form via myPurdue. To begin your plan of study, click on the Plan of Study Generator (POSG) link, then click on “Create new plan of study” link. Once in the POSG, refer to the Help buttons located on each page to assist you in using the electronic POSG. You do not need to complete the entire form in one sitting; you may save your plan of study and return to it later. You may not bookmark any pages within the Graduate School link. To return to the POSG you must login to myPurdue.

When you have completed your plan of study and feel it is ready for review by your advisory committee, submit your plan as a Draft. All plans of study must first be submitted as Draft before you can submit your plan as a Final. While your plan is in Draft status, review the information with your advisory committee and with Karen Clymer to ensure that it satisfies department and Graduate School policies. Use your draft as a basis to discuss your academic and research goals with your advisory committee members.

The POS is submitted to the Agronomy Graduate Committee for review and approval along with other forms (committee meeting forms, basic science requirements, and transcripts). If the Agronomy Graduate Committee does not approve a student’s plan of study then the student must meet with his/her advisory committee and discuss the recommended changes. If there is justification for not following the recommendations of the Agronomy Graduate Committee a written and signed statement can be submitted by the advisory committee/advisor.
Once the Advisory committee and Agronomy Graduate Committee has verbally accepted your plan of study, return to the POS and submit your plan as “Final.” Only you can submit your plan as Final; this indicates your signature. The plan of study form will be electronically routed, reviewed and, if approved, signed by the departmental coordinator, your advisory committee, the department head, and the graduate school. You may check the status of your plan at any time by returning to the POSG and clicking on the Display Submitted Plan of Study link. After the form has been completed and approved (processed by the Graduate School) it can be viewed, but not altered. Any changes to the plan require the electronic Change to Plan of Study form.

Ph.D. candidates need to fill in the form for the basic science course requirements (e.g. general calculus, biology, physics and chemistry). Advisory committee members must sign the form if they believe students have met the basic requirements otherwise the graduate student must complete the courses before they can graduate.

Courses taken that are NOT on the plan of study can be taken as Pass/Fail.

READMISSION

An applicant who, after being granted admission by the Graduate School, does not enroll for three or more consecutive academic sessions (four or more if change of date has been approved) must submit a new application. Updated or additional admission information may be required. Conditions may be placed on admission.

Students who have interrupted their graduate study must submit a new application if more than three consecutive academic sessions have elapsed since their last registration.

Five-year Rule: Course credits earned by a student whose graduate study and/or professional activity has been inactive for five years or more cannot be used on a plan of study for an advanced degree. A plan of study approved prior to such a period of inactivity is invalid. A preliminary examination passed prior to such a period of inactivity is invalid.

GRADES

In general, a student can remain in good standing by maintaining a GPA of 3.0/4.0 or better. Those students on assistantships or fellowships must maintain an index of at least 3.0/4.0 (“B” average). All courses that are taken, including those not listed on the Plan of Study are included in your GPA. The student also is expected to earn S grades for research registration. Two consecutive sessions of U grades for research registration mandate that the department take formal action and inform the student, in writing, and the Graduate School with regard to discontinuation or conditions for continuation of the student’s graduate study.

Courses taken as pass/not pass or satisfactory are unacceptable on plans of study.

EXAMINATIONS

Obtain forms for scheduling all oral exams from the Graduate Secretary. They must be completed two weeks before the examination.

PRELIMINARY EXAMINATION (Ph.D. Candidates Only)
After the student has completed almost all of the formal course requirements, he/she becomes eligible to take the preliminary examination. The preliminary examination is a comprehensive review of the student’s knowledge in the area in which he/she is seeking a Ph.D. degree. The purpose of the preliminary examination is to determine if the student possesses the requisite knowledge to be admitted to candidacy for the Ph.D. degree, if the student should enroll in additional course work, or if the student should be dropped from graduate study. Successfully completing the preliminary examination indicates that the student is adequately trained to make a contribution to the state of knowledge in his/her area of specialty. The material covered on the preliminary examination will not be oriented to that already tested in formal course work, but rather will involve an evaluation of the students ability to reason and perform a synthesis of numerous facts to arrive at a logical conclusion or answer. The preliminary examination must be taken at least two academic sessions before the final examination.

The preliminary examination for the Ph.D. degree shall consist of at least three three-hour written examinations and an oral examination. The written examinations must be taken within a period of six weeks. Professors serving on advisory committees of agronomy students will give written exams and will give instructions as to any reference material the student may use during the exam. Examinations in the “related areas of study” will be governed by the professors in the departments involved. After January 2011, preliminary exams for the plant genetics and breeding (PGB) students are handled through the PGB exam committee.

**FINAL EXAMINATION (Masters and Ph.D. Candidates)**

All students planning to defend their thesis will have a committee meeting to determine if research is sufficient and all courses on plan of study have been taken. A form is available in the Graduate Office (Room 2-444).

A final oral examination of Masters and Ph.D. candidates is required. Written examinations of Masters candidates planning to continue work toward the Ph.D. are recommended. A minimum of three two-hour examinations are required for the masters non-thesis option. These are to be administered by the Advisory Committee. The timeline and thesis requirements are given below.

The final examination must be scheduled **two weeks** before the intended date. The form may be obtained from the Graduate Office (Room 2-444).

The final M.S. and Ph.D. thesis examinations are open to faculty and students. The candidate should prepare a synopsis of the thesis research for the first part of the examination. An email will be distributed 2-3 days prior to the examination. Seminar credit may not be given for this examination presentation.

**THESIS**

a. **Preparation of a Thesis Proposal.** Ph.D. and thesis option master’s students are expected to prepare a thesis proposal. It should be developed in consultation with the advisor and should include the following: brief review of pertinent literature, a clear statement of objectives, and general experimental approach.

The thesis proposal should be approved by the advisor and the advisory committee prior to
undertaking the research.

b. Theses must be prepared according to University format requirements, as described in *A Manual for the Preparation of Graduate Theses*. The manual is located at: http://www.gradschool.purdue.edu/downloads/thesis/graduate-thesis-manual.pdf

c. In addition to stating the University thesis format requirements, established by the Graduate School, this manual delineates regulations concerning the use of copyrighted material in a thesis. In addition, copyrighted computer software programs may not be used without permission, and their use must be acknowledged. For matters concerning format of references, SI units, etc., refer to the *Publications Handbook and Style Manual* published by the American Society of Agronomy, Madison, WI.

d. A first draft of the thesis should be in the hands of the major professor at least six weeks before the end of the session in which conferral of the degree is expected.

e. An original copy of the thesis and three duplicate copies must be submitted to the major professor at least three weeks before the final oral examination date. The thesis must bear the written approval of the professor who has directed the research before it is submitted to the final examining committee. Each member of the examining committee must receive a copy of the thesis at least two weeks before the date of the final oral examination.


**Graduate School Thesis Office**

All thesis-option graduate students at Purdue must deposit the final products of their research in the Graduate School Thesis/Dissertation Office.

They will help you ensure that all pre-requisites for deposit have been fulfilled and that your thesis or dissertation meets the quality standards established by the Graduate Council Standing Committee on Theses and Dissertations and as outlined in the *Manual for the Preparation of Graduate Theses* (Seventh Revised Edition, 2006).

Keys to successful and stress-free deposits are planning and preparation. Familiarize yourself with Graduate School requirements and deadlines as well as those established within your department. Most discrepancies can be easily avoided if candidates carefully review the thesis preparation manual, are meticulous in their work, and ask questions in advance.

*Please note that we no longer schedule precheck appointments as these have been replaced by the on-line tools available on their website as well as our scheduled presentations to departments, organizations, and interested groups.*

To schedule your final thesis deposit appointment, or request a thesis formatting and deposit presentation, please contact Mark Jaeger at 494-2600/markj@purdue.edu or Anita Park at 494-
Plagiarism
A plagiarism detection service designed as a self-check tool to prevent instances of unin-
tended plagiarism, is available through the Office of the Vice President for Research for fac-
ulty or graduate students who may wish to screen documents (e.g., publication manuscripts,
grant proposals, dissertations) prior to submission. The service is free and is designed for
individual use only; you must be the author or co-author of any work submitted. To use the
service, see local administrators Linda Zimmerman in EDCI or Sandra Olson in EDST.
# AREAS OF SPECIALIZATION

## PLANT GENETICS AND BREEDING

Required courses
Students must choose a minimum of one course from each of the three topic areas listed.

<table>
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<tr>
<th>Topic</th>
<th>Statistics</th>
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## SOIL SCIENCE (intended to replace all the soils related areas of specialization currently listed)

MS students must complete 12 credits from courses listed in Group 1.
Ph.D. students must complete 15 credits of which 12 credits must be from courses listed in Group 1 and remaining credits from either Group 1 or 2.

Equivalent Group 1 graduate courses from another University taken prior to enrollment in graduate studies at Purdue may be applied towards the Group 1 course requirement. However, at least 6 credits from either Group 1 or Group 2 must be taken while enrolled in the graduate program at Purdue. Also, an MS student may apply Group 1 courses or equivalent graduate-level courses from another university taken as an undergraduate towards the specialty area requirements but these courses do not count towards the credits needed for their MS degree.

### GROUP 1

AGRY 540  Soil Chemistry  
AGRY 560  Soil Physics  
AGRY 565  Soil Classification & Survey  
AGRY 580  Soil Microbiology  
AGRY 555  Soil & Plant Analysis

### GROUP 2

AGRY 544  Environmental Organic Chemistry  
AGRY 598  Soil and Water Remediation  
AGRY 650  Clay Mineralogy  
AGRY 670  Physical Chemistry of Soils  
AGRY 585  Soils and Land Use  
AGRY 649  Molecular Microbial Ecology  
AGRY 655  Soil Genesis Classification  
AGRY 675  Advanced Soil Physics

The following are lists of courses recommended for those students wishing to list one of the other Areas of Specialization. The specific courses and number of credits required are presently determined by your advisory committee.

## CROP MANAGEMENT & ECOLOGY

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<tr>
<td>ASM 521</td>
<td>Soil &amp; Water Conservation Management</td>
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<td>AGRY 505</td>
<td>Forage Management</td>
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<td>AGRY 520</td>
<td>Principles &amp; Methods of Plant Breeding</td>
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<td>Crop Physiology &amp; Ecology</td>
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<td>Boundary Layer Meteorology</td>
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<tr>
<td>AGRY 555</td>
<td>Soil &amp; Plant Analysis</td>
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<td>AGRY 565</td>
<td>Soil Classification, Genesis, and Survey</td>
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**CROP PHYSIOLOGY, BIOCHEMISTRY AND MOLECULAR BIOLOGY**

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# GRADUATE STUDENT SUGGESTED CLASSES OUTSIDE THE AGRONOMY DEPARTMENT

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<td>ABE 526</td>
<td>Watershed Systems Design</td>
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<td>C E 383</td>
<td>Geotechnical Engineering</td>
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<td>C E 542</td>
<td>Hydrology</td>
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<td>C E 544</td>
<td>Subsurface Hydrology</td>
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<td>C E 545</td>
<td>Sediment Transport Engineering</td>
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<td>C E 559</td>
<td>Water Quality Modeling</td>
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<td>Statistics</td>
<td>STAT 503</td>
<td>Statistical Methods for Biology</td>
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<td>STAT 512</td>
<td>Applied Regression Analysis</td>
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<td>STAT 514</td>
<td>Design of Experiments</td>
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STUDENT GRANTS AND FELLOWSHIPS

Purdue
1. Frederick N. Andrews Fellowship
2. George Washington Carver Fellowship
3. Charles C. Chappelle Fellowship
4. Dissertation Fellowships
5. David M. Knox Fellowship
6. Lynn Fellowship
7. Purdue University Doctoral Fellowship
8. Ross Fellowship
9. Special Initiatives Fellowship

Other (See grad web site http://www.gradschool.purdue.edu/funding/)
1. Department of Agriculture — National Needs Graduate Fellowships (NSF)
2. Department of Education — Graduate Assistance in Areas of National Need (GAANN); Jacob Javits Foundation Fellowship
3. National Aeronautics and Space Administration (NASA) — Earth System Science Fellowship Program; Goddard Coastal Research Graduate Fellowship Program; Graduate Student Researchers Fellowship (GSRP); Harriet G. Jenkins Predoctoral Fellowship
4. National Institutes of Health (NIH) — National Research Service Award (NRSA) Research Training Grants; National Research Service Award (NRSA) Fellowships
5. National Institute for Occupational Safety and Health (NIOSH) Training Grant
6. National Science Foundation — Graduate Research Fellowship; Integrative Education Research Training (IGERT); Vertical Integration of Research and Education in the Mathematical Sciences (VIGRE)
7. Radioactive Waste Management Fellowship
8. Paul and Daisy Soros Fellowships for New Americans (http://www.pdsoros.org)

STUDENT AWARDS

Department
1. Graduate Student Award for Outstanding Student in Education
2. Graduate Student Award for Outstanding Student in Extension
3. Graduate Student Award for Outstanding Master’s Student
4. Graduate Student Award for Outstanding Ph.D. Student
5. George D. Scarseth Scholarship Award (Travel award to ASA meetings)
6. John Axtell Graduate Student Award in Plant Breeding and Genetics
7. Wyman E. Nyquist Memorial Graduate Scholarship
8. Marvin and Barbara Phillips Memorial Graduate Scholarship
9. Wayne P. Rothgeb Memorial Graduate Scholarship
10. Joe L. White Graduate Student Award in Soil Chemistry and Mineralogy
11. M.O. Pence Award (Agronomy Extension and/or Applied Research)
University
1. American Seed Research Foundation
2. Sigma Xi Graduate Student Research Awards
3. J. Fielding Reed/Phosphate and Potash Institute
4. Stevan J. Kristof Outstanding Graduate Student in Remote Sensing

National
1. American Society of Agronomy
2. American Seed Research Foundation
3. J. Fielding Reed/Phosphate and Potash Institute

Bilsland Graduate School Dissertation Fellowship
This fellowship is intended for students within the last 6 months of finishing their Ph.D. The intention is for those truly about ready to finish, and new procedures basically will ensure such (the intention of the donating family). Award is for 6 months, with mandatory supplement (by department of major professor) to bring it up to the normal 1/2 research assistantship. Documents required include 1) a letter of support from the major professor explaining the need for assistance, 2) the student’s CV (maximum 4 pages, including a brief summary of research progress), and 3) a copy of the student’s transcript (unofficial is OK).

Andrews/Ross/University Fellowships
These fellowships are all for new Ph.D. students (new to Purdue). These are highly competitive and for exceptional students with GPAs of 4.0 or perhaps 3.9. They provide 1 or 2 years of support from the Graduate School and require a departmental commitment of 3 or 2 years (to make 4 years total), to the student. An official offer letter to the student, guaranteeing the 4 years of funding is required before the student nomination can be submitted.

The diversity fellowship applicants need to have submitted the optional diversity essay in their application, or could be asked to do that in time for the fellowship nomination.
RULES GOVERNING AGRONOMY GRADUATE STUDENT REPRESENTATIVES

TERM OF OFFICE

A total of four (4) Agronomy Graduate Student Representatives (Grad Reps) are elected by a secret ballot to serve a one-year term. Elections for Grad Reps should be held during the spring semester with new electees taking office at the conclusion of the spring semester. Should an acting Grad Rep step down from office or graduate mid-term, a replacement will be elected at a special election to fill the position. The replacement Grad Rep will serve for the remainder of the term, which will conclude at the end of the spring semester for the school year in which s/he took office. After serving one term, should a Grad Rep wish to retain the office s/he may do so for an additional one-year term without having to undergo the election process, provided that no more than 10% of the Agronomy Students voice an objection to this Grad Rep remaining in office. If a Grad Rep has already served two consecutive terms, s/he must be re-elected in order to serve a third term.

THE ELECTION PROCESS

During the spring semester, the acting Grad Reps will call for nominations to replace the acting Reps whose two-year term is ending. Names of nominees will be supplied by the Agronomy Graduate Students and may be any currently enrolled Agronomy Graduate Student. Nominations will be collected for a time period of one week. The nominees will then be contacted and will be asked to submit a short paragraph describing themselves. These paragraphs will then be distributed to the graduate students. Shortly afterwards the election will be held. Ballots will be distributed by mail and will be collected in the main office. At the end of the election, non-returning Grad Reps or Grad Reps whose term has not yet concluded will count ballots. In the event of a tie, a coin will be flipped. The nominee whose last name is first alphabetically will be heads, the other tails. If a tie exists between more than two nominees, a second election featuring only those nominees who are tied will be held.

GRAD REP RESPONSIBILITIES

The responsibilities of an acting Grad Rep include, but are not limited to:

1) Acting as a liaison between the Graduate Students of the Department and the Faculty
2) Organizing and helping with fund raisers (such as selling drinks at Spring Fest)
3) Organizing functions of interest to the Graduate Students (i.e. picnics, short trips, sponsoring seminars)
4) Serving food at the fall picnic to welcome new students to the department
5) Championing the fight to protect the rights of the Graduate Students from being trampled on by the forces of evil.
6) Anything else that they may be asked to do.
GRADUATE STAFF ACADEMIC LOAD POLICIES AND GUIDELINES (Appendix A—Graduate Student Manual)

POLICIES

1. To be eligible to hold a graduate staff appointment during any session, an individual must be enrolled as a graduate student in a degree program and be registered for at least three credit hours of course and/or research work during the entire appointment period.
2. A graduate member of the residence hall counseling staff may register for a maximum academic load of 16 credit hours including both research and coursework per semester (subject to further restriction at the discretion of the department).
3. Students must be engaged in the type of activity for which their position is funded (e.g., students paid from instructional funds must be doing instruction, and students paid from research funds must be doing research, etc.).
4. Academic loads for a summer session should be proportional to the length of the session (as compared to the length of a semester).
5. Exceptions to provisions of this document must be approved by the dean of the Graduate School.

GUIDELINES

Guidelines for Maximum Course Plus Research Registration:

<table>
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<tr>
<th>Appointment Level</th>
<th>None</th>
<th>.25 FTE</th>
<th>.50 FTE</th>
<th>.75 FTE</th>
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<td>Payroll Code:</td>
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<td>0001G, 0002G, 0003G, or 0090A</td>
<td>18 hrs.</td>
<td>15 hrs.</td>
<td>12 hrs.</td>
<td>9 hrs.</td>
<td>6 hrs.</td>
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Guidelines for Minimum Course Plus Research Registration:

<table>
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<tr>
<th>Appointment Level</th>
<th>None</th>
<th>.25 FTE</th>
<th>.50 FTE</th>
<th>.75 FTE</th>
<th>1.00 FTE</th>
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<td>Payroll Code:</td>
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<tr>
<td>0062G or 0072G</td>
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<td>3 hrs.</td>
<td>6 hrs.</td>
<td>9 hrs.</td>
<td>12 hrs.</td>
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<td>0060A (A/P Position)</td>
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RESIDENT STUDY REQUIREMENTS

The total number of hours of academic credit used to satisfy residency requirements consists of all course credit hours that appear on the plan of study, other graduate course credit hours with grades of C or better that appear on the Purdue transcript, and research credit hours with grades of S that appear on the Purdue transcript.
1. Master’s Degree:
   a. At least one-half of the total credit hours used to satisfy degree requirements must be earned in residence on the Purdue campus where the degree is to be granted. Course credit obtained via televised instruction from a campus shall be considered to have been obtained in residence on that campus.
   b. At least 30 total credit hours are required.

2. Doctoral Degree:
   a. At least one-third of the total credit hours used to satisfy degree requirements must be earned (while registered for doctoral study) in continuous residence on the Purdue campus where the degree is to be granted.
   b. At least 90 credit hours are required.
   c. A master’s degree from any accredited university is considered to contribute 30 credit hours toward satisfying this residence requirement.

   In fulfilling these requirements, a maximum of 18 credit hours will be allowed from any one semester (maximum hours proportional to length of summer session).

   If a student completes all the academic requirements but has insufficient residence credits, a letter of explanation justifying the deficiency should be forwarded to the dean of the Graduate School. If justification is sufficient, the dean of the Graduate School may waive part of the residence requirement.
LIBRARIES

The University libraries on the West Lafayette Campus hold book and periodical collections of more than 1,800,000 volumes housed in 15 schools and departmental libraries. About 18,000 serial titles are received, including periodicals and serial publications of societies, instruction, and the federal and state governments. Local library resources are supplemented by the three million items of research materials held by the Center for Research Libraries in Chicago. Through Purdue’s membership in the center, faculty and graduate students are assured of fast access to this material through the Interlibrary Loan Office in the HSSE library. More information on the libraries is available by internet at http://thorplus.lib.purdue.edu.

In-person access to the library collection and services of Ball State, Indiana, and Indiana State universities are also available to Purdue students and faculty under a cooperative agreement.

SCHOOL AND DEPARTMENTAL LIBRARIES

Aviation Technology Library: Airport Terminal, TERM, Room 163.

Chemistry Library: (M. G. Mellon Library of Chemistry), Wetherill Lab of Chemistry, WTHR, Room 301.

Earth and Atmospheric Sciences Library: Civil Engineering Building, CIVL, Room 2215.

Engineering Library: A. A. Potter Engineering Center, First Mezzanine & Basement Floors.

Hicks Repository, Undergraduate Library, HIKS, Room B-849.

Humanities, Social Sciences and Education Library: Stewart Center, Main Floor & 3rd.

Krannert Library (Management and Agricultural Economics): Krannert Building, Second and Third Floors.

Life Sciences Library: Lilly Hall of Life Sciences, Room 2-400.


Mathematics Sciences Library: Mathematics Sciences Building, MATH, 3rd Floor.

Pharmacy, Nursing, and Health Sciences Library: Heine Pharmacy Building, RPH, Room 272.

Physics Library: Physics Building, Room 290.

Veterinary Medicine Library: Lynn Hall of Veterinary Medicine, LYNN, Room 1133.
Other Locations Where Materials are Available

Black Cultural Center Library: Room 203, Black Culture Center

Compact Storage: Room B849, Undergraduate Libraries, Lower Level

Film Library: Room B853, Undergraduate Library, Lower Level

Special Collections: Room 428, Stewart Center

CUTTING THE RED TAPE

WHO TO SEE

<table>
<thead>
<tr>
<th>Needs</th>
<th>Individual</th>
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<tbody>
<tr>
<td>Software</td>
<td>Tom Pluimer</td>
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<td>Computer Programming</td>
<td>Phil Hess</td>
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<tr>
<td>Computer Hardware</td>
<td>Tom Pluimer</td>
</tr>
<tr>
<td>Statistical Consulting</td>
<td>Judy Santini</td>
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<td>Vacation Information</td>
<td>Brenda Warren</td>
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<td>Payroll Information</td>
<td>Brenda Warren</td>
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<tr>
<td>Traveling Information</td>
<td>Lana Burnau</td>
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<tr>
<td>Ordering Supplies</td>
<td>Sherron Myers</td>
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<tr>
<td>Keys</td>
<td>Ed Stath/Biology Stores</td>
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<tr>
<td>Rooms 2-407, 2-425, and 2-426</td>
<td>Connie Foster</td>
</tr>
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<td>Third Floor Copy Machine</td>
<td>Dawn Foushi/Connie Foster</td>
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<td>Department Head Appointments</td>
<td>Sandy Spitznagle</td>
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<tr>
<td>Office Equipment</td>
<td>Joe Anderson/Sherron Myers</td>
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<tr>
<td>Greenhouse/Growth Chambers</td>
<td>Ron Steiner, Agronomy</td>
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