KANSAS STATE UNIVERSITY
GRAIN SCIENCE AND INDUSTRY

GRADUATE STUDENT HANDBOOK
2023

Medical Emergency

KSU employees in Manhattan that need medical care for a job-related injury or illness are to seek medical care as follows:

Life- threatening injury or illness:

Call **911** or report directly to the Emergency Room at

Via Christi Hospital

1823 College Avenue.

Non-life-threatening injury or illness:

Call (785) 296-2364 for authorization for non-emergency treatment (Mon. – Fri., 8 am – 5 pm). The Kansas State Self Insurance Fund will determine where you need to go for treatment. This is required prior to getting treatment to have the medical costs covered.

After hours, call either 1(800) 323-6003 or (785) 323-6000.

If an accident occurs, please report the incident to Liz Savage, SH 201 (785) 532-4054. An Accident Injury Report must be filed with the Department of Human Capital Services within three working days of the accident/injury.

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Welcome to the Department of Grain Science and Industry!

It is my privilege to welcome you to the department and wish you a rewarding, productive, and fulfilling experience with us. I look forward to getting acquainted with each of you in the coming months. Please feel free to stop by my office if I can be of any help to you.

You are joining a special department. We have a unique program and a worldwide reputation for excellence. We have been adding new facilities, new faculty, and new research areas. Our vision is to be *the* global education, research, and technology transfer leader for the global grain and plant-based food, feed, and bio-products supply chains. I am confident your presence and contributions to the department will help us achieve this vision!

This Graduate Student Handbook was prepared with input from the graduate faculty, department staff, and previous graduate students. It will answer many of the questions you may have regarding policies and procedures at KSU and within the department and will outline the academic sequence that will lead to the completion of your advanced degree. Consult the Handbook often and if you have questions, please refer them first to your major professor, our Assistant Graduate Program Coordinator, or the Graduate Program Chair.

As your program progresses, you will experience many opportunities, challenges, and rewards. Remember, your major professor is your key to success! Maintain regular contact with him or her to discuss your concerns, needs, and aspirations. Report regularly on the progress of your assigned work and academic coursework. Conducting yourself with integrity and establishing a relationship of mutual respect and trust will make your degree progress go well. There are many people in the department who are available to help you including faculty, staff, and fellow graduate students. Be sure to get to know them and actively participate in our department!

I wish you much success in your program of study as well as your personal and professional growth while you are with us.

Sincerely,

Hulya Dogan
Interim Department Head and IGP Institute Director

I. INTRODUCTION

Department History and Mission

The beginnings of the Department of Grain Science and Industry date back to 1905, within the Department of Chemistry, where work on the milling quality of new strains of hard winter wheat was initiated. In 1910, a Department of Milling Industry was established in response to the urging of the Kansas Milling Industry. Major events in the growth of the department include addition of a Feed Technology degree in 1951 and Bakery Science degree in 1963. Department activities and the experimental mill were originally located in East Waters Hall but were destroyed by a fire in 1957.

The present building that replaced the original mill was completed in 1961 and was named Shellenberger Hall. The Feed Tech building and East Waters Hall that also house departmental teaching and research activities are contiguous with Shellenberger Hall. Additional laboratory and pilot scale experimental facilities are located on Kimball Avenue in the North Campus Complex. These include the Biological and Industrial Value Added (BIVAP) building, Hal Ross Flourmill, O.H. Kruse Feed Technology Center, and the International Grains Program (IGP) Institute.

From its beginning, the department has been closely allied to the grain processing and utilizing industries. They continue to provide significant funding for facilities and programs, hire graduates, and provide advisory committees. The department's mission is closely tied to the needs of the grain industry, as well as traditional academic goals.

The mission of the Department of Grain Science and Industry is to advance the global grain and plant-based food, animal food, and bioproduct industries through scholarship, research, and outreach. That will be accomplished using a multifaceted program of teaching, research, and technology transfer program.

Graduate Faculty and Current Areas of Interest

Sajid Alavi
Professor. Ph.D. Food Science, 2002, Cornell University. Extrusion technology, numerical modeling of food processing systems, imaging of microstructure of expanded food foams, and structure-texture relationships in food foams.

Subramanyam Bhadriraju
Professor. Ph.D. Entomology, 1988, University of Minnesota. Stored grain and food-processing research entomologist, grain quality preservation, management of stored-product insects with pesticide alternatives, development and evaluation of integrated pest management programs for grain, food, feed, and retail industries.

Carlos A. Campabadal
Outreach Specialist and Instructor in Feed Manufacturing and Grain Storage, Extension Leader. Ph.D. Agricultural and Biological Engineering 2013, Purdue University. Areas of interest: grain quality management and storage, feed manufacturing, quality control, and international development (grain storage and agriculture mechanization).

Hulya Dogan
Professor, Interim Department Head and IGP Institute Director. Advisor of Alpha Mu Grain Science Honorary Society. Ph.D. Food Engineering, 2000, Middle East Technical University. Grain processing and milling, food rheology and texture, physical, textural and structural characterization of food materials, engineering applications in grain and food processing, mathematical modeling, and process optimization.

Elisa Karkle
Assistant Professor of Bakery Science, Co-Advisor of Bakery Science Club. Ph.D. Grain Science, 2011, Kansas State University. Baking science, nutrition, snack foods, product and ingredient development, shelf-life extension, and nutritional impact of sourdough.

Yonghui Li
Associate Professor. Ph.D. Grain Science, 2011, Kansas State University. Baking science & chemistry; cereal & grain chemistry; protein chemistry & applications; functional cereal foods; protein-based nano-assemblies; bioactive compounds and peptides.

Chad Paulk
Associate Professor, Co-Advisor of Feed Science Club. Ph.D. Animal Science, 2014, Kansas State University. Animal Nutrition and Feeding, impact of feed diet and animal performance, and feed safety and integrity.

Yong-Cheng Shi
Professor. Ph.D. Cereal Chemistry, 1993, Kansas State University. Starch structure and functionality, physical, chemical, and genetic modifications of starch, enzymatic modifications of biopolymers, starch digestibility and carbohydrate nutrition, uses of starch and other carbohydrates in food and other industries.

Kaliramesh Siliveru
Associate Professor, Advisor of Grain Science Graduate Student Organization. Ph.D., Grain Science, 2016, Kansas State University. Grain

Processing and Milling, Process Modelling and Simulation, Food Safety, Particle technology and materials handling, Physical, chemical, surface properties characterization and their correlation in food and feed materials.

Charles Stark
Professor, Co-Advisor of Feed Science Club. Ph.D. Feed Technology, 1994, Kansas State University. Feed mill management, feed processing, feed and ingredient quality assurance.

Xiuzhi Susan Sun
Distinguished Professor. Ph.D. Agricultural Engineering, 1993, University of Illinois. Biological material process engineering, thermal and rheological behavior and functional properties of plant polymeric materials and ingredients, bio-based adhesives and biodegradable resins.

Yi Zheng
Associate Professor. PhD. Biosystems Engineering, 2007, University of California, Davis. Bioprocessing engineering, biofuel, bio-based products, fermentation, bioprocess design/modeling, anaerobic digestion, enzyme catalysis, lignocellulosic biomass valorization, nutraceuticals/pharmaceuticals, and lignin biotransformation.

Teaching Faculty & Areas of Specialization

Paul Blodgett
Hal Ross Flour Mill Project/Program Manager and Instructor. B.S. in Milling Science and Management, 1989, Kansas State University, Technical flour and durum milling, Mill Operations.

Fran Churchill
NAMA Instructor, Professor of Practice, Co-Advisor of Milling Science Club. B.S. Milling Science & Management-Operations, 1984, Kansas State University. Technical flour milling and plant operations.

Aaron Clanton
BNEF Instructor, Co-Advisor of Bakery Science Club. MBA – General Business, B.S. Milling Science & Management-Chemistry, 1996, Kansas State University. Baking science, flour and ingredient functionality, product development, bakery operations.

Huseyin Dogan
Professor of Practice, Associate Engineer, Instructor and Stand-Alone Minor Coordinator. B.S., Mechanical Engineering, 1989, Middle East Technical University, Turkey, 1989. Process flow diagram for grain operations, flour and feed technology, 2D and 3D plant design with AutoCAD.

Jason Watt
Buhler Instructor of Milling, Co-Advisor of Milling Science Club. B.S. Milling Science and Management – Operations, 2008, Kansas State University. Technical flour milling, Plant maintenance and operations

Emeritus Graduate Faculty

Keith Behnke
Emeritus Professor. Ph.D. Grain Science, 1975, Kansas State University. Feed technology research scientist, feed processing research as it affects animal nutrition.

Jon Faubion
Emeritus Professor. Ph.D. Cereal Chemistry, 1980, Kansas State University. Cereal chemistry research scientist, experimental baking and novel oven technology, dough rheology, flour and ingredient functionality.

Ekramul Haque
Emeritus Professor. Ph.D. Agricultural Engineering, 1978, Kansas State University. Grain processing technology scientist, food and feed grains processing, grain milling and energy.

Finlay MacRitchie
Emeritus Professor. Ph.D. Physical Chemistry, 1962, University of Sydney, Australia. Relationships between grain composition and functionality and application of this knowledge to manipulation of grain/flour properties in processing and breeding, physical chemistry of colloids and interfaces.

Ronald L. Madl
Emeritus Professor. Ph.D. Biochemistry, 1973, Kansas State University. Antioxidant characterization in grain, ethanol co-product utilization, and cellulosic ethanol.

Paul Seib
Emeritus Professor. Ph.D. Biochemistry, 1965, Purdue University. Research biochemist, starch and cereal grain carbohydrates chemistry and nutrition.

II. SAFETY, HEALTH, AND SECURITY

Health, safety, and security are the shared responsibilities of each individual, the department, and the university. Faculty, students, and staff are entitled to safe working conditions. The university expects that each person in the department will work to make certain that his or her work practices and environment are safe. Everyone has the responsibility to point out, in a constructive manner, unsafe conditions or unsafe acts of others.

As you go about your work, constantly examine what you are doing and how you are doing it. In case of doubt, if you are carrying out an operation for the first time, or if you have little laboratory experience, consult your supervisor, major professor, or another knowledgeable resource for guidance and training. The best method includes the safe way to do the job and the only dumb question is the unasked question!

Facilities & Safety

The overall safety and appearance of our facilities are imperative to the department. Periodic training sessions are **required** of all graduate students and other personnel in the department. Additionally, periodic inspections of the departmental laboratories and pilot plant facilities to assure proper maintenance of those areas. Each laboratory and pilot plant are supervised by a faculty member, who may designate a graduate student to assist in keeping the facilities in a safe and orderly condition.

Children are not permitted in the laboratories unless approved by the PI. You should only work in the laboratories when there is another person near enough to help you in case of an emergency. You are encouraged to recommend changes or additions to the health, safety, and housekeeping procedures when you have new information or knowledge or become aware of an unsafe practice.

- Know fire extinguisher locations.
- Know eye wash and safety shower locations.
- Consult material safety data sheets (MSDS) in your lab before starting experiment.
- Think in terms of safe practices constantly.
- Be familiar with every step of the job you are doing.
- Maintain an awareness of hazards involved.
- Guard your co-workers' safety as if it were your own.
- Know how to respond in case of an accident. Emergency telephone numbers should be posted near every telephone.
- Always take responsibility for your personal safety.
- Remember, the safe way is the best way.

Employees in Grain Science are required to take on-line Safety Training Modules. These will need to be completed and the test scores received by the safety coordinator before students are able to work in the laboratory.

The department will offer mandatory safety training sessions which all new graduate students will attend.

The results will be forwarded to the appropriate office in the College of Agriculture, and they will inform your advisor/supervisor that you have completed the required training. See your advisor/supervisor for other required safety training.

Familiarize yourself with these guidelines and take advantage of the periodic training provided by the department and university.

The names of persons responsible for each laboratory and their telephone numbers are posted on each laboratory door. Those people should be contacted to request permission to use the laboratory or equipment, or in case of emergency.

Laboratory Use Permission

All laboratories in the department are the assigned responsibility of a faculty member. The faculty member will determine priorities for use and establish safety and housekeeping standards within department guidelines and sign-up procedures for the laboratory. All department members are required to obtain prior permission and operating training for use of a laboratory or piece of equipment.

All equipment is to have a set of operating instructions, safety guidelines, training, and sign-up procedures. An operating manual for each area or piece of equipment is to be available in the immediate location of the equipment and a copy in the department central file. Anyone using departmental equipment is responsible for the receipt of proper training, following all safety and operating instructions, and cleaning the equipment and area following usage. Any damage or improper function of the equipment must be reported immediately to the responsible faculty member.

Building Security

Security is everyone's responsibility. University buildings are open for general use from 7 a.m. to 5

p.m. Monday through Friday. At all other times, doors should be locked, except when other arrangements have been made with the department head or a faculty member. Buildings are locked to safeguard the security of department facilities, equipment, and the safety of employees working in the building.

Doors should never be propped open during times when they are to be locked.

Department Keys

Department keys are issued through the Department Human Resource Specialist in SH 201. University keys are not to be duplicated and must be returned to the department before your departure after graduation.

Failure to return any assigned keys will prompt the University Key Control Office to put a hold on your student records, which will prevent you from securing your transcripts and/or diploma.

To replace lost or stolen keys, you must contact the Human Resource Specialist. A replacement fee will be charge before a new key is issued.

Personnel with keys should not admit unauthorized persons. You are responsible for the behavior and activities of anyone you admit. If you observe a door open at times it should be locked, lock it if possible. Otherwise, call campus security at **(785) 532-6412.** Also, report any unauthorized persons in the buildings to campus security.

III. DEPARTMENT POLICIES

Working Hours

Graduate students in the department of Grain Science and Industry who are on research assistantships (GRA) are considered unclassified employees for some benefit purposes. Employees appointed on a GRA **do not earn vacation or sick leave.** However, GRA students on a 0.5 (FTE) appointment receive university health insurance benefits and resident rate tuition. Work schedules vary for each lab and experiment, advisors will set schedules for exact workdays and hours.

Leave Policy

Graduate assistants must receive approval in advance from their major professor **for any time off**. **Graduate assistants must inform the HR specialist** in the main office when they are out of the department for Personal Leave as well as for Department Official Leave.

Payroll Information

Pay periods are bi-weekly. There are twenty-six pay periods for twelve-month appointments. Bi-weekly pay periods begin Sunday and end on the Saturday two weeks following. Pay periods are paid on the second Friday following the end of the pay period. All students that receive an assistantship will also need to set up an electronic direct deposit, for payroll purposes, at the time of appointment. Please be aware that it can take 4 to 6 weeks from your date of hire to receive your initial paycheck. Therefore, it will be necessary to plan on personal funds to support yourself during this time period.

All students must have a Social Security Number to be appointed as a student hourly employee or as a Graduate Research Assistant. The International Student and Scholar Services (ISSS) center will help non-U.S. Citizens with the application at their orientation. Receipt of the number may take up to four weeks, and the student will not be allowed to work in the laboratory until the number is received. **If a delay of more than four weeks occurs, the Department Human Resource Office can request a substitute number for the student.**

Appointment Information Applicable to non-U.S. residents

Non-resident aliens are required to have either an F-1 or J-1 visa or a Kansas State University on Campus Work Permit (issued by the International Student Center).

The U.S. Department of Justice has established a system to verify employment eligibility (I-9 form) to prevent unauthorized employment. This form must be completed for all new employees and when the work permit for non-resident aliens has expired. The department's HR Specialist, examines and approves all necessary documents.

Graduate personnel with F-1 or J-1 visas, who are appointed to the department on assistantships, must obtain work permits from the International Student and Scholar Services (ISSS) Center. Work permits are valid for the length of the passport, visa, or until the I-20 form expires.

Maintaining Current Information

As a K-State Student, you **must maintain** updated address and phone numbers in the **KSIS** system. As a K-State Employee you **must maintain** updated address and phone number in the **HRIS** system. You are also to notify the GRSC Human Resource Specialist and your major advisor of any changes. If you are receiving an assistantship, **nothing** will be

forwarded to your new address until the appropriate updates are made in the required database systems.

Payment of Department Miscellaneous Fees

Some classes offered in the department require a fee for materials provided. All departmental course fees are collected in Shellenberger 203. Students may pay for their charges by cash, check, Visa, Master Card, American Express, and Discover credit and debit cards.

Parking in Loading Dock Area

The loading dock area in the back of Shellenberger Hall is needed to load and unload trucks making deliveries. Therefore, parking of vehicles in this area is **NOT PERMITTED** between 8:00 AM and 6:00 PM except under the following conditions:

- The person is a client of the department and obtains a "Visitor" permit from the Main Office, SH 201.
- Time parked will not exceed 1 hour except by permission of department head (a permit must be displayed) (approved by faculty 5/24/93).

Parking arrangements must be made in advance by contacting the main office in Shellenberger 201 or by contacting Michelle Olesky at (785) 532-4052 or olesky@ksu.edu. **Parking without authorization will be subject to parking fines and possible vehicle towing.**

Travel Report

1. For all travel on an account, the account number must be listed on the travel request. Each faculty member is responsible for making sure he/she has funds to pay for the travel in the account listed whether for the faculty member or the student.
2. The travel processor will prepare a Travel Form to be signed by the Business Manager or the authorized Department Accounting Representative and then the claimant (person traveling).
3. The claimant is to pay for all expenses, and then claim reimbursement from the state.
4. After travel is completed, all travel expenses incurred by the claimant will be turned into the travel processor. A detail of all expenses will be done on a travel expense form with all RECEIPTS (i.e., hotel, rental car, meeting registrations payments).
5. The travel reimbursement form will then be prepared and the claimant and the authorized Department Accounting Representative will sign for reimbursement. This form is then sent to voucher audit and the claimant will receive payment within 2-3 weeks.
6. When travel is all in-state, an advance travel request is not required. However, reimbursement of expenses is handled in the same manner.
7. If a state employee uses a state vehicle from the Department or the Motor Pool, the spouse cannot travel with the employee unless they are also an employee traveling on state business.
8. When registration fees are paid and meals are included as part of the registration, the per-diem allowance for those meals will be deducted from the per-diem allowed reimbursement amount for meals for that day.
9. Please confer with the travel processor if there are questions on these procedures.

2020 KSU Grain Science Department Purchasing Guidelines

For PO's, IDR's and other purchasing information, contact:
Scott Graber, Procurement Officer I
scottgraber@ksu.edu; phone: 785-532-1894
220A Shellenberger Hall

To achieve the best possible prices, the Grain Science department operates under state government and university established contracts for purchasing supplies, equipment and services. Please contact Scott for specific regulations, contracts and procedures. Below is a list of basic purchasing guidelines.

1. All external purchases of any amount require a Purchas Order (PO) number prior to purchasing any services or products from external vendors.
2. All internal purchases from other KSU departments, such as Facilities Storeroom, Chemistry Store, Animal Science Analytical Lab, etc., require an Inter Departmental Request (IDR) number prior to ordering any product or service.
3. A PO is assigned after approval from a supervisor is obtained. This can be done by copying the supervisor on the requesting email or by filling out a draw ticket (see Scott for PDF fillable form) with all required information including:
    - Vendor name
    - Departmental account to be charged.
    - Supervisor's name/signature
    - Product quantity and specific identification
    - Estimated amount
    - Shipping speed.
    - A web-link is helpful if available.
4. Ordering: Once a PO# is obtained, you may choose to order the products/services. If so please follow the following guidelines:
   All purchasing documents are necessary prior to submitting payment to the vendor. Please scan/email all documents immediately to scottgraber@ksu.edu. Here are 5 documents for accurate record keeping:
    - Draw Ticket or 'request' email.
    - PO
    - Order confirmation
    - Packing slip and/or Bill of Lading
    - Invoice.
5. Receiving: It is helpful to scan and email packing slips the same day that items/services are received, so invoice payment can proceed.
6. Purchase of $10,000.00 or above. According to KSU purchasing policy, any purchase of $10,000.00 or more, requires processing through one of the three following procedures:
    - KSU or State government contracts. If a product or service meets the specifications of a current State or university contract, the purchase can be made immediately under those contract guidelines.
    - RFP (Request for Proposal). A formal purchase request (PR) is provided to the KSU Purchasing Department along with a list of specific requirements for the purchase. After the RFP has been made available to a list of competing vendors, the responses are reviewed and returned to us for selection and approval.
    - Sole Source/Prior Authorization. A sole-source purchase (one specific vendor) and prior authorization can be requested from the Purchasing department by providing an acceptable reason for choosing a single vendor without offering a competitive bid process. Proof must be provided for the need based on unique specifications on product applications.
    - Contact Scott to initiate these types of purchase requests.

V. KANSAS STATE UNIVERSITY POLICIES

Information Technology Usage Policy

https://www.k-state.edu/policies/ppm/3400/3420.html#overview

University-wide policy for the appropriate use of all University computing and network resources. This policy is subject to all applicable laws and regulations. It is intended to reflect industry standards with regard to data security, technology, and intellectual property (IP) protection and to ensure compliance with local, state, and federal requirements. It is also intended to complement the other University policies on information technology usage and data security. See PPM 3400-3495.

Electronic Mail Policy

https://www.k-state.edu/policies/ppm/3400/3455.html

This Policy clarifies the applicability of law and certain other University policies to electronic mail. Users are reminded that all usage of K-State's information technology resources including electronic mail is subject to all University policies including K-State's Information Technology Usage Policy.

Patenting an Invention and Copyrighting Intellectual Works

https://www.k-state.edu/policies/ppm/7000/7095.html

The business of a university is the creation and dissemination of new knowledge. Patenting an invention or publishing copyrighted work and putting it to public use are valid means of accomplishing this objective. Kansas State University's policies and associated institutional procedures for intellectual property were approved by the University Faculty Senate on May 15, 2002.

Conflicts and Conflict Resolution

Conflict between a faculty member and a student can arise because of misunderstanding, lack of communication, differences in opinion, and improper actions. Understanding the basis of the conflict is critical in resolving it in timely fashion. Openness, honesty, clarity, confidentiality, and documentation are important in addressing and resolving a conflict. It is very important to recognize that all conflict should be addresses immediately without any delays. The first step is for the faculty member and the student to try to resolve conflicts amicably. It may be appropriate to involve a neutral third party, such as the department head, to mediate in resolving a conflict. All concerned parties in a conflict should try to seek a win-win solution. There are also university grievance procedures (see below) for conflict resolution. But it is desirable to resolve all conflicts internally within the department.

Graduate Student Rights and Grievance Procedure

Every graduate student has:

a. Freedom of inquiry, conscience, expression, and association and the right to petition for the redress of grievances, consistent with the First Amendment to the U.S. Constitution.

b. The right under the Family Educational Rights and Privacy Act ("FERPA") to confidentiality in the student's educational records.

c. The expectation of fair evaluation by faculty regarding assignments and academic work performed toward the completion of requirements for a particular course.

d. The right to reasonable due process in the conduct of proceedings pursuant to the provisions of this Appendix A or of any proceedings conducted under any other provisions of any other rule or regulation governing Kansas State University.

e. The expectation that the student will not suffer retaliation for seeking redress pursuant to the provisions of this Appendix A in good faith.

Every graduate student is responsible for:

a. The exercise of applicable rights and freedoms, as enumerated above, in a manner that does not substantially disrupt the operation of the institution nor infringe upon the rights of other students, faculty, or staff.

b. Completing the requirements and meeting the standards of any course in which he or she is enrolled.

c. Understanding the legal and ethical standards applicable to scholarship in general, and to the student's discipline specifically, as well as understanding the policies and procedures that the University has in place to ensure compliance with these standards.

d. Diligent pursuit and timely completion of all responsibilities associated with progress toward a degree.

The *Graduate Handbook* contains general rules and procedures governing graduate education developed by the Graduate Council. In addition, each graduate program may have more detailed departmental or program guidelines that specify how that degree program operates within general Graduate School policies, and what graduate students can expect during their graduate career. If departmental or program policies are inconsistent with Graduate School policy, the Graduate School policy is the overriding policy.

For more information, visit the Graduate Handbook, Appendix A. Graduate student Rights and Grievance Procedure web page at: http://www.k-state.edu/grad/graduate-handbook/appendixa.html

Honor and Integrity System

Kansas State University has an Honor & Integrity System based on personal integrity which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor & Integrity System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning.

A component vital to the Honor & Integrity System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, *whether or not* it is stated: **"On my honor, as a student, I have neither given nor received unauthorized aid on this academic work."**

A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

For more information, visit the Honor & Integrity System home web page at:
http://www.ksu.edu/honor

K-State Smoking Policy

As of June 1, 2018, the **smoking** of cigarettes, cigars, pipes or burning tobacco in any other form or device, as well as the use of electronic cigarettes, vaporizers, hookah or other water pipe devices and all other related devices, **is prohibited** in university owned vehicles and on university property, except inside personal vehicles. University property includes, **on the Manhattan and Polytechnic campuses**: inside buildings and structures, outdoors, and within state-owned vehicles.

IV. PLANNING AND INITIATING YOUR GRADUATE PROGRAM

First contact your major professor. All forms and correspondence should be signed electronically by the major professor and copies made for their records and for the official student file maintained in the Department.

Because Grain Science graduate students may have different undergraduate majors, the pathway to achieving the desired outcome for the MS and PhD degree, requires tailoring the coursework to fit your particular situation. Students with a solid background in a basic science may need to become acquainted with food processing by taking the Fundamentals of Processing Grain for Food. Students coming from a grain science or food science background may find it more important to strengthening their understanding of chemistry or other basic sciences.

Initially, it is necessary to not only select the classes for the upcoming semester, but also, to consider classes to be taken the second semester based on offerings available at that time of the year.

Acquaint yourself with previous work done by the research group that you are joining. Whether your orientation to research involves searching the literature, developing laboratory techniques, or performing preliminary experimentation will depend on the opportunities presented to you. If your graduate work is supported by a graduate research assistantship, the assigned duties to perform on assistantship will no doubt serve to acquaint you with the workings of a laboratory as well as getting acquainted with other researchers in the group.

Before the end of your first semester, your major professor and you **will** develop a plan of study (a list of the courses to be completed and applied towards your graduate degree.)

You are required to **maintain minimum B (3.0) grade point average.**

If you have a graduate research assistantship (GRA or GTA), **you must take a minimum of 6 (six) credit hours in the fall and spring semesters and at least 3 (three) credit hours in summer.**

For international student: No more than the equivalent of one on-line/distance education class (or 3 credits per session) may count towards the "full course of study" requirement. This is an immigration requirement.

Information about enrollment requirements for international students is on the International Student

and Scholar Services website https://www.k-state.edu/isss/students/f1/enrollment.html

Outcome Objective of the MS in Grain Science

Graduates of the MS program in Grain Science and Industry at Kansas State University will demonstrate:

1. Ability to solve advanced problems in the disciplines associated with the Grain Science and Industry Department.
2. Advanced knowledge and demonstrated expertise to compete in the scientific and industrial community.
3. Ability to plan and conduct research and analyze research data with minimal direction from major professor.
4. Ability to generate experimental results and critically evaluate scientific information.
5. Ability to communicate effectively in electronic, written and/or oral forms.
6. An understanding and practice of professional and ethical responsibilities.
7. Leadership and effective collaboration.
8. Understand that learning and professional developments are a continuing life-long process.

MS Degree Requirements in Grain Science

1. A minimum of 30 credit hours of which 6 to 8 are for Master's thesis research (GRSC 899). At least 18 hours including the thesis/research hours should be at the 700-level and above. Courses at the 600-level may be included, but 500-level courses in the student's major area are expected to have been completed as undergraduate prerequisites to graduate study or as undergraduate deficiency courses assigned to admission and thus not included on the plan of study. Restrictions: (1) No course in the student's major area may be at the 500-level (2) Normally no more than 6 credit hours may be at the 500-level. No more than 3 (three) hours in "special problems" or other individualized courses may be applied to the Master's degree. Note: The Department of Grain Science does not offer a non-thesis MS degree. After you have completed your thesis research, written your thesis, and have assembled it in a form acceptable to your major professor, contact members of your graduate committee in regard to a time when they are available for the oral examination. When an acceptable date has been found and you have filled out the Graduate School form requesting the scheduling of an oral examination online, have the form first signed by your major professor and then collect the signatures from the other faculty members, and the Graduate Program Chair before submitting the original to the Graduate School. A copy of the schedule request form should also be included in your official file, as well as a copy for yourself and for your major professor. It is also necessary for you to schedule a room in which the examination is held. Please contact the Assistant Graduate Coordinator to schedule a room for your defense.
2. Your Graduate Committee will administer the oral examination in defense of your thesis, in which you display competency in appropriate areas of expertise, with your major professor acting as chairman. Be prepared to give a presentation about your research and defend your thesis by your response to questions. You should also be able to discuss the scientific principles that support this research or related investigation. Be well versed on your subject. All graduate students are required to submit an electronic version of their thesis, dissertation, or report. Detailed information about the K-State electronic Theses, Dissertations, and Reports (ETDR) can be found at http://www.k-state.edu/grad/etdr/index.htm.

Outcome Objectives of the PhD in Grain Science

Graduates of the PhD program in Grain Science and Industry at Kansas State University will demonstrate the following:

1. Scholarly achievement in basic science or engineering courses that provide a theoretical background relevant to their area of specialization and an understanding of a fundamental field that serves grain science.
2. In depth knowledge in an area of specialization and mastery of necessary experimental tools and techniques.
3. Preparedness to compete with counterparts in science and industry.
4. Initiative and the ability to independently plan and conduct original scientific research.
5. Contribution of new knowledge that is substantive, significant, and relevant to current theory.

6. Submission of research findings in manuscript form suitable for publication in peer reviewed journals.
7. Good communication skills with the ability to report research findings to experts in the field and to the public.
8. Enthusiasm for learning and discovery and active participation in appropriate professional societies.
9. Interactive involvement with the instructional process in at least one undergraduate area.
10. Ability to initiate, develop, and present an original proposition for research.

Requirements for a PhD in Grain Science and Obtaining Candidate Status

In pursuit of candidacy for the PhD significant progress should have been made in the course work portion of the plan of study as well as progress in the PhD research. Success in the course work will be shown by the grades awarded. Professional maturity and the demonstrated ability to perform original research independently require the judgment of the major professor directing the research.

In consultation with your major professor graduate courses should be chosen to maximize your ability to compete in your profession based on in-depth study in the area of your choosing and in closely associated supporting academic disciplines.

A MS in a relevant technical discipline is normally accepted as 30 credits toward the 90 total required for a PhD. However, not all MS degrees necessarily provide a suitable background, so you may be required to take additional courses. This is particularly true when transferring from various other disciplines where only a portion of the course work taken may contribute to your candidacy for the PhD. Therefore, it is important to discuss your prior background courses by name, catalog number, and credits from your MS so that committee members can assess your preparedness. Typically, 25-30 credits of total course work beyond the MS degree would be included. The remaining 30-35 PhD research credits complete the 90-credit university-wide PhD requirement.

The plan of study devised by the student and the student's major professor must be approved and signed by each member of the student's Graduate Committee, the Graduate Program Director, the Department Head or person designated by the Graduate School. It must be accepted by the Graduate School. To avoid questioning by the Graduate School, a majority of PhD course work hours should be from those numbered 800 or higher. Courses in the 500-level in the student's major field of study may not be used on the Program of Study.

The last step in attaining candidacy for the PhD degree is a preliminary examination. The preliminary examination must be scheduled after most or all of the courses are taken, **at least seven (7) months before the final defense**, and preferably one year prior to the estimated date of completion of all research. Because a PhD is highly dependent on research initiative, demonstrated research capability and acceptable progress as judged by the major professor must precede scheduling of the preliminary examination, in addition to satisfactory progress in course work.

Prior to scheduling your PhD preliminary exam, the format prescribed by the major professor and a subject agreed on by the prospective candidate and his or her major professor, is submitted for approval of the student's graduate committee. When an acceptable subject for the exam is selected, the Graduate School form, (along with the plan of study annotated with dates and grades for courses taken) requesting the preliminary examination must be signed and submitted to the Graduate School.

Scheduling of the time of the oral and the examination room is the responsibility of the graduate student. Depending on the format of the examination it may be required that written communication be delivered to each member of the committee in a timely manner. For the oral portion of the exam two approaches have been used with success, one is the "original proposition" oral exam, and the developing a research approach to a topic assigned by the major professor and agreed to by the examining committee. Course work may also be revisited.

In the "original proposition" type exam, the graduate student originates an idea for a full blown research project. The student justifies the proposed research, its significance and its application and contribution to Grain Science. The originality requirement restricts the subject and approach to being wholly apart from the research work being currently done for the PhD dissertation. Advocating the original proposition to the examination committee requires conveying confidence and the reasonable probability of a success, presentation of a plan of attack, and convincing the audience of the value of the proposed research, and why it should be supported. In such case a one-page abstract would be prepared for distribution to seek approval of the topic by members of the committee prior to investing the time required

for preparing a full proposal. The actual prelim would be scheduled within two to four weeks. One to two days before the actual examination, a brief written outline of the proposed research, with a page limit agreed on in advance, will be distributed to each member of the committee.

In the oral preliminary format in which a topic is assigned to the student, the student exhibits originality in the way in which he or she approaches the research and plans how to conduct it. The written communications that accompany this oral exam are specified by the major professor and agreed on by the committee.

Passage of the written and oral preliminary exams, as voted on by the members of the committee, is documented by signatures of the committee members on the ballot provided by Graduate School. When the ballot is returned to Graduate School with signatures in the affirmative column, Graduate School will inform the student of "admission to candidacy".

Once candidacy is established, the candidate must maintain continuous enrollment until the dissertation is completed, accepted, and defended in the final oral examination.

In order to schedule the final oral examination for a PhD, a complete copy of the dissertation must have been read and approved by the major professor who will also have signed the Graduate School form requesting the scheduling of the final exam. **A pre oral exam draft copy of the dissertation will be delivered to each member of the committee at which time the oral exam request form will be presented to them for signature; in most cases with the dissertation copy in hand and the signature of the major professor denoting approval.**

At least **two weeks** must be allowed between delivering the copy of the dissertation and the date of the exam. Upon the student's request the day and hour of the exam will be scheduled with the Graduate School. Scheduling of the room for the exam and conveying the time and place to each committee member is the responsibility of the student. Upon passage of the final oral examination, the signed ballot is returned to the Graduate School.

The final copy of the dissertation will incorporate appropriate changes, editing, or furnishing of additional information or rewriting sentences for greater clarity. The Graduate School requirement for margins, type size, and other detail is clearly spelled out in information available from the Graduate School website.

All K-State graduate students are required to submit an electronic version of their thesis, dissertation, or report.

Electronic theses, dissertations, and reports (ETDR) submitted by K-State students are openly available through the K-State Research Exchange (K-REx) and are indexed by Google, Google Scholar, and other search engines. PDF is the required format for submitting an ETDR, but students have the option of including additional files, such as audio, video, datasets, etc. along with their PDF file.

This web site http://www.k-state.edu/grad/etdr/ provides detailed information on ETDR formatting requirements, templates for writing your ETDR in Word and LaTex, guidelines for using Word and troubleshooting problems, a checklist for submitting your ETDR.

Guidelines for eligibility for graduation in a particular term or participation in the Graduate degree confirming ceremony are clearly spelled out in publications and on the Graduate School website. **http://www.k-state.edu/grad/students/graduation/**

Research Requirements

A common objective of the graduate program is to develop the ability for independent study and research. Your area of research is determined by you and your major professor. You may be asked to work on a continuing project, help to design a new project, and/or do some preliminary investigations.

There are many ways to approach a research project and your major professor will advise how to conduct your investigations. You will need to become familiar with experimental design, analytical procedures, data collection, analysis, interpretation, and scientific writing. Each graduate degree (MS or PhD) requires that you communicate your results in a seminar presentation and that you prepare a draft of a paper suitable for publication in a scientific journal or other appropriate forum.

As you conduct your work, you will need to operate within the accepted standards of behavior in the department. It may seem, at times, that graduate school demands more effort from you than you feel capable of putting forth. It may be a stressful time for some people. Try to be considerate of others around you by being a responsible worker. Learn how to use equipment before using it. Keep your work areas clean, free of hazardous chemicals, and safe. Arrange for repair or replacement if you break something. Do not borrow things without asking. The Department of Grain Science and Industry houses many graduate students, undergraduate students, faculty, and staff

from many cultural backgrounds. We are all here to perform jobs to the best of our ability. Your cooperation is expected.

Criteria for Graduate Research towards Advanced Degree

The scope of graduate research in the Department of Grain Science is the creation of new knowledge, its dissemination, and the education of grain scientists and technologists. Furthermore, graduate students work towards full membership in scientific societies, learn and practice professional ethics; they attend technical meetings, make presentations, and work towards common purposes with their peers. The major research interests are different for each professor's group and range from basic to applied research.

All graduate students in Grain Science conduct research and write an MS thesis or PhD dissertation to satisfy requirement for the degree. Research results must be recorded properly in an official notebook. The MS and PhD dissertations are expected to yield research papers in peer reviewed journals.

A key to success in graduate education is a commitment to be the best in one's field and to work well with others. A commitment to be the best translates into many hours of work towards professional goals. Graduate students are expected to assist other students, research associates, and faculty to solve problems. They must respect and work well with personnel in clerical and facilities positions**.**

Research is a time-consuming activity by its nature. On any given research problem, a hypothesis is generated, experiments proposed, and materials and equipment gathered and assembled. When the first experiments have been completed, the outcome is often failure. Failure leads to a new hypothesis with a second round of experiments, and so forth, until understanding is satisfactory. Nevertheless, a graduate student with the proper academic background and initiative, who spends long periods of time in the laboratory, can almost always be assured of success. Such a student will complete a thesis and the required publication(s) in a reasonable period of time.

Some graduate students have difficulty dedicating time to research, even though they excel in class work. Class work is structured with set schedules and clear objectives. Success in research requires the self-discipline to work long hours in the laboratory. Graduate students are expected to be at their desks or laboratories except for class, seminar, library work, illness, or an emergency. When absent for a period of time, a graduate student should leave a note on her or his desk, or should inform someone in the laboratory. A student who thoroughly understands the Department's aspirations for graduate education, and who works diligently with a cooperative attitude to satisfy those aspirations, will undoubtedly succeed in the graduate program.

The faculty in the Department can then recommend the MS or PhD graduate without reservation to a potential employer. The community of grain scientists and technologists, even in the entire world, is small in number. A reputation established by a graduate student will be widely known among all grain scientists and technologists. A good reputation builds esteem and an improved future for the individual and advisor, the Department, and the University.

Graduate students must keep the major advisor apprised of progress through frequent verbal and written communications. The format of these important interactions will depend on the professor. Some research directors may expect to view at any time an open research notebook on the lab bench. Another may ask for preparation of a written proposal. In some cases, short term goals of achieving readiness for presentation at an annual meeting will provide motivation. Be assured that your professional development and scientific maturation is foremost in the mind of your major professor and he or she has produced successful graduates with the approach used.

Keeping a Lab Notebook

Lab notebooks are the official documentation of your research and serve as the basis for your thesis, dissertation, or patent application. In addition, the act of keeping a notebook prompts you to stop and think about your research, an essential component of investigative science.

1. Use a bound notebook with consecutively numbered pages. These can be obtained from the main office.
2. Make notebook entries in ink. Sign and date each entry.
3. Allow a few pages in the front of the notebook for a Table of Contents.
4. Write with enough detail so that another scientist could refer to your notebook and repeat the experiment.
5. Note appropriate literature citations, numbers of analytical methods, and any modifications to the previously described procedures. Sketches of

equipment set-up or sample appearance may be useful.
6. Record the data collected in a table or other easy-to-read format. Attach computer printouts of spreadsheets, graphs, photos, etc.
7. Set aside time to make notebook entries. Record your thoughts regarding experimental results and the implications for future work. The act of writing often prompts new ideas.
8. Periodically, ask someone that can understand your research but is not directly involved to read your notebook and to sign and date in ink as a witness to establish your priority

Responsibilities of GRA Recipients

Graduate students receive a 0.5 FTE (Full-Time Equivalent) assistantship. These are 12-month appointments subject to renewal. Graduate research assistants (GRA) sign an employment data sheet to become hourly employees of the University. As employees, GRAs are entitled to certain benefits and are required to abide by University employee regulations. Assistantships of 0.5 FTE provide the benefit of resident (in-state) tuition rates. **GRAs agree to work 20 hours per week on assigned duties/lab work (this is separate from thesis work).** The holder of an assistantship must enroll in at least 6 (six) credit hours of coursework and/or research per spring/fall semesters and 3 (three) credit hours per summer semester. Employment beyond the student's appointment as a GRA/GTA is discouraged. Any employment beyond the 0.5 FTE must follow Graduate School regulations (see sections of GS handbook and PPM)

The work assigned to a GRA involves assisting their major professor, research group, or the department according to need. Most of the work will be on a research project funded by a sponsor to satisfy a specific scientific or technological goal. The sponsor holds the University and the faculty member accountable for progress, successful completion, and reporting on funded research. State research funding is also obtained by successful proposals from professors doing research. GRA's funded from these sources are awarded by mutual agreement of the Department Head and the professor who proposed the project. Duties are primarily assigned by the major professor but may also include duties on behalf of the department. **Assigned duties are not necessarily related to thesis research**. Funding sources for an individual GRA may change as the need arises and the duties may change accordingly. In any case it is essential to produce results and report them to your major professor in a timely manner. You will benefit from direction and interaction at regular meetings and your development will be in evidence accordingly as it progresses.

A limited number of assistantships are awarded based on funds available, departmental needs, qualifications of students, and progress toward the degree. All assistantships require performance of a set of duties or the accomplishment of technical objectives. They are awarded for a fixed period of time and **may** be renewed depending on the individual's performance, progress toward a degree, and department resources. **Assistantships may be terminated for non-performance of duties or in case of insufficient funding.** The renewal of a contract in May and August between a GRA and the Department of Grain Science depends largely on whether the student has demonstrated progress towards satisfying the objectives of a project and available funding. The duties and performance standards will be evaluated by the student's major professor using the "Annual Graduate Student Performance Evaluation" form (an appendix to this booklet) from the Department of Grain Science & Industry. A summary of the student's performance will be provided to the department annually and maintained in the student's official records.

Graduate students appointed as a GTA are eligible for a tuition waiver. Graduate students appointed on a full-time GTA appointment (0.5 FTE) receive a tuition waiver for a maximum of 10 hours in the fall and spring terms and 6 hours in the summer term. GTA tuition waivers are provided for tuition benefits only; students will be responsible for campus privilege fees.

The Kansas Board of Regents requires all prospective GTAs who are non-native speakers of English to achieve a: minimum score of 50 on the TSE (Test of Spoken English) OR minimum score of 50 on the Speaking Proficiency English Assessment Kit (SPEAK) OR minimum score of 22 on the speak section of the Internet-based Test of English as a Foreign Language (TOEFL iBT).

Disputes concerning graduate assistants (GTA/GRA/GA) are employment matters that should be originated with the appointing department and be addressed through normal supervisory channel.

Enrolled MS Students Transferring to Doctoral Program Bypassing the Masters' Degree

Transition for currently enrolled MS students to a PhD program (bypassing the MS degree) can be considered after the first year (in a period of 12-24

months from start of MS) provided the following criteria are met:

1) The student has a cumulative GPA of 3.5 or above

2) The student has made significant progress towards research and has one or more of the following creative accomplishments:

- Submission of peer-reviewed publications
- Primary contribution to funding of research or industry grant(s)
- Disclosure of patent based on research innovation; and/or
- Win competitive presentation(s).

Other Requirements:

- One page essay for justification for the transition (updated statement of purpose)
- CV
- DARS
- Graduate student annual evaluations
- Three letters of recommendation including one from the major advisor and the rest from course instructors and/ or MS supervisory committee members; and
- Application will be reviewed and recommended for approval by the graduate admissions committee.

Credit requirements for MS Bypass to PhD:

- *For MS (30 credits minimum)*
  - 22-24 course credits
  - 6-8 research credits (GRSC 899)
  - 700-level ≥ 18 credits ***including*** research credits
  - 500-level ≤ 6 non-GRSC credits
  - Remaining > 600-level

- *For PhD (60 credits minimum)*
  - 24-30 course credits (GRSC 25-30 requirement can be waived)
  - 30-36 research credits (GRSC 999)
  - 800-level ≥ 15 credits ***excluding*** research credits
  - 500-level ≤ 6 non-GRSC credits
  - Remaining > 600-level

- *For MS Bypass to PhD (90 credits minimum)*
  - 46-54 course credits
  - 36-44 research credits (combination of GRSC 899 already taken and GRSC 999 after bypass)
  - 800-level ≥ 15 credits ***excluding*** research credits
  - 500-level ≤ 12 non-GRSC credits
  - Remaining > 600-level

Example:

Completed in first 12 months of MS: 15 credits (12 course; 3 research)

For MS Bypass to PhD:
90-15=75 credits required in the next 3-4 years

Course credits remaining to be taken after bypass = 10 + 24 = 34*

Research credits remaining to be taken after bypass = 5 + 36 = 41*

*All of these credits/ courses will be subject to the MS Bypass to PhD requirements listed above and any additional requirements such as graduate seminar and professional development courses.

Affiliated Agencies

International Grains Program (IGP)
https://www.grains.k-state.edu/igp/index.html

U.S. Grain Marketing Research Laboratory
https://www.ars.usda.gov/plains-area/mhk/

Useful Web Pages/Links

K-State Graduate School
http://www.ksu.edu/grad

Course Schedules
Explore the schedule of courses by semester, college, and department.
https://courses.k-state.edu/courses/schedules.html

Final exams schedule:
http://courses.k-state.edu/exam-schedule.html

K-State Graduate Catalog
https://courses.k-state.edu/courses/catalogs/

Graduate Degree Programs
https://www.k-state.edu/grad/academics/degrees-certificates.html

Research at K-State
https://www.k-state.edu/research/

Academic Calendar
Enrollment, drop/add, holidays, commencement, grade schedules, finals, and more.
https://www.k-state.edu/registrar/calendar/

Accessing your Student Information (KSIS)
Enroll, get grades, change address, check financial aid, order parking permit, athletic tickets, yearbook, and more.
https://ksis.k-state.edu/

K-State Online
https://online.k-state.edu/

K-State Libraries
Library services branch locations, IT services, interlibrary loan service, and Ask a Librarian service.
http://www.k-state.edu/hale/

All University Policy and Procedures
http://www.k-state.edu/policies/

K-State Graduate Handbook
The K-State Graduate Handbook was developed by the Graduate Faculty through the recommendations and actions of the Graduate Council. The policies and procedures outlined are designed to ensure high standards in graduate education at Kansas State University, while providing for flexibility in policy implementation. The Graduate Council expects each graduate program to build on this foundation to achieve their programmatic vision of excellence.

The Graduate Handbook can be found at:
http://www.k-state.edu/grad/graduate-handbook/

Grain Science and Industry graduate program page https://catalog.k-state.edu/content.php?catoid=55&navoid=10651

Student Guidelines – Master's Students
http://www.k-state.edu/grad/students/masters/index.html

Student Guidelines – Doctoral Students
http://www.k-state.edu/grad/students/doctoral/index.html

Graduate School Forms
http://www.k-state.edu/grad/academics/forms/

Theses, Dissertations and Reports
http://www.k-state.edu/grad/etdr/index.html

Graduation and Commencement Information
http://www.k-state.edu/grad/students/graduation/

Compliance information: Research involving human subjects, animals, recombinant DNA, infectious agents, or toxins of biological origin

http://www.k-state.edu/comply/

Faculty Awards Management:

http://www.k-state.edu/research/faculty/awards/

Funding opportunities: Links to funding bulletins, databases, sources, grant writing resources.
http://www.k-state.edu/research/faculty/funding/

Proposal preparation: Forms, information on electronic submission, preparation information.
http://www.k-state.edu/research/faculty/proposal/

Grain Science & Industry Graduate Student Fellowships and Awards

Please send required information to: Dr. Chad Paulk, cpaulk@ksu.edu

Graduate Student of the Month Awards

- Please send the student's name
- A list of the student's key achievements
- A copy of the student's CV.

General Considerations for all Fellowships, Scholarships, and annual Awards:

- To be considered eligible for these graduate student awards a student must not have defended their thesis or dissertation prior to awards nomination due date. For awards that include undergraduate students, undergraduates must be enrolled during the semester of the awards nomination due date.
- All award nominations should include evidence of scholarly research, its significance and student's contributions and accomplishments as specified in the nomination form.
- Selection will take into consideration demonstrated pursuit of professional development of nominated students, including active participation and attendance in Department/graduate student Seminars.
- Students may apply for more than one award but, no student shall receive more than 1 award per year.

Anheuser-Busch Fellowship ($1,000)

Purpose: To provide support to eligible full-time M.S. or Ph.D. students enrolled in the Department of Grain Science who have shown the potential to contribute to the scientific community.
Eligibility: One annual fellowship will be awarded to a full-time graduate student in Grain Science and Industry who has demonstrated their potential to contribute to the scientific community through the production of refereed manuscripts and journal abstracts, presentations given at scientific meetings, and grant submissions, while having demonstrated outstanding academic achievement. Preference will be given to those who have not previously received this award.
Submit: Application form, current CV/Resume, and the Major Advisor Declaration form

Rene Buhler Memorial Scholarship ($1,000)

Purpose: To perpetuate the memory of Rene Buhler on the campus of Kansas State University and to provide financial assistance to M.S. and Ph.D. students enrolled in cereal chemistry and technology in Grain Science and Industry.
Eligibility: One annual scholarship will be awarded to a full-time graduate student properly enrolled in Grain Science and Industry's Cereal Chemistry and Technology program with specific reference to research in the areas of grain handling, milling and storage. Applicants will be assessed upon their production of refereed manuscripts and journal abstracts, presentations given at scientific meetings, grant submissions, and the demonstrated impact of their research in the areas of grain handling, milling and storage. Preference will be given to those who have not previously received this award.
Submit: Application form, current CV/Resume, and the Major Advisor Declaration form

Wendell L. and Ina K. Brubaker Graduate Student Scholarship ($28,000 M.S.)

Purpose: To provide financial assistance to students enrolled in the Grain Science and Industry's M.S. program according to the award guidelines and criteria listed below.
Eligibility: One scholarship will be awarded to an incoming, domestic M.S. student enrolled full-time in the Department of Grain Science and Industry (applicant must have received an official letter of admission). Scholarship is intended to be awarded for a two-year duration. Renewal after first year will be automatic if the student still meets the scholarship requirements. Student must make normal progress to obtain a degree. Student must maintain at least a 3.0 GPA, based on a 4.0 scale.

*This scholarship also has special eligibility stipulations pertaining to the mandatory background check for all Graduate Research Assistants. Student must not have forfeited his or her driver's license for any reason due to violations of any laws and regulations. Scholarship finalists must agree to a background check for the following: felony or misdemeanor convictions for illegal drug use, or possession, or sale of the same; felony or misdemeanor convictions of driving under the influence of alcohol or illegal drugs; or any other felony convictions. First preference will be given to applicants who did not earn an undergraduate degree at Kansas State University.
Submit: Application form, current CV/Resume, a letter of recommendation from the major advisor, one additional letter of recommendation provided by the candidate, and the Major Advisor Declaration form.

Cain Land and Grain Value Added Agriculture Scholarship ($1,000)

Purpose: To honor Daniel O. and Teresa A. Cain, agricultural leaders in eastern Kansas committed to the concept of creating more value from renewable resources.
Eligibility: Up to two scholarships are awarded to graduate students enrolled in the Department of Grain Science and Industry with a minimum GPA of 3.0. Recipients must be conducting innovative research that pertains to identifying new, or enhancing recognized, value traits in agricultural products; or to the conversion of renewable resources into higher value products. Preference will be given to U.S. citizens and to those who have not previously received this award.
Submit: Application form, current CV/Resume, and the Major Advisor Declaration form

Rasik Daftary, PhD (1969) Grain Science Excellence Fund ($5,000)

Purpose: Provide support to undergraduate and graduate students enrolled in the Department of Grain Science and Industry in the College of Agriculture.
Eligibility: The recipient will be an undergraduate OR graduate student enrolled in the Department of Grain Science and Industry who is in good academic standing (3.0+ GPA for undergraduate; 3.5+ GPA for graduate). Preference will be given to students who have completed course work in Cereal Chemistry. Additional preference will be given to those who have not previously received this award. More than one award may be available depending on the quality of the pool of applicants in a given year.
Submit: Application form, current CV/Resume, a letter of recommendation from the major advisor, one additional letter of recommendation from another faculty member, and the Major Advisor Declaration form.

Dr. Dick Hahn Distinguished Student Leadership Award ($1,000)

Purpose: To honor Dr. Dick Hahn and to provide financial assistance to students enrolled in the Department of Grain Science and Industry. This award was established by the five Grain Science student clubs: Alpha Mu, Bakery Science Club, Feed Science Club, Milling Science Club, and the Grain Science Graduate Student Organization.
Eligibility: The recipient will be an undergraduate OR graduate student enrolled in the Department of Grain Science and Industry who is in good academic standing with a record of leadership in affairs or activities related to the department and/or the College of Agriculture. Leadership will be judged based on activities from April of the previous year to April of the current year - not multiple years. Preference will be given to those who have not previously received this award.
Each club should select a nominee and submit their nomination to the Grain Science and Industry Awards Committee Chair. The nomination letter should include concrete examples of the candidate's leadership activities, skills and qualities as demonstrated through various activities conducted between last April and April this year. Additionally, each nominee will need to provide a statement that highlights their leadership activities, the lessons they have learned from those experiences and how they will apply this knowledge in the future.
Submit: Application form, current CV/Resume, and a letter of recommendation from the nominee's club.

Majel M. MacMasters Memorial Achievement Award ($1,000)

Purpose: To honor and perpetuate the memory of Dr. Majel M. MacMasters, an outstanding teacher and scientist in the Department of Grain Science and Industry.

Eligibility: One annual award is available to a M.S. or Ph.D. student enrolled in the Department of Grain Science and Industry with an emphasis in cereal chemistry. Applicants must have completed **a minimum of 15, but no more than 30 credit hours** within their program of study to be eligible. The individual selected will have demonstrated exceptional academic and practical achievement and the potential for superior professional service to cereal science or to the industry based thereon. Preference will be given to those who have not previously received this award.
Submit: Application form, current CV/Resume, a letter of recommendation from the applicant's major advisor, and the Major Advisor Declaration form

Outstanding Graduate Student Award (Ph.D. $2000; MS $1000)

Purpose: An Award in the amount of $2,000 will be awarded to an outstanding Ph.D. student and $1,000 to an outstanding M.S. student excelling in academics and contributions to research in Grain Science. **Eligibility:** Requirements for a Ph.D.: Student: has spent a minimum of 2 years in the program; has a GPA of 3.5 or higher; and is in good standing with the Graduate School (no record of probation). Requirements for an M.S.: Student: has spent a minimum of 1 year in the program; has a GPA or 3.5 of higher; and is in good standing with the Graduate School (no record of probation). Preference will be given to those who have not previously received this award.
Submit: Application form, current CV/Resume, a letter of recommendation from the major professor, two additional letters of recommendation (one can be from a peer), and the Major Advisor Declaration form.

Dr. C.E. Walker International Graduate Student Fellowship ($28,000 M.S. or $30,000 Ph.D.)

Purpose: To honor Dr. Chuck Walker for his dedication to helping international students, and to provide financial assistance to an international graduate student enrolled in Grain Science and Industry; established by TMCO Inc. of Lincoln, NE.
Eligibility: Two awards for international graduate students. Awards are open to both incoming (must have received official admission letter) and continuing graduate students enrolled in the Department Grain Science and Industry at the M.S. or Ph.D. level. Funds will be awarded as a Graduate Research Assistantship in baking science and technology; rheology applied to cereal grains or their products; or to cereal chemistry related to baking.
First preference is given to females from East Asia (China, Taiwan, Korea, or Japan). Second preference is given to continuing students. Students may reapply yearly, provided they show evidence of continued satisfactory progress. Maximum duration of support funding is limited to 24 months for M.S. students and 36 months for Ph.D. students.
Submit: Application form, current CV/Resume, a letter of recommendation from the major professor, two additional letters of recommendation (one can be from a peer), and the Major Advisor Declaration form.

GRADUATE COURSES

FALL

GRSC502 Milling Science II
GRSC503 Milling Science II Lab
GRSC556 Pneumatic Conveying of Dry Solids
GRSC661 Quality Feed Ingredients
GRSC602 Cereal Science
GRSC612 Feed Technology II
GRSC620* Extrusion Processing in the Food & Feed Industries
GRSC635 Baking Science I
GRSC636 Baking Science I Lab
GRSC670 Bakery Layout
GRSC691 Faculty-Led Study Abroad
GRSC740* Biomaterial Processing
GRSC790 Problems in Grain Science - MS
GRSC815** Fundamentals of Processing Grain for Food
GRSC820** Advanced Extrusion Processing
GRSC 850** Grain Protein Chemistry & Technology
GRSC899 MS Research
GRSC900 Graduate Seminar in Grain Science
GRSC910 Topics in Grain Science - PhD
GRSC999 PhD Research

SPRING

GRSC530 Management Applications in the Grain Processing Industries
GRSC555 Cereal Food Plant Design
GRSC560 Electricity and its Control for the Grain Processing Industries
GRSC580 Specialty Milling
GRSC625 Flour & Dough Testing
GRSC637 Baking Science II
GRSC638 Baking Science II Lab
GRSC645 Pet Food Processing
GRSC651 Food & Feed Product Protection
GRSC670 Bakery Layout
GRSC691 Faculty-Led Study Abroad
GRSC790 Problems in Grain Science – MS
GRSC810* Particle Technology for Solids Handling and Processing
GRSC830* Physical Properties of Cereal Polymers
GRSC840** Advanced Grain Processing Technology
GRSC899 MS Research
GRSC900 Professional Development in Grain Science
GRSC901* Starch Chemistry & Technology
GRSC902** Carbohydrates in Food
GRSC910 Topics in Grain Science - PhD
GRSC920 Graduate Seminar
GRSC999 PhD Research

***Offered in EVEN years only**
****Offered in ODD years only**

Independent Study Form

Date: _____

GRSC 590 ☐ (for undergraduate students)
GRSC 790 ☐ (for MS students)
GRSC 910 ☐ (for PhD students)

Student name: _____ Instructor name: _____

Year: _____ Semester: *Spring* ☐ *Summer* ☐ *Fall* ☐

Proposed course (project) title: _____

Credit hours:

Expected student learning outcomes:

1.

2.

3.

4.

5.

Summary of accomplishments (attach separately to this form)

Final grade:

Department of Grain Science and Industry
Graduate Student Annual Performance Evaluation

Student Name: _____ Degree: MS PhD

Semester & Year Enrolled: _____

Evaluation Period (To/From): _____

TO BE COMPLETED BY GRADUATE STUDENT (Please discuss the goals with your major advisor before completing this)

1. EXPECTATIONS SET OUT BY MAJOR ADVISOR FOR THE ACADEMIC YEAR

2. PROGRESS (RESEARCH & OTHERWISE) TOWARD DEGREE MADE TO DATE

3. COURSE WORK COMPLETED TOWARD PROGRAM OF STUDY THIS ACADEMIC YEAR:
   (Provide Course Number, Course Title, Credit Hours)

4. PARTICIPATION IN PROFESSIONAL ACTIVITIES THIS ACADEMIC YEAR
(Presentations, Publications, Conference Attendance, Awards/Honors)

TO BE COMPLETED BY MAJOR ADVISOR (Please forward a completed copy to the Department Graduate Program Coordinator)

5. SET EXPECTATIONS LISTED ABOVE BY GRADUATE STUDENT ARE ACCURATE

YES _____ NO _____

6. IF **NOT ACCURARTE** EXPLAIN (attach supporting documentation as appropriate)

7. PROGRESS (RESEARCH & OTHERWISE) MADE THIS ACADEMIC YEAR**

ACCEPTABLE _____ UNACCEPTABLE _____

8. IF **UNACCEPTABLE** EXPLAIN THE REASON FOR THE RATING (attach supporting documentation as appropriate)

** An annual performance rating of UNACCEPTABLE may constitute grounds for loss of financial support.

(PLEASE PLACE ADDITIONAL COMMENTS ON THE BACK OF THIS SHEET.)

_____ _____

Advisor Date Student Date

Master's Graduate Student Learning Outcomes Assessment

(to be completed by SUPERVISORY COMMITTEE MEMBERS immediately following the examination)

Graduate Student: _____

Examination Outcome (circle one): PASS FAIL OTHER_____

Faculty Signature: _____ Date: _____

M.S. ORAL EXAMINATION ASSESSMENT

Based on their performance on this examination, rate this student's capabilities in the following areas:	highly capable	capable	average	weak	un-acceptable
Ability to synthesize and critically evaluate information pertinent to the Grain Science discipline.	5	4	3	2	1
Demonstration of advanced knowledge in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1
Use of sound research methodology and an ability to apply research techniques.	5	4	3	2	1
Ability to plan and conduct scholarly activities in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1

M.S. THESIS/ASSESSMENT

Based on your evaluation of their written thesis, rate this student's capabilities in the following areas:	highly capable	capable	average	weak	un-acceptable
Ability to synthesize and critically evaluate information pertinent to the Grain Science discipline.	5	4	3	2	1
Demonstration of advanced knowledge in one or more areas of specialization within the Grain Science discipline.	5	4	3	2	1
Use of sound research methodology and an ability to apply research techniques.	5	4	3	2	1
Ability to plan and conduct scholarly activities in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1

GRADES ASSESSMENT (to be completed by MAJOR PROFESSOR ONLY)

Based on your evaluation of their grades in graduate-level courses, rate this student's capabilities in the follow area:	highly capable	capable	average	weak	un-acceptable
Ability to synthesize and critically evaluate information pertinent to the Grain Science discipline.	5	4	3	2	1
Demonstration of advanced knowledge in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1

PLEASE PLACE ADDITIONAL COMMENTS ON THE BACK OF THIS SHEET.

Ph.D. Graduate Student Learning Outcomes Assessment

(to be completed by SUPERVISORY COMMITTEE MEMBERS immediately following the examination)

Graduate Student: _____

Examination type (circle one): **Final Oral Exam** **Ph.D. Preliminary Exam**

Examination Outcome (circle one): **PASS** **FAIL** **OTHER**_____

Faculty Signature: _____ Date: _____

ORAL EXAMINATION ASSESSMENT

Based on their performance on this examination, rate this student's capabilities in the following areas:	highly capable	capable	average	weak	un-acceptable
Ability to synthesize and critically evaluate information pertinent to the Grain Science discipline.	5	4	3	2	1
Demonstration of advanced knowledge AND expertise in one or more areas of specialization within the Grain Science discipline.	5	4	3	2	1
Use of sound research methodology and an ability to apply research techniques.	5	4	3	2	1
Ability to plan and conduct scholarly activities that make original contributions to the knowledge base in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1

THESIS/ASSESSMENT

Based on your evaluation of their written thesis, rate this student's capabilities in the following areas:	highly capable	capable	average	weak	un-acceptable
Ability to synthesize and critically evaluate information pertinent to the Grain Science discipline.	5	4	3	2	1
Demonstration of advanced knowledge AND expertise in one or more areas of specialization within the Grain Science discipline.	5	4	3	2	1
Use of sound research methodology and an ability to apply research techniques.	5	4	3	2	1
Ability to plan and conduct scholarly activities in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1

GRADES ASSESSMENT (to be completed by MAJOR PROFESSOR ONLY)

Based on your evaluation of their grades in graduate-level courses, rate this student's capabilities in the follow area:	highly capable	capable	average	weak	un-acceptable
Ability to synthesize and critically evaluate information pertinent to the Grain Science discipline.	5	4	3	2	1
Demonstration of advanced knowledge AND expertise in one or more areas of specialization with the Grain Science discipline.	5	4	3	2	1

PLEASE PLACE ADDITIONAL COMMENTS ON THE BACK OF THIS SHEET.