



**UNIVERSITY OF  
SASKATCHEWAN**

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**College of Agriculture  
and Bioresources**

**Department of Food & Bioproduct Sciences**

**FACULTY AND CURRENT M.AGR., M.SC. AND PH.D.  
STUDENT HANDBOOK**

**Version September 2026**

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The Agriculture Building on the University of Saskatchewan campus  
(Photo Credit: University of Saskatchewan)

## INTRODUCTION

**The mission statement of the Department's graduate programs is to provide a high-quality, challenging and intellectually stimulating graduate program experience.**

Welcome to the Department of Food and Bioproduct Sciences and congratulations on your acceptance to our graduate program. We are a unique Department in that we host several programs at the P.G.D., M.Agr., M.Sc. and Ph.D. levels. At the graduate level, the Department currently offers a P.G.D. program in Food and Bioproduct Sciences, M.Agr., M.Sc. and Ph.D. programs in either Food Science or Applied Microbiology. These graduate programs train students in the fundamental and applied sciences using an array of cutting-edge molecular, industrial and traditional techniques. Our graduates are highly qualified personnel in high demand by academic, research and industrial organizations. They are recognized members of the scientific community for their achievements and continue with the tradition of excellence that they acquired through the Department.

This Handbook is intended to serve as a guide to graduate studies in the Department of Food and Bioproduct Sciences (FABS) at the University of Saskatchewan, by summarizing the rules, regulations, procedures and practices that apply. It complements the online material provided by the College of Graduate and Postdoctoral Studies ( <https://cgps.usask.ca/policy-and-procedure/index.php> ) which you should review for the most up-to-date information regarding your graduate program.

There are a number of policies or codes of usual practice, which our department employs. Your time in graduate studies is a period of freedom during which you should become fully immersed in your discipline and experience a growing professional awareness and confidence. To maximize the benefits of your program, both you and the department must make commitments. The department provides you with the intellectual, physical and often financial assistance required. You must take advantage of these opportunities by being highly motivated to study and by directing it in the most productive manner possible. The policies and information outlined in this Handbook are to assist you in achieving these objectives. **At the end of this handbook are some general Q&A, which might be helpful.**

Thanks to the many people who have contributed to this handbook over the years. This is a “living” document. It will be updated from time to time to reflect changing policies and the needs of graduate students and supervisors. Students and faculty are encouraged to provide input to keep this document current and relevant.



Some Current Food & Bioproduct Sciences Graduate Students 2026

## YOU ARE HERE...NOW WHAT?



By now, you should have received the following:

- An offer of admission letter from Graduate Studies,
- Your NSID (you should have received this when you submitted your application) and,
- A confirmation of your stipend from your supervisor by formal letter (see Q&A at the end if not)

Your NSID will be critical for you to get set up as it is required for payroll, registration to academic and safety courses, access to on-campus computer systems, and to obtain a student card and library services.

**M.Sc. and Ph.D. students:** Generally, on your first day here, you will be shown around by your supervisor to your new laboratory environment, introduced to fellow graduate students, and brought to the front office and Graduate Programs Office for introductions.

**M.Agr. Students:** On your first day here, you will meet the supervisor, the Graduate Chair, and the FABS Office and Graduate Programs Administrator. During your visit with the supervisor, you will discuss your Program of Study (POS). Before you arrive in Saskatoon, you should discuss your interests and future direction with the supervisor. They will show you the possible course options in this meeting. Soon after, typically within the first few weeks of your studies, an advisory committee meeting will be called (which will include your project supervisor and the Graduate Chair), and your Program of Study will be confirmed.

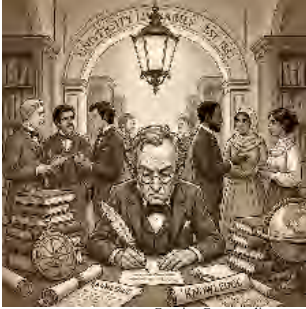
If applicable, you will be required to visit the Graduate Programs Office to complete some payroll/employment forms and return them to the Graduate Programs Administrator. Please complete these as soon as possible to avoid any delay in payment. As part of getting, you set up as a graduate student receiving a stipend, you will also need to provide copies of the following documents to set up payroll\*:

1. your study permit
2. your social insurance number
3. tax and other bank documents

*\*These records are all kept confidential and with strictly restricted access for your protection.*

## HISTORY OF THE DEPARTMENT

The department was established as the Department of Dairy Husbandry in the College of Agriculture in 1913. Undergraduate teaching and extension programs to support the production and distribution of milk and milk products in the province were the major functions in the early days. In 1952, the name of the department was changed to Dairy Science, but until the early 60's, the objectives remained the same. Following the relocation of facilities from the basement of the Administration Building to the newly constructed John Mitchell Building in 1951, when the dairy plant became available, students received a theoretical and practical education in the production and processing of milk. Courses offered included the manufacturing of products such as ice cream and butter, with a strong emphasis on microbiology because of the perishability of these products. The department



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was responsible for courses in introductory microbiology, dairy microbiology, and soil microbiology until 1958, when the latter courses were transferred to the Department of Soil Science. Significant research began in the 50's, which was primarily directed towards the improvement of Saskatchewan dairy products and the development of new products. The bound collection of departmental reprints, which is available in the General Office, illustrates the range of work carried out in those early days. At the same time, there was a strong commitment to extension work benefiting the dairy industry and close ties to government programs in the dairy field. In 1936, a quality control laboratory was established in the department, which, until 1986, carried out chemical and microbiological analyses of milk and milk products from the northern part of the province on behalf of the government and industry.

A number of developments occurred in the 60's and 70's involving the expansion and redirection of programs. In keeping with changes occurring at other North American universities, the program in dairy science was broadened to include food science. This involved a greater emphasis on the scientific aspects of food composition and processing and consideration of a much wider range of products. To reflect this development, the name of the department was changed in 1968 to Dairy and Food Science. A food science group involving members of several departments and colleges was organized in the College of Graduate and Postdoctoral Studies and an interdisciplinary food science graduate program was introduced in 1976. The dairy plant was closed in 1978 but research, quality control and extension relating to dairy products remained important aspects of the department's activities. There was also a significant expansion and broadening of interests in microbiology and in 1968 an agricultural microbiology option was introduced in the undergraduate program. The general level of graduate training and research activity in the department increased markedly.

Since 1980 further expansion and development has occurred, initially in response to a decision by the university to support a thrust in biotechnology centered in the department. Additional resources were provided and a major renovation of space was undertaken; the name of the department was changed, yet again, to Applied Microbiology and Food Science in 1982. Closer ties were forged with the Department of Microbiology, and some members of government and private sector research organizations were appointed to adjunct professor positions in the department. There was a further strengthening of graduate training and research, including the introduction of new graduate courses and the establishment of significant new research areas, in both food science and applied microbiology. In 1984, a decision was made by the university administration to support further consolidation and expansion of food science in the department. An external review of the food science program was carried out in 1988; the Interdisciplinary Food Science Graduate Program was subsequently discontinued and administrative responsibility for graduate studies in food science was assigned to the department in 1989. In 1991 the department moved to new facilities in the Agriculture Building. In 2007, the department made another name change to better align itself with the themes that extend beyond applied microbiology and include new and innovative products and commodities from agricultural and other resources becoming the Department of Food and Bioproduct Sciences. We continue to build on the excellence we inherited throughout our history as measured by our research funding and our scholarly or patent outputs.



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## FACULTY AND DEPARTMENTAL RESOURCES

### *FACULTY*

A current list of the names and research interests of the faculty who are members of the department or associated with it may be found at our departmental website <https://agbio.usask.ca/departments/food-and-bioproduct-sciences.php>

Our department's [faculty research expertise](#) spans a variety of expertise and disciplines, including, but not limited to:

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| Food Enzymology                     | Nutrigenomics                        |
| Food and Environmental Microbiology | Carbohydrate Quality and Utilization |
| Food Nanotechnology                 | Foodomics                            |
| Biotechnology                       | Food Safety and Food Microbiology    |
| Protein Quality and Utilization     | Food and Molecular Microbiology      |
| Bioprocess Engineering              | Lipid Quality and Utilization        |



### 2026 Faculty

From left to right,

Drs. Michael Nickerson, Supratim Ghosh, Takuji Tanaka, Darren Korber, Kaidi Wang, Martin Reaney, Haixia Zhang, Christopher Eskiw, Yuan Fang, Yongfeng Ai, Xiao Qiu and Bishnu Acharya

## HEALTH & SAFETY

### *The Preparation Room (Prep Room), 4E29 Agriculture Building*

This facility is supervised during working hours by Dr. Adrienne Woytowich. Keys to the preparation room have been issued to each laboratory in the department, in an attempt to prevent unrestricted access. Three autoclaves are housed in this room and are accessible to the members of the College; however, there are strict regulations and practices in place to ensure the safest and most efficient use of this equipment. New staff and students **must** attend an orientation session delivered by the department laboratory coordinator/safety officer prior to using the preparation room. If you require use of this facility during evenings or weekends, you will need to obtain permission from your supervisor, and you will be responsible for the security and clean-up of the area.

Each laboratory is responsible for its own wash-up and disposal of biological waste. If your laboratory wishes to use the automatic dishwashers, they must be trained by Dr. Woytowich on how to use them correctly. When autoclaving biological waste, it is each lab's responsibility to discard the cooled biohazard bags into the large green bins located in the Prep Room and to rinse out the trays. If trays need to be soaked overnight, they can be left beside the sink and cleaned the next morning. Autoclaved glassware must be removed promptly, rinsed and washed by each individual.

**Be constantly aware of the hazards posed by chemical or biological agents** that could harm personnel handling your wash-up and discarding materials. All materials should be handled using "Universal" precautions. For example, pre-rinse all glassware and double-rinse glassware that has contained strong acids or bases. **When working with radioactive material**, the user should wash contaminated glassware within the proper laboratory setting and use disposable scintillation vials. Glassware contaminated with radioactive substances is not allowed in the prep room.

### *Safety Supplies, Equipment and Information*

- First-aid kits and chemical spill kits for acids, bases, mercury and solvents are available in the preparation room (4E29), the teaching laboratories (4E65 and 3E75) and all "wet" laboratories in our department. There is also a departmental spill clean-up kit located in 3E75 (under the stainless-steel counter) that contains: a respirator with cartridges, heavy vinyl gloves, apron, goggles, plastic bags and a scoop, all contained in a 20 L pail. Gloves, goggles and aprons suitable for spill cleanup are also available in 4E29. A respirator mask is available at Agriculture Stores (1E26.1).
- Become aware of the location of emergency showers, eyewash stations, fire extinguishers and fire alarms.
- Request assistance from trained personnel in your area before using a fume hood or biological safety cabinet.
- **Safety Data Sheets** for chemicals are readily available in the file cabinet by Agriculture Stores (1E26.1). Requests for SDS's at other locations on campus may be readily obtained from the storekeeper. Xerox copies may be reproduced for your laboratory file if desired. In 3E75, there is a binder containing SDS's for all the biological and chemical agents stored in that lab. (Please refer <http://www.phac-aspc.gc.ca/msds-ftss/index-eng.php> and [https://www.ccohs.ca/oshanswers/chemicals/whmis\\_ghs/sds.html](https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/sds.html) for more information). Also the university summarizes the sources of safety data sheets ([https://healthsciences.usask.ca/facility-services/sds\\_search\\_page.php](https://healthsciences.usask.ca/facility-services/sds_search_page.php)).
- **Standard Operating Procedures (SOPs)** can either be found in a binder located in the same room as the equipment or, attached to/near the piece of equipment. The SOP **must be read and signed** before proceeding to use each piece of equipment for which there is an SOP.
- Chemicals and other consumable items may be borrowed from the teaching laboratories (4E65 and 3E75) with the understanding that the **used quantities must be replaced**. Equipment may also be borrowed from these laboratories on a short-term basis, **after receiving permission** from the laboratory personnel and filling out the sign-out sheet with name, date and room number. Media and chemicals located in the prep room (4E29) are to be used only for FABS 212.3.
- Carts for the transport of gas cylinders are stored in Room 4E29 and 1E26.1.



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### *Occupational Safety and Health Committee*

Each department on campus has a representative on the OHS Committee, ours is **Mr. Yuanlong Cao at 966-2680 or [yuanlong.cao@usask.ca](mailto:yuanlong.cao@usask.ca)**. This committee meets four times each year. If you have any problems regarding safety in your work situation, contact this representative, as well as your supervisor, for assistance.

## Safety Courses

Our Department and the Safety Resources Department offer a series of courses that are at various time periods throughout the year, or as requested. You will be notified of which courses are required for your program, and you will need to take these prior to performing any work in the laboratory. Upon completion of each course, you should provide a copy of your certificate to the departmental office and Graduate Program Administrator and update your curriculum vitae (CV).

Listed below are the courses currently offered:

| Course title                                                                                                                                                                                | Sponsor              | Mandatory (yes/no) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| <b>Radiation Safety Course</b> to be attended by anyone contemplating work with radioisotopes. Course registration forms and licensing forms will be submitted by your research supervisor. | Safety Resources     | No                 |
| <b>Bio Safety Course</b> (valid for 3 years)                                                                                                                                                | Safety Resources     | Yes                |
| <b>Laboratory Safety Course</b> (valid for 3 years)                                                                                                                                         | Safety Resources     | Yes                |
| <b>WHMIS 2015</b>                                                                                                                                                                           | Safety Resources     | Yes                |
| <b>First Aid</b>                                                                                                                                                                            | St. John's Ambulance | No                 |
| <b>Safety Orientation for Employees</b>                                                                                                                                                     | Safety Resources     | Yes                |
| <b>Safety Orientation for Supervisors</b>                                                                                                                                                   | Safety Resources     | Yes                |
| <b>Prep room orientation (includes autoclave usage training)</b>                                                                                                                            | Department           | Yes                |

### Registration:

Register for Safety Resources courses through PAWS. You will require an NSID in order to register.

Graduate Program Admin coordinates the Preparation Room Orientation and Laboratory Safety Training with the Laboratory coordinators to schedule the training day. <mailto:shahrima.tahsin@usask.ca>

## Best Practices

### Labelling of Stored Substances

All too often, unlabeled substances are left in laboratories, posing a potential hazard to others and emergency response personnel. **Please be responsible and label all substance containers immediately with your name, content and date.** "Discard after dates" should also be considered. Chemical and biological substances in long-term storage should be labelled in accordance with WHMIS requirements. Products should be organized by chemical compatibility, and flammable products should be kept in cabinets suitable for that purpose

### Flammable Solvents

Vented solvent storage cabinets are present in each laboratory for small quantities of solvents; quantities larger than 4L should be stored in the central facilities, 1E20.1. **Peroxidizable compounds such as ethers must be labelled with special labels available at Agriculture Stores.** It is wise to print the date received on all new bottles of solvent entering your laboratory. Do not store acids in flammable cabinets.

### Acids and Bases

Storage cabinets are present in each laboratory. Remember that oxidizing acids must be separated from organic acids; bases must be separated from acids. Inorganic bases should be stored in polyethylene containers. Store Glacial Acetic Acid in cabinets suitable for storing flammable products rather than cabinets designed to store corrosive products.

## USask Alerts

USask Alerts is the university's mass notification tool that will send alerts in situations that pose an immediate safety or security risk to campus. In the event of an emergency or safety concern on campus, alerts will be broadcasted using the following communication channels. You may like to install USafe app on your cell phone so that you can receive the alerts from university regarding bad weather, hazardous situations and other must-know-conditions.

Please consult the following link: <https://www.usask.ca/protectiveservices/usask-alerts.php>

## ***Disposal of Hazardous Waste***

### **Biological**

All biological waste must be autoclaved. Covered pipette pans and disinfectants for sanitization of benches, pipette pans or culture spills are available from preparation room personnel.

### **Chemical**

**Never allow chemical wastes to accumulate in your laboratory.** Keep a log of the amount and composition of the waste deposited in each waste container [Agriculture Stores (1E26.1) has Hazardous Waste Disposal forms and labels]. Waste containers can also be obtained from Agriculture Stores (1E26.1) but a signed requisition will be required. A Hazardous Waste Management Facility exists on campus to dispose of specific chemical waste, and the central collection depot is Agriculture Stores (1E26.1).

### **Other Wastes**

Other waste material that may be sent to the Hazardous Waste Facility includes:

- Radioactive waste. Consult your Radiation Waste Procedures Manual for specific disposal procedures.
- Sharps (*i.e.*, needles, syringes, scalpel blades) should be autoclaved if contaminated. All sharps should be collected in a labelled plastic container with a lid. Send this container to the Hazardous Waste Facility.
- Broken, uncontaminated glass will be routinely collected by the preparation room personnel to avoid accumulations in your laboratory. It is placed in a sturdy box that is sealed before disposal by the janitorial staff.

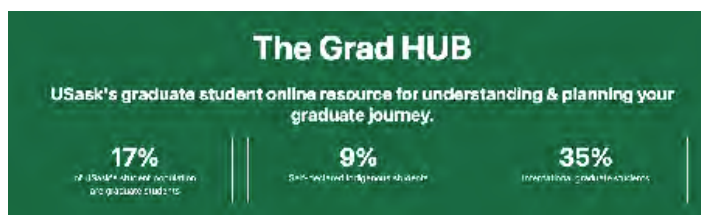
## ***Student Wellness Centre***

Your health is the most important factor for your success in the graduate study. Your health includes both physical and mental conditions. You may need to work till late, and may have meals at irregular timings. There are lots of loads to complete your graduate study. These can easily become a burden to your health. The university operates [Student Wellness Centre \(https://students.usask.ca/health/centres/wellness-centre.php\)](https://students.usask.ca/health/centres/wellness-centre.php) to assist you to maintain your health. They have many ways to help you from self-guidance to in-person consulting.

| <b>HEALTHY</b><br>Good mental health:<br>normal functioning |                                                                                                                                                                                                                                | <b>REACTING</b><br>Common, mild, reversible<br>distress having a<br>“bad day”                                                                                                                                                                      | <b>INJURED</b><br>Significant and persistent<br>functional impairment                                                                                                                                                                                    | <b>ILL</b><br>May have a clinical disorder;<br>severe and persistent<br>functional impairment                                                                                                                                            |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CHANGES IN MOOD</b>                                      | <ul style="list-style-type: none"> <li>Normal mood fluctuations</li> <li>Calm</li> <li>Confident</li> </ul>                                                                                                                    | <ul style="list-style-type: none"> <li>Irritable</li> <li>Inpatient</li> <li>Nervous</li> <li>Sadness</li> </ul>                                                                                                                                   | <ul style="list-style-type: none"> <li>Angry</li> <li>Anxious</li> <li>Pervasive sadness</li> </ul>                                                                                                                                                      | <ul style="list-style-type: none"> <li>Easily enraged</li> <li>Excessive anxiety/panic</li> <li>Depressed mood, numb</li> </ul>                                                                                                          |
| <b>CHANGES IN THINKING AND ATTITUDE</b>                     | <ul style="list-style-type: none"> <li>Good sense of humour</li> <li>Takes things in stride</li> <li>Ability to concentrate and focus on tasks</li> <li>Usual self confidence</li> </ul>                                       | <ul style="list-style-type: none"> <li>Displaced sarcasm</li> <li>Intrusive thoughts</li> <li>Sometimes distracted or lost focus on tasks</li> </ul>                                                                                               | <ul style="list-style-type: none"> <li>Negative attitude</li> <li>Recurrent intrusive thoughts/ images</li> <li>Constantly distracted or cannot focus on tasks</li> </ul>                                                                                | <ul style="list-style-type: none"> <li>Noncompliant</li> <li>Suicidal thoughts/intent</li> <li>Inability to concentrate, loss of memory or cognitive abilities</li> </ul>                                                                |
| <b>CHANGES IN BEHAVIOUR AND PERFORMANCE</b>                 | <ul style="list-style-type: none"> <li>Physically and socially active</li> <li>Performing well</li> <li>Connected to others</li> </ul>                                                                                         | <ul style="list-style-type: none"> <li>Decreased social activity</li> <li>Procrastination</li> <li>Decreased social involvement</li> <li>Making excuses to avoid what you otherwise would enjoy</li> </ul>                                         | <ul style="list-style-type: none"> <li>Avoidance</li> <li>Skipping class</li> <li>Decreased performance, lower grades</li> <li>Not going out, avoiding close friends and family</li> </ul>                                                               | <ul style="list-style-type: none"> <li>Withdrawal</li> <li>Dropping out of class</li> <li>Cannot perform assignments</li> <li>Isolating</li> </ul>                                                                                       |
| <b>PHYSICAL CHANGES</b>                                     | <ul style="list-style-type: none"> <li>Normal sleep patterns</li> <li>Good appetite</li> <li>Feeling energetic</li> <li>Maintaining a stable weight</li> </ul>                                                                 | <ul style="list-style-type: none"> <li>Trouble sleeping</li> <li>Changes in eating patterns</li> <li>Some lack of energy</li> <li>Some weight gain or loss</li> <li>Less attention to hygiene</li> </ul>                                           | <ul style="list-style-type: none"> <li>Restless sleep</li> <li>Loss/increase of appetite</li> <li>Some tiredness or fatigue</li> <li>Fluctuations or changes in weight</li> <li>Poor hygiene most of the time</li> </ul>                                 | <ul style="list-style-type: none"> <li>Cannot fall/stay asleep</li> <li>No appetite/over eating</li> <li>Constant and prolonged fatigue or exhaustion</li> <li>Extreme weight gain or loss</li> <li>Consistently poor hygiene</li> </ul> |
| <b>CHANGES IN SUBSTANCE USE</b>                             | <ul style="list-style-type: none"> <li>Limited alcohol consumption, no binge drinking</li> <li>Limited/no addictive behaviours</li> <li>No trouble/impact (social, economic, legal, financial) due to substance use</li> </ul> | <ul style="list-style-type: none"> <li>Regular to frequent alcohol use, binge drinking</li> <li>Some regular to addictive behaviours</li> <li>Limited to some trouble/ impact (social, economic, legal, financial) due to substance use</li> </ul> | <ul style="list-style-type: none"> <li>Regular to frequent alcohol use, including binge drinking</li> <li>Struggle to control addictive behaviours</li> <li>Increase trouble/impact (social, economic, legal, financial) due to substance use</li> </ul> | <ul style="list-style-type: none"> <li>Regular to frequent binge drinking</li> <li>Addiction</li> <li>Significant trouble/impact (social, economic, legal, financial) due to substance use</li> </ul>                                    |

Adapted from the University of Saskatchewan Student Counselling Mental Health Continuum and the Mental Health Commission of Canada.  
This information is not intended to be a substitute for an informed discussion with a health care provider.

## *The Grad Hub*



The College of Graduate and Postdoctoral Studies (CGPS) designed the Grad HUB (<https://cgps.usask.ca/onboarding/index.php>) specifically for graduate students, by graduate students. Here, you'll find timely information tailored to every stage of your program. The page includes the links to many helpful information of your graduate study. The information is ranging from your academic study advise, research activity advise to your health. When you have questions, this is a good place to start with. It is recommended to visit this page in the early stage of your study so that you know what CGPS can help your study.

## **FACILITIES AND SERVICES**

### ***Department Space***

The Food and Bioproduct Sciences department is in the Agriculture Building. The total facilities consist of two teaching laboratories, two pilot plants, multiple research laboratories, offices, and service space such as preparation/wash-up room, equipment room, cold rooms, sensory room, common plug-and-play areas, and so on.

### ***Office and Laboratory Space***

Best efforts will be made to accommodate all M.Sc. and Ph.D. students with functional workspace within close proximity to their labs and supervisors. Each general workspace area will have a telephone (no long-distance access), a live port for network connecting (and wireless connectivity), a desk, a chair, and a cabinet/file drawer for storage. Each student is responsible for maintaining a clean, respectable and efficient workspace. The department does not provide individual office spaces for M.Agr. students; however, project supervisors may have some working spaces in their laboratory. General study spaces are provided in the various library locations.

Each research laboratory is under the control of a specific faculty member, and any student using a laboratory is subject to the rules and regulations applying to it.

Students working in non-university laboratories are subject to all the controlling organization's policies with respect to space, equipment and other matters.

All students are responsible for the tidiness and cleanliness of their own research and bench areas. These are important criteria for the maintenance of an effective working environment, particularly for microbiological work.

### ***Secure locker storage***

The College office (2D30) provides use of lockers throughout the college free of charge. You will need to supply a lock. These are assigned on an annual basis, renewable each September to retain the same locker (or a new one in a different location if required). The Department will provide secure space for your belongings (but not necessarily locked). Some supervisors *may* provide lockable storage in their working laboratory.

### ***Equipment Use and Availability***

Some equipment is purchased by the department and is available for general use, but most scientific equipment is purchased with grant funds by individual faculty members and is therefore under the control of the purchaser. It is departmental policy to maximize the use of equipment, however, since it is often not feasible for financial reasons to duplicate items. Equipment in

your research supervisor's laboratory will be generally available to you, but the use of any other equipment, chemicals or facilities must be negotiated with the faculty member in control. Ingenuity, respectful dialogue, and a record of careful use of equipment become important factors in securing access to what you need.

Sometimes the department does not have a specific piece of equipment which a graduate student needs. In this case, the research supervisor or a member of the advisory committee can usually advise on its availability elsewhere in the university or in one of the associated laboratories. Again, it is very important to approach the owner of such equipment correctly, and to use it responsibly, in order that the good relationships which exist on campus in regard to the joint use of equipment can be maintained.



### ***Departmental Lab Equipment***

Below you will find a list of some of the equipment available in our Departmental labs:

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ai Lab</b><br>3D13, 3D13.1, 3D05.2,<br>and 3E03 | 2x Shaking water bath (VWR)<br>Rheometer DHR-20 (TA Instruments)<br>AE150 pH benchtop meter (Fisher Scientific)<br>Analytical balance (Sartorius)<br>Centrifuge 5424 (Eppendorf)<br>Differential scanning calorimeter DSC 8000 (PerkinElmer)<br>FG2002-S Balance (Mettler Toledo)<br>Genesys 30 Visible Spectrophotometer (Thermo Scientific)<br>HPLC, Agilent 1260 Infinity II LC System (Agilent)<br>Laboratory Mill 3100 (Perten)<br>Twin-screw research-scale extruder TwinLab-F 20/40 (C.W. Brabender)<br>Rapid visco analyser RVA 4800 (Perten)<br>Titrand 888 Autotitrator (Metrohm AG)<br>High-performance anion-exchange chromatography DIONEX ICS-5000 (ThermoFisher)<br>High-performance anion-exchange chromatography DIONEX ICS-6000 (ThermoFisher)<br>Micro-viscoamylograph (C.W. Brabender)<br>Dynamic mechanical analyzer DMA 8000 (PerkinElmer)<br>Universal testing machine 34TM-10 (Instron)<br>Texture analyzer TA.XT plus (Texture Technologies) |
| <b>Eskiw Lab</b><br>2D88, 2D91 and 2C28            | Systems Infrastructure includes: Cell Culture, Level 1 and 2 Controlled Containment,<br>Equipment:<br>X51 Olympus Epifluorescence Microscope<br>Rotogene qRT-PCR system; High Frequency Sonicator, iBright Gel Doc System (DNA<br>and Protein/Western Blot)<br>PCRs;<br>Class IIB biosafety cabinet<br>Liquid nitrogen storage<br>preparatory and analytical electrophoresis systems for DNA, RNA and Protein                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Fang Lab</b><br>2D88 and 4E19                   | Spectrophotometer, fluorescent/bright field microscopy, biosafety cabinet, -4 °C fridge, -<br>20 °C freezer, microcentrifuges, refrigerated benchtop centrifuges, precision water bath                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Korber Lab</b><br>4E05 and 4E19                 | Level 2 containment microbiological laboratory<br>-80°C ultra low temperature freezers<br>Shaker water baths, benchtop shakers<br>Nikon Eclipse C2 confocal microscope system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <p>Phase contrast, epifluorescence, DIC, dark field photomicroscopes</p> <p>Computer workstations and software for digital &amp; video image/analysis</p> <p>Micro- and refrigerated high-speed floor centrifuges</p> <p>2D – Isoelectric focusing &amp; PAGE protein electrophoretic analysis</p> <p>2D – DIGE (differential in-gel electrophoresis)</p> <p>BioRad D-Code Denaturing Gradient Gel Electrophoresis (DGGE) system</p> <p>QuBit low-volume DNA/RNA/protein quantitation</p> <p>Preparatory and analytical electrophoresis systems for DNA, RNA and protein synthesis, isolation and sequencing</p> <p>PCR, RT-PCR</p> <p>MiSeq Illumina high-throughput sequencer</p> <p>pH/Eh meters, spectrophotometers, fluorimeter</p> <p>96-well Scanning microtiter plate reader</p> <p>Anaerobic chambers Class 2 Nuaire Biosafety cabinet &amp; Fume Hood</p> <p>Note: on-campus fee-for-service sequencing for short/long reads (DNA/RNA)</p> |
| Zhang Lab<br>3E13              | <p>Agilent 1100 HPLC equipped with DAD (diode array) and RI (refractive index) detectors (currently not working);</p> <p>Agilent 1200 HPLC with DAD detector</p> <p>Shimadzu UHPLC-DUIS triple quadrupole mass spectrometer (co-shared by Haixia and Yongfeng)</p> <p>LC system for sugar separation (Dionex)</p> <p>Thermomixers with temperature control; water bath, sonicator, two analytical balances</p> <p>Ultracentrifuge for 1.5-2 mL microtubes (no temperature control)</p> <p>UV/Vis spectrophotometer</p>                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nickerson Lab<br>3E11 and 3D05 | <p>Malvern Mastersizer 2000 with wet dispersing cell</p> <p>Malvern Zetasizer with pH titrator and 90° dynamic light scattering capacity</p> <p>Micro-Kjeldahl digestion and distillation units</p> <p>Horiba Jobin Yvon FluoroMax-4 Spectrofluorometer</p> <p>Lauda Automatic tensiometer</p> <p>Spectrophotometer</p> <p>Bio-Rad Low pressure liquid chromatography (FPLC) instrument</p> <p>Texture Analyzer</p> <p>Ultrasonicator</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Qiu Lab<br>4E08 and 4E19       | <p>CFX Connex Real-time PCR System (Biorad)</p> <p>7890A/5945C GC-MS System (Agilent)</p> <p>Polymerase chain reaction systems: robotic and fast cycling ones that do not have real-time capacity (Eppendorf).</p> <p>DNA/RNA electrophoresis system (Thermo Scientific)</p> <p>Protein electrophoresis system (BioRad)</p> <p>Gel-documentation system (Alpha Innovator)</p> <p>Refrigerated centrifuge (Eppendorf)</p> <p>Temperature-controlled incubators (37 C and 28 C, IsoTemp)</p> <p>Thermomixer (Eppendorf)</p> <p>Refrigerated shaker (Thermo Scientific)</p> <p>Water purification system (Barnstead)</p> <p>Vacuum concentrator (Eppendorf)</p> <p>-80C deep freezer (Thermo Scientific)</p> <p>Solvent heating-evaporator: for preparation of fatty acid derivatives</p> <p>HPLC with fluorescence and diode array detectors</p>                                                                                                       |
| Ghosh Lab<br>4E83 and 4E76     | <p>Nikon eclipse E400 equipped with a Nikon DS-FiL colour camera</p> <p>Linkam PE94 &amp; LTS 120 temperature controller</p> <p>Rheometer (TA Instrument AR-G2)</p> <p>Vacuum ovens, Drying oven, incubators</p> <p>Brinkmann Rotavapor</p> <p>Vortex mixture</p> <p>GC with Olfactory capabilities</p> <p>High Pressure Homogenizer (Avestin Emulsiflex C3)</p> <p>Mastersizer 3000</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                        | Methrom Autotitrator<br>High-speed Polytron Blender<br>Force Tensiometer (Kruss)<br>Optical Tensiometer (Kruss)<br>Dynamic Foam Analyzer (Kruss)<br>Differential Scanning Calorimeter (DSC 2000, TA Instruments)<br>Photocentrifuge LUMiSizer (LUM Americas)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Tanaka Lab<br>4E03                                     | High-speed centrifuge Sorvall RC28S (rotors: GSA, SS-34, GS-3, SA-600)<br>PCR (basic capability)<br>UV photometers<br>Gel documentation system (no analytical software)<br>FPLC (Acta)<br>Polytron homogenizer<br>Bowl-lift stand mixer<br>Ultrasonic cell disrupter<br>Food processor<br>Incubators and water baths                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Wang Lab<br>4E15 and 4E19                              | 2x Biosafety II Laminar Hood<br>2x Chemical Hood<br>NanoDrop<br>Illumina MiSeq for next-generation sequencing<br>96 well-plate gradient thermal cycler for PCR amplification<br>Real Time PCR and microarray scanner for DNA quantification and gene expression<br>Molecular Denaturing Gradient Gel Electrophoresis (DGGE)<br>DNA/RNA Gel Electrophoresis System<br>SDS-PAGE protein electrophoresis<br>BioDoc-It Imaging systems<br>UV transilluminator<br>Microcentrifuge and high-speed benchtop centrifuge<br>Eppendorf vacufuge<br>Microscopes (fluorescence, inverted and optical)<br>Digital microscopic camera kits<br>Computer station<br>Incubator/shakers, 2x CO <sub>2</sub> incubators<br>Refrigerator/freezers<br>Magnetic stirrer hot plates<br>Microwave<br>Water bath<br>Balance/Analytical balance<br>Micropipettes and other basic equipment (vortexes, minicentrifuges, etc.)<br>Cryopreservation system<br>Cold chamber for microbial isolates and DNA preservation |
| Preparation Room 4E29                                  | Refrigerated floor centrifuge,<br>Bench top centrifuge<br>Autocleave system (2)<br>Ultra centrifuge (Before using them, consult with Dr. Woytowich)<br>-80 C freezer (consult with Dr. Zhang before use)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| FDSC Teaching lab<br>3E75 and 3E73<br><br>Yuanlong Cao | Agilent Capillary gas chromatography system with FID.<br>Proximate analysis equipment (moisture, ash, lipid, protein, and crude fibre).<br>Moisture by traditional forced-air oven, IR, and Karl-Fischer<br>Handhold refractive index system.<br>Hunter Lab Colorflex system (colour measurement).<br>Aqualab 4TE water activity meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Pilot Plant 3E21<br><br>Sara Lui                       | Freeze Dryer<br>Ice making machine<br>Meat processing equipment (Grinder, vacuum tumbler, bowl chopper, Injector, stuffer, smoke house, retort and other thermal processing systems)<br>Torsion gelometry equipment and Texture Press<br>CIE color analysis (HunterLab)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                               |                                                                                                                                                                                                               |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               | Extruder (Must talk to Dr. Ai)<br>Microfluidizer<br>Depulper<br>Impringment oven<br>Combi oven                                                                                                                |
| Fermentation lab 4E77                         | 5 x 5-L Bioflow III fermenter<br>3 x 15-L fermenter<br>(Fermenters need training before use. Ask Dr. Tanaka or Korber)<br>Refrigerating incubator<br>Food dehydrator                                          |
| <b>College of AgBio Research Facility</b>     |                                                                                                                                                                                                               |
| Bioprocessing Pilot Plant (BPP)<br>6E06       | <a href="https://agbio.usask.ca/research/centres-and-facilities/bioprocessing-pilot-plant.php">https://agbio.usask.ca/research/centres-and-facilities/bioprocessing-pilot-plant.php</a>                       |
| <b>University Centre</b>                      |                                                                                                                                                                                                               |
| Saskatchewan Structural Science Centre (SSSC) | This centre is equipped with many instruments. They have experts to advise the utilization of these instruments. Details should be referred to<br><a href="https://sssc.usask.ca/">https://sssc.usask.ca/</a> |
| WCVI Imaging Centre                           | <a href="https://wcvm.usask.ca/research/facilities/centre-imaging.php">https://wcvm.usask.ca/research/facilities/centre-imaging.php</a>                                                                       |
| Canadian Light Source                         | <a href="https://www.lightsource.ca/">https://www.lightsource.ca/</a>                                                                                                                                         |

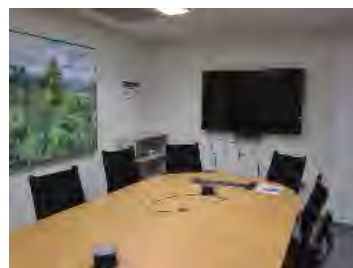
### ***Reading Room and materials***

The Department has a small reading room (Room 3E22, Agriculture Building see the picture below) containing a limited collection of books and periodicals. The key for this space is available in General Office but as a new M.Sc. or Ph.D. student, you will also be issued your own key. In addition, individual faculty members keep a number of books and journals on their shelves. Many of these are personal items but may be available for consultation on request to the faculty member concerned.



### ***Department meeting room (4E28)***

The department maintains a meeting room on 4<sup>th</sup> floor (4E28). The room is equipped with an 80-inch LCD monitor with online conference settings (dedicated PC and conference camera/microphone). The room can be booked through the department office or graduate student assistance office. The conference settings can be connected from your laptop through HDMI/USB-C connection. The manual for this connection is available at <https://teamdynamix.usask.ca/TDClient/33/Portal/KB/ArticleDet?ID=887> (Note: Windows laptops work with plug-and-play. Mac users need to install Logitech DisplayLink Manager (see above manual))



### ***Campus libraries***

The University of Saskatchewan has a total of eight libraries on campus and an abundance of online access to materials. To access any online service or material, you will require your NSID and password and in the case of hard copy materials, a student card.

#### **Important library links:**

- Library homepage: <https://library.usask.ca/>  
You can get to the library homepage from here or you can find a link on your PAWS page.
- Department of Food and Bioproduct Sciences (FABS) research guide: [https://libguides.usask.ca/food\\_Bioprodu](https://libguides.usask.ca/food_Bioprodu)  
This guide lists a host of library resources pertaining to food and bioproduct science.
- Grad Help: <https://libguides.usask.ca/gradhelp>

This guide brings together resources on topics such as student/supervisor relationships, the thesis/dissertation process, publishing, and more. This link provides many resources useful for your graduate study, including writing, usage of AI, and academic integrity.

For any library assistance during your studies, please contact Su Hyun Lim ([ysz419@usask.ca](mailto:ysz419@usask.ca)), AgBio Library Liaison. She is looking forward to getting to know you and to supporting you throughout your graduate studies at the University of Saskatchewan.

## General Office and Supplies

The front office staff (Kaelyn Fraser) and graduate administration staff (Shahrima Tahsin) are knowledgeable about academic and departmental procedures, and it certainly pays graduate students to develop a good relationship with them. A good relationship will go a long way to enhancing your tenure in the department and facilitating the successful completion of your program. The office staff maintains day-to-day operations and provides support to faculty. They are also there to assist you. They deal with a host of forms and procedures which are used to keep university business flowing smoothly. In short, they are probably the most valuable people in the department concerning the kinds of things graduate students need to know.

Below is a table outlining some of the principal areas of responsibility for each office staff member. Please refer to this for any inquiries you might have:

| Name/Position                                                              | Phone    | Email                                                                                                                                                                                                                                                                                                                                          | Duty                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Kaelyn Fraser</b><br>Department<br>Operations<br>Assistant<br>room 3E08 | 966-5024 | <a href="mailto:kaelyn.fraser@usask.ca">kaelyn.fraser@usask.ca</a>                                                                                                                                                                                                                                                                             | Front reception<br>Parking validation<br>Key coordinator<br>Photocopy account manager<br>Meeting Room/projector bookings<br>General course registration<br>All other duties related to Departmental Office Operations                                                                                                          |
| <b>Shahrima Tahsin</b><br>Graduate Program<br>Administrator<br>room 2D14   | 966-5025 | <a href="mailto:fabs.gradstudies@usask.ca">fabs.gradstudies@usask.ca</a> or<br><a href="mailto:shahrima.tahsin@usask.ca">shahrima.tahsin@usask.ca</a><br><br>Note: If she is not available,<br>another GPA for the college can<br>help you. Please contact <a href="#">Debbie Banks</a><br>(x4963) or <a href="#">Melissa Zink</a><br>(x4145). | Stipend Letters<br>Student Support Fund (SSF) award coordination<br>Program documentation<br>Scholarship/grant applications and deadlines<br>Committee liaison<br>Point of contact for programs<br>Liaison with Graduate Studies<br>Liaison with Graduate Chair<br>All other duties related to Graduate Program Administration |

Limited amounts and types of stationery, overhead supplies, etc., are available in the office for student use, but it is departmental policy that research supervisors should provide the bulk of the stationery and graphics supplies used in research. These supplies are not to be used for students' course-related work. They need to supply their own stationery for those activities.

To maintain proper control and as a matter of courtesy, one of the front office staff members should be consulted before any office equipment or supplies are used.

For public events, our department has banners available. If you have an opportunity to represent the department at a public event, you may borrow a banner from the main office. Please coordinate with the office staff and faculty regarding their use.

Theses written by past graduate students in the department are housed in the reading room. These often serve as useful models for thesis writing and may be examined by arrangement with the office staff.



FABS Front office 3E08

## Financial-related matters

M.Sc. and Ph.D. students: The College Finance Administration unit handles financial matters, *e.g.*, stipends, salaries, scholarships, and so on. You can either ask your supervisor, or you can directly ask the unit Graduate Admin or AgBio Finance regarding financial matters.

M.Agr. students: The Department, College and University does not provide financial support in any form.

## ***Mail***

Each M.Sc. and Ph.D. student is assigned an individual or shared mailbox in the General Office and may use the department as a mailing address. The full address is:

University of Saskatchewan  
Department of Food & Bioproduct Sciences  
Room 3E08,  
51 Campus Drive  
Saskatoon, SK  
S7N 5A8

Mail is received in the early afternoon. Outgoing mail, properly stamped if destined for an off-campus address, may be left in the office.

## ***AgBio Stores, Shipping, and Receiving***

AgBio Shipping and Receiving, located in Room 1E28 of the Agriculture Building, accepts incoming deliveries for College departments and coordinates outgoing domestic and international shipments. AgBio Stores also maintains an inventory of commonly used laboratory supplies and selected chemicals. Purchases and shipping charges are processed using an authorized CFOAPAL, which students should confirm with their supervisor.

<https://agbio.usask.ca/agbio-shipping-and-receiving.php>

## ***Telephones***

Each major work area in the department is provided with a telephone which is connected to the university's system. Saskatoon and university directories are available at each set. To call off-campus, dial "9" followed by the area code and 7-digit number; to call on-campus, it is necessary to use only the 4-digit local number. All circuits other than those in the General Office and in faculty members' offices are restricted and cannot be used for long-distance calls. If long-distance calls related to research are necessary, they should be arranged with the research supervisor. For emergencies, you must dial 9-9-1-1 on University phones and 9-1-1 on cell phones. Also, Campus Security can be reached at 5-5-5-5 (306-966-5555).

## ***Use of the Photocopy Machine and Printing***

The department's photocopy machine is located in Room 3E08, Agriculture Building. The machine cannot be used without a key fob. Graduate students each have their own code, and it will be provided to you when you start your program (for M.Agr. students, it will be when they start their project, typically in May). All copying related to your supervisor's research is charged to the appropriate research accounts. Departmental copying (such as seminar handouts) must be recorded in the General Office.

## ***Computing***

Your NSID gives you access to a number of computer labs on campus. More details can be found here: <https://servicecatalogue.usask.ca/it/student-computer-labs-and-facilities.php>.

You also have access to Virtual Computer Lab where you can access university software remotely from anywhere on your own device, using an app or most browsers. For details see the Software and Computer Labs link on your PAWS account. Assistance with computing can be obtained through an email to [itsupport@usask.ca](mailto:itsupport@usask.ca).

The college has computer labs in 2D15, 3D67, and 3D85. These are open from 7:30 am to 10:00 pm on weekdays. The 3D67 lab is open on weekends; all the others are closed on weekends. The "R" statistical software and SPSS are available in all of the labs, and SAS is available in 3D67. Several Statistical packages can also be accessible via USask Virtual Computer Lab.

Please check the general tips regarding technology at <https://students.usask.ca/study/tech-tips.php>

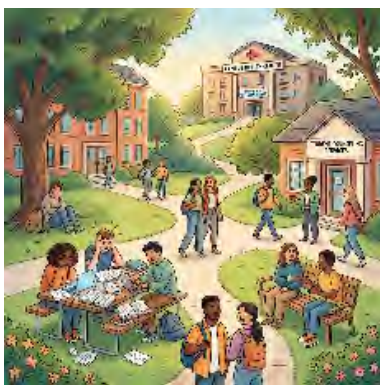
## ***Keys***

An outside door key and keys to rooms to which a particular student may require access are obtained through the front office; all key requests must be approved by the Research Supervisor and the Department Head. Keys usually take several weeks to acquire. Keys are provided to individuals and are stamped with an individual identification number. You will be required to sign for the keys you receive (check to see that they work) and to return them to the office when your program is completed; the university reserves the right to impose sanctions if keys are not returned.

After you received keys: Do not lend your keys to anyone. If you are locked out of an office or laboratory, contact the FABS General Office during regular office hours. If the office is unavailable and no authorized person can provide access, contact Protective Services at 306-966-5555 for assistance.

## ***Parking***

Campus car parking space is at a premium and parking is strictly controlled. Applications for a parking spot may be made at Parking Services. There are several pay-lots and numerous meters around the campus; overstaying time at these or parking in non-designated areas is highly likely to attract a ticket and should be avoided. You can pay meters from your cell phone using an appropriate app <https://parking.usask.ca/options/paybyphone.php#UsingPaybyPhone>



Creative Common licence

## REGISTRATION IN GRADUATE COURSES

**Table 1: Minimal requirements for completion of M. Sc. and Ph.D. degrees**

| Degree or Diploma              | Successful Completion Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Other Requirements                                      | Transferable to other program?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Master of Agriculture (M.Agr.) | 70% average, 24 credit units, among which at least 18 credit units must be at 800 level, and at least 18 CU must have designation of FABS, FDSC, or APMC (other courses directly related to their degree program (FDSC or APMC) may be granted by AC).<br>Must register and attend FDSC/APMC990 Seminar series.<br>Complete APMC/FDSC 992 and the project report is approved by advisory committee.                                                                                                                                                                | APMC 990, 992 or FDSC 990, 992, and GPS 960             | Yes. With the approval of their Supervisor, Advisory Committee, and Graduate Chair, students may transfer from project-based M. Agr. program to thesis-based M.Sc. program, where this option is available.                                                                                                                                                                                                                                                                                                    |
| Master of Science (M.Sc.)      | 70% average, 9 credit units at 800 level<br>Required course: FDSC 808 (for students registered after September 2025)<br>Seminars: one 20 minute, one 40 minute, and a defense (Students registered after September 2025 require one 40-min seminar with minimal overlap to their research project, and a defense seminar).                                                                                                                                                                                                                                         | APMC 990, 994 or FDSC 990, 994, and GPS 960<br>FDSC 808 | Yes, with the approval of their Supervisor, Advisory Committee, and Graduate Chair, students can be transferred to a Ph.D. program if they have completed courses in their POS and with good research progress. Successful completion of a qualifying exam within the first 24 months of initial registration to be transferred from M.Sc. to Ph.D., thus the transfer process must be initiated before 24 months from the initial registration. Also they can be transferred to project-based M.Agr. program. |
| Doctor of Philosophy (Ph.D.)   | 70% in all courses, 3 credit units<br><br>Additional required course: FDSC 808 (for students registered after September 2025)<br><br>Ph.D. candidacy assessment: The candidacy assessment should be completed within 24 months from the initial Ph.D. program registration. Generally, the assessment will take place after course work has been completed.<br><br>Seminars: two each 40 minutes in length, a candidacy assessment within the first 24 months of initial registration and a defense (Students registered after September 2025 require ONE teaching | APMC 990, 996 or FDSC 990, 996, and GPS 960<br>FDSC 808 | Yes. The students can be transferred to PGD M.Agr., or M.Sc. program with the approval of their Supervisor, Advisory Committee, and Graduate Chair.                                                                                                                                                                                                                                                                                                                                                            |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
|                    | seminar (aiming for undergraduate year 3-4) students, and ONE research seminar with content having no overlap (or minimal overlap) with their research, and a defense seminar).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |               |
| Ph.D. transfer     | <p>70% in all courses, 12 credit units (9 at M.Sc. 800-level and 3 beyond M.Sc.)</p> <p>Required course: FDSC 808 (for students registered after September 2025)</p> <p>Ph.D. candidacy assessment: The candidacy assessment should be completed within 12 months from the transfer to Ph.D. program.</p> <p>Seminars: two each 40 minutes in length, a candidacy assessment within the first 36 months of initial registration and a defense (Student registered after September 2025 require ONE teaching seminar (aim for undergraduate year 3-4) students, and ONE research seminar with content having no overlap (or minimal overlap) with their research, and a defence seminar).</p>                                                                                                                                                                                                    | Same as Ph.D. | Same as Ph.D. |
| Direct Entry Ph.D. | <p>70% in all courses, 12 credit units at the 800 level, 9 credit units must be completed in the first year of the program</p> <p>Required course: FDSC 808 (for students registered after September 2025)</p> <p>Successful completion of a qualifying exam in the first 12 months of the program</p> <p>Ph.D. candidacy assessment: The candidacy assessment should be completed within 24 months from the initial Ph.D. program registration. Generally, the assessment will take place after course work has been completed.</p> <p>Seminars: two each 40 minutes in length, a candidacy assessment within the first 24 months and a defense (Student registered after September 2025 require ONE teaching seminar (aim for undergraduate year 3-4) students, and ONE research seminar with content having no overlap (or minimal overlap) with their research, and a defense seminar).</p> | Same as Ph.D. | Same as Ph.D. |

**Note: Mandatory safety courses are also required as part of your program**

Once you arrive to start your program, your course options for your first term will usually be discussed with your primary supervisor. Your Program of Studies (POS) will be decided during your first four months in the program following your initial meeting with your advisory committee.

For M.Agr. students, the supervisor will communicate the general topic area to the student and confirm a general project area. The supervisor will work with the graduate chair to list the potential courses for your Program of Study for the first four months. The student will consult both the supervisor and the Chair soon after their arrival, and then the first advisory committee meeting will be held within the first week of the student's arrival to discuss and approve the POS.

**Registration in 990, 992, 994 and 996 courses:** In addition to academic courses, all students in the department must register **each year** in a seminar course, numbered 990, and in the appropriate project/research course (992 for M.Agr., 994 for M.Sc., and 996 for Ph.D.). This is applied to even spring/summer semester. If you miss the registration, you may incur the late registration fee. Please be sure that you are registered in the appropriate program for your degree (*i.e.*, APMC or FDSC). Attendance is mandatory at each seminar and it is recorded.

**Ethics courses:** The general course, GPS 960 – Ethics and Integrity, is required for all students in their first term. (Note: If you have finished the M.Sc. and start a Ph.D. program, you must retake GPS960.)

In addition to GPS 960, students may also need to take GPS 961 or GPS 962. The student's Advisory Committee will review the student's research area and determine whether or not the student needs to take GPS 961 – Ethics in Human Research and GPS 962 – Ethics in Animal Research. The Advisory Committee's determination should be recorded in DegreeWorks.

Students register for the ethics courses through PAWS as they would for any other course. They will find the CRN under the subject menu on Course Offerings Search page as Graduate and Postdoctoral Studies.

The ethics course(s) appear on the students' academic record. Deadlines to register and withdraw in the course(s) are the same as all other courses.

Most of your graduate courses will usually be discussed and agreed upon during your first and subsequent advisory committee meetings. (The minimum requirements for M.Agr., M.Sc. and Ph.D. degrees are shown in Table 1 above.) Graduate students are permitted to audit graduate (800 level) or undergraduate courses (300- and 400-level courses only). Graduate students wishing to audit a class must complete and submit the appropriate documentation through Graduate Office and [Student Central](#). When considering which courses to take, students are advised to investigate offerings from other units on campus, in addition to those offered by FABS. Students are advised to speak with instructors of any course under consideration, as well as to obtain course outlines, get on waiting lists, etc. M.Sc. students may be given permission to add 300 or 400 level undergraduate courses to their Program of Study. However, graduate chair and CGPS permission is required to add the undergraduate course to add it as a part of the POS so that the student central waive the undergraduate tuition fees associated with the respective course. Graduate Program Administrator is responsible to coordinate this with the supervisor, Graduate Chair, CGPS, and Student Central. Ph.D. students are not eligible to take undergraduate course as part of the POS.

Be aware of deadlines for registration and enrollment every term, as late fees will be assessed for late registration and late tuition payment. The registration procedure is repeated at the beginning of each academic term. Graduate students must maintain continuous registration during their programs by registering each term until program completion. Failure to register for three (3) consecutive terms is just cause for the CGPS to withdraw a student from their program. The student shall be provided an opportunity (15 days) to register. A student who has been withdrawn from their program and then later wishes to resume their graduate program must make a formal application through the academic unit. The fee schedule and your account status can be obtained through your PAWS account at any time.

After registration, the need to change a course may arise for various reasons. The research supervisor may give such permission for a change in registration, following consultation with the graduate chair and the student's committee. This may also result in the need to update your Program of Studies.

After a Program of Studies has been approved by the advisory committee, the student is expected to fulfill all requirements of the program. Successful completion of the requirements will result in the award of the degree. Minor changes to the approved Program of Studies can be approved by your advisory committee. Major changes, such as a change in supervisor or in research area, require the approval of a new Program of Studies.

## REQUIREMENTS FOR M.AGR. DEGREE

### Outline

- Appointment of Advisory Committee (AC), consisting of the advisory committee chair, and the supervisor (or co-supervisors) with an initial AC meeting held within the first four months.
- The Initial Program of Studies (POS) is defined with a minimum of 24 CU of courses. Among these 24-CU, 18-CU must be at 800-level and 18-CU must have the designation of FABS, FDSC, or APMC (other designation must be approved by AC.).
- FDSC 808 is strongly recommended.
- Research project proposal developed and presented to advisory committee within the first 4 months. (A template for the proposal is available from the GPA or on the College website. <https://agbio.usask.ca/students/graduate/graduate-handbooks-reference-documents.php>)
- Research project work undertaken concurrently with courses. It is expected to start in the second semester or earlier of their study. (Note: A major part of research is expected in the third semester, but for the benefits of student, it is recommended to start the research activities in the earliest possible time during their first 8 months.)
- Completion of research project.
- Research project report will be examined and passed by the advisory committee.
- If, in the opinion of the advisory committee or department, a student is not making satisfactory progress with coursework or research, the department may recommend that the student be transferred to PGD program or the student be required to withdraw.



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## REQUIREMENTS FOR M.SC. DEGREE

### Outline

- Appointment of Advisory Committee (AC), consisting of the committee chair, the supervisor (or co-supervisors), and at least one regular member, with an initial AC meeting held within the first four months.
- The Initial Program of Studies (POS) is defined with a minimum of 9 CU of courses at the 800 level. (See Table 1 for mark requirements).
- An evaluation examination will not usually be held but may be required at the discretion of the advisory committee.
- Research proposal developed and presented to advisory committee within the first 8 months. (A template for the proposal is available from the GPAor on the College website. <https://agbio.usask.ca/students/graduate/graduate-handbooks-reference-documents.php>)
- Research work undertaken concurrently with courses.
- Must present a 40-min Seminar (the theme of their research project is not allowed).
- Completion of research.
- AC meetings to discuss research progress must be held at least once every 12 months, as per CGPS policy. AC Chair must compile the progress report (GPS210) and send it to Graduate Office for further processing. Effective, May 2026, Students' Advisory Committee Chair, supervisor (s), and the students' signature in GPS 210 is required.
- Permission to write thesis given by the advisory committee, and preparation of thesis in consultation with the research supervisor. Guidelines of the format and style of the thesis are available from the department. Ideally, it should be approved in 17 ~ 20 months.
- Draft thesis approved by advisory committee.
- Submission of one examination copy of the thesis to the GPA, who will forward it to an arm's-length examiner (usually a member of another unit on campus). Other copies will be distributed to the examining committee. The arm's-length examiner is given a minimum of **2 weeks** for review of the thesis.
- Defence seminar and oral thesis defense examination. Award of degree recommended to the Faculty of Graduate and Postdoctoral Studies.
- Submission of one digital version of the thesis to the ETD site.
- If, in the opinion of the advisory committee or department, a student is not making satisfactory progress with coursework or research, the department may recommend that the student be required to withdraw.

## REQUIREMENTS FOR PH.D. DEGREE

### Outline

- Appointment of advisory committee (AC), consisting of the committee chair, the supervisor (or co-supervisors), a cognate member, and at least one regular member, with an AC initial meeting held within the first four months.
- The Initial Program of Studies (POS) is defined with a minimum of 3 CU of courses at the 800 level, plus FDSC 808 as the required course. A grade below 70% in any course included in the Ph.D. program is considered to be unsatisfactory, and the matter is reviewed by the advisory committee.
- Must present a 40-min Seminar (the theme of their research project is not allowed) and a 40-min teaching seminar (the theme related to their topic is allowed).
- Research proposal developed and presented to advisory committee within the first 8 months. (A template for the proposal is available from the Graduate Programs Assistant or on the College website. <https://agbio.usask.ca/students/graduate/graduate-handbooks-reference-documents.php>)
- Qualifying examination within three months of arrival on campus (only for probationary students).
- Research work taken concurrently with course work.
- Candidacy Assessment taken once coursework has been completed, and before the end of year 2 (24 months from the initial Ph.D. registration). On the basis of coursework, research, and successful performance in the candidacy exam, the student will be recommended for admission as a fully qualified Ph.D. candidate. This assessment is used to assess the student's overall and disciplinary knowledge. The Department policy document with respect to candidacy examinations will be distributed to the student and the AC committee. Generally, the areas of questioning by each AC member will be determined ahead of time and communicated to the student. (For details regarding the candidacy examination, please refer to Appendix A Guidelines.)
- FOR DIRECT ENTRY PH.D. STUDENTS: POS is defined with 12 CU of courses at the 800 level, including FDSC 808 as a required course. Among which, 9 CU must be taken within the first year of the program.
- FOR DIRECT ENTRY PH.D. STUDENTS: Students must pass the qualifying examination within the first year. (See Appendix A Guidelines)
- FOR STUDENTS TRANSFERRED FROM M.SC. TO PH.D.: POS is defined with a total of 12 cu courses, of which 9 cu must have been taken before the transfer. If FDSC 808 has not been taken as an MSc student, then they must take 6 CU courses after the transfer, including FDSC 808. (See Guideline for the administration of MSc to PhD transfer)
- FOR STUDENTS TRANSFERRED FROM M.SC. TO PH.D.: Students must pass the qualifying examination within the first 2 years. (See Appendix A Guidelines)

### At the completion of research

- AC meetings to discuss research progress must be held at least once every 12 months, as per CGPS policy.
- Permission to write thesis given by the advisory committee, and preparation of thesis in consultation with the research supervisor. Guidelines for the format and style of the thesis are available from the department.
- Draft of thesis approved by advisory committee.
- Appointment of a University Examiner and external examiner for the defense (to be done by the supervisor)
- Submission of one examination copy of the thesis to the GPA, who will forward it to the Dean of Graduate and Postdoctoral Studies. The CGPS must be sent the necessary documentation a minimum of **five (5) weeks** prior to the desired oral defence date. After approval by the CGPS, the External Examiner must have the thesis at least **four (4) weeks** prior to the defence. Other copies will be distributed to other members of the examining committee.

- Defence seminar and oral thesis defence examination.
- Award of degree recommended to the Faculty of Graduate and Postdoctoral Studies
- Submission of one digital version of the thesis to the ETD site.
- If, in the opinion of the advisory committee or department, a student is not making satisfactory progress with coursework or research, the department may recommend that the student be required to withdraw.

## INFORMATION FOR TRANSFER STUDENTS BETWEEN MASTER'S DEGREE PROGRAMS

With the approval of their Supervisor, Advisory Committee, and Graduate Chair, students may transfer from a program with a thesis (M.Sc.) to one with a project (M.Agr.), or *vice versa*, where this option is available.

## INFORMATION FOR TRANSFER STUDENTS FROM MSC TO PHD

Under special circumstances, a M.Sc. student may petition the Departmental Advisory Committee to transfer from an M.Sc. to a Ph.D. program without first completing the requirements for the M.Sc. thesis.

The student must fulfill the following requirements in addition to those outlined by the CGPS:

1. Have both the supervisor(s)'s and M.Sc. Advisory Committee's approval to move to the Ph.D. Program,
2. Have the transfer take place either after completing his/her first year or no later than the end of the second year,
3. Have an academic record in the top decile (based on the last at least 9 cu's at the 800-level in last 2 years),
4. Demonstrate superior communication skills, both written and oral. Generally, this is shown by the authorship of a research manuscript that is publication-ready or submitted,
5. Demonstrate an ability to perform original research independent from the supervisor, preferably, with one accepted peer-reviewed publication,
6. Be already engaged in a research program that can readily meet the additional rigorous requirements of a Ph.D. (A revised proposal may be needed at the time of transfer),
7. Pass a qualifying exam (in lieu of the M.Sc. thesis defence). Also, a student, if initially accepted as a conditionally qualified student, must pass the qualifying examination to be fully qualified for the program. If failed, the student remains in the M.Sc. program.
8. Have completed/be enrolled in a minimum of 9 CU at the M.Sc. level (800-level).
9. Upon transfer, all requirements of the Ph.D. degree must be met, *i.e.*, a student must pass the Ph.D. candidacy assessment within 1 year after the transfer to be a Ph.D. candidate in the program.

### Voluntary Transfers

Transfers from one graduate degree program to another within the same department, or in another department, are permitted. Students may be required to meet certain criteria and/or other requirements once the transfer has occurred. Special fees may be assessed therefore it is advised that the student consult the current Graduate Studies Policy Manual at: <https://cgps.usask.ca/policy-and-procedure/index.php#ACADEMICS>.

### Qualifying examinations

The qualifying examination is a requirement of the Department of Food and Bioproduct Sciences for graduate students who are transferring from an M.Sc. program to a Ph.D. program without thesis defence, who directly enter into the Ph.D. program from a B.Sc. program, or whose acceptance specifies the examination as a requirement for full admission into the Ph.D. program. **A student failing the examination for the first time may take a second qualifying examination, but a second failure automatically disqualifies him/her from further work for the Ph.D. degree.** (For details, consult Appendix A Guidelines)

## SEMINARS

All graduate students must register each year in the seminar course (numbered 990) associated with their program, and they must attend and participate in the course regularly. The course coordinator will communicate specific requirements for APMC or FDSC 990 to students. Graduate students are required to present seminars in this 990-seminar series as well as their defence seminars. As of September 2025, M.Sc. students present ONE 40-min seminar with seminar content that is different (or minimal overlap) from their research project, and Ph.D. students present ONE 40-min teaching seminar (aim for undergraduate year 3-4 students), and ONE 40-min research seminar with content that is different (or minimal overlap) from their research project. Students who registered in or before the 2025 academic year need to follow the previous rule (*i.e.*, two seminars (one 20-minute, one 40-minute) are required for M.Sc. students in addition to an exit seminar. For Ph.D. students, two seminars (each 40 minutes in length) are required in addition to an exit seminar.

The preparation and presentation of a seminar should be taken very seriously, since it provides invaluable experience for future oral presentations at scientific meetings and for possible teaching assignments. Students' performance in seminars is frequently referred to in letters of reference as an indication of their potential teaching ability. The seminar experience is also critical for practicing public speaking.

In the absence of other instructions, the seminar should be timed to last 35 to 40 minutes. There should be a recognizable introduction, conclusion, and a summary. A summary handout/abstract (maximum 250 words) with key references should be prepared and submitted to the Graduate Program Assistant and seminar coordinator two weeks before the seminar date for distribution. Careful preparation of visual material is absolutely vital; text must be clearly legible to the audience, and this implies an adequate size and neatness. Students should discuss and obtain approval for all aspects of seminar preparation from their research supervisor or from the seminar coordinator.

It is always a good idea to rehearse one's seminar, complete with the visual aids. This helps with timing and getting used to speaking to PowerPoint slides. It is also a good idea to practice the presentation at a meeting before the actual seminar. Research supervisors usually organize a group meeting where students can present the paper and receive feedback and critique.

An evaluation sheet is distributed at each graduate seminar presentation and when completed the copies are collected by the seminar Chair. They are then given to the course coordinator and the student's research supervisor for discussion with the student. They usually provide very useful feedback on the student's performance and also provide a means for members of the audience to learn to criticize presentations constructively. Faculty members attending the seminar are required to provide a 'pass/fail' recommendation based on the student's performance at their seminar. A majority of 'pass' recommendations are required for a student to receive credit for the seminar. If a majority of recommendations are 'fail', the student needs to repeat the seminar. The student must use the feedback received from the faculty, seminar coordinator and supervisor to improve the seminar and presentation skills. Regular participation in a 990 course and successful presentation of the required seminar(s) will earn a grade of "CR" (completed requirements) upon completion of the degree.

In addition to the seminar courses organized for each graduate program, many other seminars are held on campus throughout the year. Attendance at these is strongly encouraged when the topic is relevant. Notices of seminars are always posted on the bulletin board near the General Office.



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## ROLES AND RESPONSIBILITIES OF THE RESEARCH SUPERVISOR AND ADVISORY COMMITTEE

### *Research Supervisor*

The research supervisor plays a key role in fostering your progress as a developing scientist; they are responsible for establishing your plan of study and coursework, for proposing the membership of your advisory committee, for ensuring that you progress towards fulfilling degree requirements in a timely fashion, and, most importantly, for working closely with you in your graduate research. The bonds a student forms with the research supervisor are often long-lasting, and founded upon both a close professional working relationship and friendship.

The research supervisor of a graduate student in the Department of Food and Bioproduct Sciences is usually a university member of the departmental faculty. If the student's research is to be conducted in one of the government laboratories or other institutions associated with the university, a member of staff of the associated organization who holds an adjunct appointment in the department usually serves as co-supervisor in conjunction with a university member; this arrangement ensures that the administrative aspects of the student's program are appropriately dealt with.

Professors differ in their philosophies of graduate training; some spend considerable time with their students, closely directing their studies. Others allow their students to explore widely and view their supervisory role as a sounding board on which students may try out new research ideas. Most professors fall somewhere between these extremes. For open communication, it is important that both parties understand their most comfortable style of learning and communication.

Occasionally, students find after beginning their work that their interests do not arouse the interest of the research supervisor, that the supervisor's program is not oriented in a direction the student wishes to pursue, or that they simply do not get along. If your current situation does not seem to be working, you should first raise your concerns with your supervisor; a frank discussion will often lead to the resolution of problems, which benefits both supervisor and the student, and to the resumption of productive work. If this approach does not resolve your concerns, you should consult the Graduate Chair or the Head of the department and consider a change in supervisor or project.

It is appropriate for a student to have some expectations of the research supervisor. The student, however, should not overlook the fact that the supervisor will have significant expectations as well. The research programs of professors are supported almost exclusively by grants and contracts for which they compete on a national basis. A major factor determining the success or otherwise of applications made by your supervisor is their record of research productivity, both past and current. When you have been accepted as a member of a professor's research team, and they have committed time, space and funding to your program, you are enjoying benefits that have been provided through the efforts of both the professor and others who have contributed to the program. In order to maintain their research momentum, they will expect you to work conscientiously and productively too. Prompt publication of research results is often the means by which researchers and students attract funding and obtain employment. Publication quality also matters for future opportunities. There are many venues for making a contribution that may be recognized including publication of papers in peer-reviewed journals, publication of abstracts in scientific meetings, publication of reviews, and patents, to name a few.

### *Student-Supervisor Agreement*

Graduate students in thesis-based programs must collaborate with their supervisor(s) to complete a student-supervisor agreement within the first twelve months of their program. The procedure and guidelines for completion of the agreement and the template used for the agreement can be found here:

<https://cgps.usask.ca/policy-and-procedure/Academics/supervision.php#34STUDENTSUPERVISORAGREEMENT>

Student-Supervisor Agreement Template: [https://cgps.usask.ca/documents/2020-rev-under-review\\_ssa\\_jun26.pdf](https://cgps.usask.ca/documents/2020-rev-under-review_ssa_jun26.pdf)

### *Advisory Committee (AC)*

The website of the College of Graduate and Postdoctoral Studies outlines the functions of the advisory committee (AC) for students in graduate degree programs. It can be found in the Policies and Procedures Manual, under section 3 on SUPERVISION AND ADVISORY COMMITTEES (<https://cgps.usask.ca/policy-and-procedure/Academics/supervision.php#31ADVISORYCOMMITTEE>). In FABS, each AC will have a chair, apart from the other committee members, as suggested by CGPS, selected from the FAB faculty members by the Grad Chair. The AC chair is a non-voting *ex officio* member of the advisory committee.

The initial planning of a degree program is usually done by the student and the research supervisor. This involves selecting the courses that are to be recommended to the advisory committee (AC), determining the general area in which the thesis research will be done, and providing the Graduate Chair with suggestions for membership of the advisory committee. The Graduate Chair is consulted at this stage because they are responsible for naming the members to the AC, inviting proposed members of the committee to serve and submitting the Program of Studies (POS). The Graduate Chair delegates the role of chairperson (AC Chair) for AC meetings and examinations to a faculty member. They will serve for the student's entire program. (For details, please refer to Appendix A. Guidelines)

### ***Advisory Committee Meetings***

One of the functions of the advisory committee is to periodically review the progress made by the student. The committee must meet at least once a year for this purpose.

Initial meeting: M.Sc. and Ph.D.: An initial advisory committee meeting is generally held within **4 months** of the student's arrival to look at the student's academic history and suggest appropriate coursework. If most courses have been chosen at this time, with the approval of the AC, a formal POS is developed.

Proposal meeting: M.Sc. and Ph.D.: A follow-up meeting is held after 6 – 8 months in the program to examine the student's research proposal and research activities. Each student registered in a research-based graduate degree program must prepare and submit a **formal research proposal** before, or soon after, thesis research is begun (check department template). This proposal should provide relevant literature background for the research you intend to pursue for your degree; it should include a full description of the objectives of the study, and the methods of data collection and analysis to be used, and should be organized in the form of the discrete experiments which are to be done. A milestone chart should be included to show the anticipated schedule for the research, and to provide a basis on which your subsequent progress can be judged. A more substantial proposal would be expected from a Ph.D. candidate than from a student in a M.Sc. program. The proposal should be discussed with your research supervisor, and copies prepared for presentation to your advisory committee. If the research proposal is presented to the committee beyond the 8-month mark in the program, the research proposal should also include a section on progress-to-date, including graphs, tables and interpretation of results.

Progress meetings: All thesis-based program graduate students must have their progress report meeting at least once in every 12 months. Students who fail to meet this requirement may be disqualified from university-managed financial support. Prior to a scheduled meeting (meetings should be scheduled by your supervisor in consultation with the AC Chair) you should consult with your research supervisor about the preparation of a written research proposal or progress report, depending upon the stage of your research. Research reports will typically include a title page, table of contents, introduction, materials and methods, results and discussion, and references. In general, the report should follow the format of a typical research publication, or chapter in a thesis. A template that details the research progress report format and content is available. The importance of the progress report in your degree should not be underestimated; it documents your research progress and provides supportive evidence of the quality of your efforts. In cases where a student wishes to transfer from a M.Sc. to Ph.D. program, the quality of these reports can be helpful supporting documentation for example, in consideration of awarding scholarships.

You will be responsible for distributing copies of your proposal or progress reports to the members of your advisory committee **at least two weeks in advance of your scheduled meeting**. You will also want to prepare your presentation in advance and in consultation with your supervisor. At the meeting, the committee will review your progress in coursework and may recommend changes or additions to your program. You will be asked to present your progress report or proposal (generally a 20–25-minute presentation), and the committee will discuss this with you. If necessary, the committee may recommend changes in your research project.

At the end of a scheduled meeting, the AC Chair will excuse the student for 5-10 minutes for an “in-camera” session with the AC to discuss his/her progress. At the end of the meeting, the chair will indicate any specific action to be taken by the student or AC and indicate a possible time for the next meeting. If, in the opinion of the advisory committee, progress has been unsatisfactory, the CGPS will be made aware of the situation. In cases where a pattern of unsatisfactory progress has been reported, students may be required to leave the program. The primary purpose of your advisory committee is to give you advice and constructive criticism to help you complete your program successfully. After every AC meeting, a formal Progress Report (form GPS 210) should be submitted to the GPA by the AC chair, who will file it with CGPS via Graduate Services. Students will be asked to sign a copy of the document, indicating that they are aware of its contents. Students can view their Progress Reports on PAWS.

For M. Agr. Program students, these activities fall within the responsibility of supervisor, and similar activities must be taken to complete the project research. The supervisor advises the student to hold the initial and proposal meeting held within the first 16-weeks of their program study, and the supervisor must monitor the progress towards the final research report submission.

**Please note:** Prior to each meeting with your committee, the Graduate Program Assistant will work with you to either prepare or update your “profile”. This “profile” summarizes your academic background and the progress of your degree program, including courses taken, grades obtained, publications, presentations and scholarships received. **It is the accountability of the student that you contribute and verify the details in your “profile” before the meeting.**

#### Proposal and progress reports

The research proposal must be prepared and submitted to the AC for their approval in the early stage of their thesis/final report studies. The format of these documents follows FABS proposal and progress report template (See Appendix).

## THESIS AND FINAL REPORT WRITING

### ***WRITING A GRADUATE THESIS***

When the time to start writing your thesis arrives, you should consult with the guide for the preparation of the thesis that has been prepared by the department and includes some information from the College of Graduate and Postdoctoral Studies. Only theses that follow these guidelines will be approved. Follow the Thesis requirements here: <https://cgps.usask.ca/policy-and-procedure/Academics/program-progression.php#45THESISANDDISSERTATIONREQUIREMENTS>

As of September 1, 2026, CGPS has implemented a revised policy to update thesis formatting requirements. Format guidelines and templates can be found on the [Grad Hub - Thesis Roadmap](#).

For the latest on the styles, forms, content, formatting and required elements of the thesis, follow the updated policy on CGPS's Policy and Procedure Manual:

<https://cgps.usask.ca/policy-and-procedure/Academics/program-progression.php#46STYLESFORM0.SCONTENTFORMATTINGANDREQUIREDELEMENTSOFTHETHESISDISSERTATION>

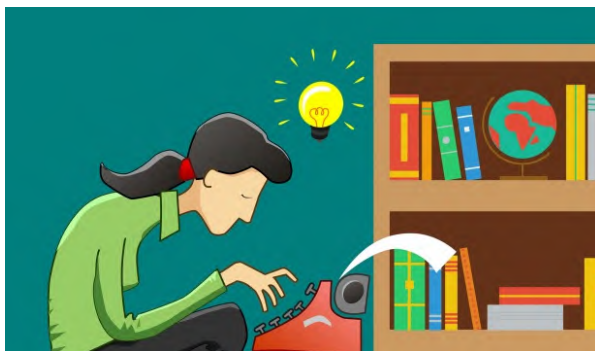
Students should also be aware of the strict requirement of copyright permission to include the figures and tables from published articles. It is not allowed just to mention that they are adapted from the source. You must write a request to the publishers and obtain permission. A statement that permission has been granted should be clearly indicated in the thesis.

**Note:** a new requirement on the use of **generative artificial intelligence (genAI)** has been added to the thesis requirement. This will be implemented on any thesis submitted on ETD website as of September 1, 2026. Check [Section 4.6.3 on the CGPS Policies and Procedures Manual](#).

All of the costs of producing a thesis or report, including typing, graphics, duplication and binding, are normally the responsibility of the student. CGPS requires only the finalized PDF version uploaded to the ETD site. All previous theses could be downloaded from the "HARVEST" website: <https://harvest.usask.ca/home>.

### ***WRITING M.AGR. RESEARCH REPORT***

When the supervisor finds that the progress of the M.Agr. project is sufficient to write the final report towards the completion of their program. The format of the report should follow a standard format consisting of literature survey, hypothesis, objective, materials and methods, results, discussion, conclusion, and reference list. The same general rules, such as copyright permission, are applied for this report. The report is submitted to the advisory committee, and the student must defend the report with a short seminar and oral defence with the advisory committee.



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## PUBLICATIONS

The final step required to bring a piece of scientific research to completion is to publish the results in a refereed journal. Research makes no contribution to the advancement of knowledge unless findings are disseminated and made available to the scientific community at large. The submission of a manuscript for peer review involves submitting your experimental approach, findings, interpretations, and writing skills to a critical evaluation, the results of which should contribute to improving your future work. A consistent record of high-quality publications will be a vital criterion in your professional career development and a major determining factor in your ability to secure research grants on a continuing basis.

You should discuss the expected schedule for publishing your own work with your research supervisor. In nearly all instances, it is desirable to take time periodically during your program to write up and submit publishable results. Successfully writing and publishing papers is an essential aspect of your graduate training, and if your work has been largely written up for publication before writing your thesis, you will find the thesis-writing much easier. In other cases, it may be appropriate to write up your work at the end of your program, *e.g.*, at the end of an M.Sc. program. **In all cases, however, you should establish a schedule which ensures that all your work is written up and submitted before you leave the department.**

Your research supervisor is in the best position to advise you on the mechanics of writing a manuscript for publication and to help you decide which journal to submit to. This decision is important because it affects the format and presentation you will use. Consult the instructions to authors which the journal will either publish or provide on request and carefully examine some of the papers which have been published in it. Copies of Robert Day's book, **How to Write and Publish a Scientific Paper**, are available in the Department and will provide some useful general guidance.

## INTELLECTUAL PROPERTY POLICY

Intellectual property (IP) means the “tangible or communicable results of literary, artistic and scientific endeavour”. For most students in the department, your research output may include IP that can be either protected under copyright, or in the case of inventions, through patents. Chapter 17 of the College of Graduate and Postdoctoral Studies Policy and Procedures Manual (on the CGPS website) outlines in great detail the intellectual property rights of graduate students as both creators and users of intellectual property.

Depending on the circumstances, the student may be the owner of the IP. More often, the IP is shared with collaborators, including the research supervisor, the financial sponsor(s) of the research programs and the University of Saskatchewan. In some circumstances, there may be restrictions on the IP generated (timing of release, for example) due to contractual agreements. Students should talk with their supervisor about their work so that they may understand any IP implications. The University Innovation Mobilization and Partnerships office (<https://vpresearch.usask.ca/imp/index.php>) is the unit responsible for negotiating stand-alone IP agreements for the research and handling technology transfer activities.

## ACADEMIC INTEGRITY

The Department adheres to University policy in all matters involving academic integrity. As a Graduate student in this Department, you are not only representing yourself, but also, the Department and the University. It is expected that you will perform all functions of your program (class participation, examinations, assignments or research) in a responsible, ethical and honest manner.

For more information, please see the University website at <https://academic-integrity.usask.ca/academic-misconduct.php>

## AWARDS

The FABS department manages several awards to recognize the fine achievements by graduate students.

### ***Molson Canada Postgraduate Achievement Award (Ph.D. and M.Sc.)***

This award is sponsored by Molson Canada. Molson and Dr. Mike Ingledew, professor emeritus and Doctor of Science recipient, had good interaction regarding Dr. Ingledew's high-gravity alcohol fermentation technology. Molson donated a fund to use for research in the department. This award is established to recognize the achievement of a graduate student who has defended the best thesis in the department in a given year. The award is given to one M.Sc. and one Ph.D. thesis defended from May to the next April. Currently the awards are associated with \$2,000 support for each awardee.

### ***CIFST Leadership Award***

The Canadian Institute of Food Science and Technology (CIFST) Leadership Award recognizes a graduate student (M.Sc. and Ph.D.) who has demonstrated leadership qualities in the field of Food Science or Applied Microbiology, through departmental service/outreach activities or within the community. One award of \$1,000 will be given out each year (across all programs). A student may win the award once during their program.

Students, faculty and staff can recommend a student for this award by submitting a letter to the GAC. Self-recommendation is welcome. The letter should outline leadership activities (and roles in each activity) and discuss how they feel their involvement has strengthened their skill sets. Activities could include (but not limited to): volunteering with professional associations/groups or at conferences; participating in department outreach activities (e.g., Ag in the City, High School tour activities, etc.), volunteering within the community or at the university, teaching activities (e.g., T.A. or guest lecturing) or peer mentoring. Normally letters are due at the of Winter term.



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### ***FABS Research Day Best Presentation Awards***

In FABS annual Research Day, the best oral and poster presentations are celebrated with this award.

### ***Past recipients of awards***

#### **Molson Canada Postgraduate Achievement Award**

| <b>Year</b> | <b>Best M.Sc. Thesis</b> | <b>Best Ph.D. Thesis</b> |
|-------------|--------------------------|--------------------------|
| 2016-2017   | Zoe Gillespie            | Chang Chang              |
| 2017-2018   | Daniela Ribeiro de Souza | Jamie Willems            |
| 2018-2019   | Deeksha Setty            | Xianming Zhao            |
| 2019-2020   | Lily Zehfus              | Xi Xie                   |
| 2020-2021   | Yan Ran Tang             | No award                 |
| 2021-2022   | Shangyi Xu               | Kunal Kumar Kadiya       |
| 2022-2023   | Antonia Powel            | Yikai Ren                |
| 2023-2024   | Ankita Srivastava        | Federica Higa            |
| 2024-2025   | Areha Abid               | Fan Cheng                |
| 2025-2026   | Karandeep Singh Sodhi    | Oluwafemi Coker          |

#### **CIFST Leadership Award**

| <b>Year</b> | <b>Recipient</b>       |
|-------------|------------------------|
| 2020-2021   | Suneru Perera          |
| 2021-2022   | Gabriela Flores-Vargas |
| 2022-2023   | Fina Nelson            |
| 2023-2024   | Emily Benson           |
| 2024-2025   | Shangyi Xu             |
| 2025-2026   | Kashika Sethi          |

**FABS Research Day Awards****Year**

2013

2016

2018

2022

2023

2024

2025

2026

**Best Oral Presentation**

Vioria Bondici

Chang Chang

Lily Zehfus

Shangyi Xu

Kaiwen Sun

Kaiwen Sun

Shangyi Xu

Yifei Zhang

**Best Poster Presentation**

Rosemary Peter

Aakash Patel

Xianming Zhao

Morgan Fleming

Emily Brent

Shahrazad Sharifimehr

Dilanganie Dissanayaka

Shangyi Xu

## RESEARCH DAY

In every spring, GAC organizes FABS Research Day as an opportunity to discuss the students' research activities. It is an open event to the public. Generally, we organize both oral and poster presentation sessions, and every student has the opportunity to present their study. One oral and one poster presentation will be recognized as the best presentation awards.

The college also organizes annual AgBio Research Day (usually in September/October). The students are encouraged to present their study at this event.



Research Day 2025

## GENERATIVE AI

Generative AI (Chat GPT, OpenAI, Copilot and so on) is a powerful tool to collect and summarize information. Meanwhile the data collected are not necessarily scientifically sound as GenAI does not judge the correctness of information. There have been a lot of fake information, even photo and videos, generated by GenAI. It may be useful to check grammar, to ask simple questions, and to collect the information. But it is always you are the last person to check. They are being developed and become increasingly involved in your life. Use them wisely. The university has a policy of AI usage. Please check it.

"Student guidelines for artificial intelligence use" online: <https://ai.usask.ca/responsible-use/student-guidelines-for-ai.php>

## **STUDENT GRIEVANCES, APPEALS AND DISCIPLINE**

Students with concerns of any kind are strongly advised to discuss them in the first instance with the supervisor, the graduate chair, their advisory committee and/or the Department Head.

The University Council and college regulations on examinations and student grievances, appeals, and discipline regulations are available on the CGPS Policy Manual. Students can also communicate with the Graduate Chair and Graduate Program administrator for guidance and submit requests to CGPS.

<https://cgps.usask.ca/policy-and-procedure/index.php>.

It is recognized that students have a right to fair and equitable procedures for the lodging and hearing of complaints arising out of university regulations, policies and actions that might affect them directly. Such procedures are described in the regulations: <http://policies.usask.ca/policies/student-affairs-and-activities/student-appeals.php>. The regulations applying to graduate student appeals with respect to academic standing or status can be found on the same website.

There are three types of student matters that are facilitated by the Office of the University Secretary: appeals in academic matters, academic misconduct, and non-academic misconduct.

## FINANCIAL ASSISTANCE

Choosing to pursue graduate studies is a commitment in study, time and finance. We realize that many of our applicants will require assistance from one or more sources. There are fortunately several options available; you will find them with brief descriptions and their deadlines below.

The College of Graduate and Postdoctoral Studies (CGPS) administers a wide range of awards, scholarships and bursaries to graduate students. Please visit the CGPS Graduate Student page for up-to-date information on various awards and their eligibility criteria and deadlines: <https://cgps.usask.ca/funding/funding-info/graduate-awards-scholarships.php>

For complete application criteria and process details, please refer to the following links:  
<http://grad.usask.ca/funding/scholarships.php>

Note: The maximum combined amount of the university administrated scholarship may be limited to 150% of standard stipend for each given financial year at the discretion of supervisor(s). The external scholarships are not counted toward this restriction.

### *External scholarships and awards:*

#### **NSERC Postgraduate Scholarships**

These prestigious scholarships are awarded in an annual national competition hosted by the Natural Sciences and Engineering Research Council of Canada (NSERC) and are primarily awarded for academic excellence. Complete details on how to apply and the required criteria are in the annual NSERC Scholarships and Fellowships Guide, which you can find at the link below: [http://www.nserc-crsng.gc.ca/Students-Etudiants/index\\_eng.asp](http://www.nserc-crsng.gc.ca/Students-Etudiants/index_eng.asp)

NSERC offers two separate scholarships for M.Sc. and Ph.D. students. Master's students: Canada Graduate Research Scholarship – Master's program (CGRS-M) and for Doctoral students: Canada Graduate Research Scholarship – Doctoral (CGRS-D). The detailed application form may require some time to complete, so please plan ahead. CGPS also offers various workshops to prepare students for these award applications.

Visit the following websites for detailed information:

CGPS website: <https://cgps.usask.ca/funding/funding-info/tri-agency-info.php>

NSERC CGRS-M website:

<https://nserc-crsng.canada.ca/en/funding-opportunity/canada-graduate-research-scholarship-masters-program>

NSERC CGRS-D website:

<https://nserc-crsng.canada.ca/en/funding-opportunity/canada-graduate-research-scholarship-doctoral-program>

If you choose to apply, applications are submitted online, which, once completed, is to be brought to the Department office by the deadline. Once the application is submitted, CGPS award committee reviews all applications and forwards them to NSERC for consideration.

Awards are announced at the end of March and are at a maximum duration of three years for PhD, and 1 year for MSc students. Scholarship payments will be made in installments. Recipients may demonstrate, instruct, etc., up to 300 hours per year and may accept other scholarships from non-federal sources.

#### **OTHER**

Occasionally the department accepts a degree student who offers to provide his/her own funding. This is frequently in the form of a fellowship or scholarship awarded and administered by an overseas government; in such cases, the student is accepted only if the College of Graduate and Postdoctoral Studies can obtain a firm undertaking from the sponsor to continue support for the duration of the student's degree program. In these circumstances, the department accepts no responsibility for providing funds to the student or any attempt to obtain funds should the scholarship be terminated.

### *Internal scholarships and awards administered by CGPS:*

#### *Indigenous Graduate Leadership Award*

The [Indigenous Graduate Leadership Awards](#) are open to First Nations (status or non-status), Métis, or Inuit person of Canada in either a Master's (research or course-based) or PhD program. Applicants must have a minimum GPA of 75% and demonstrate research productivity as well as leadership through active community engagement and/or involvement.

- Master's: \$20,000 per year for two years
- Doctoral: \$24,000 per year for four years

#### *Indigenous Graduate Recruitment Scholarship*

The [Indigenous Graduate Recruitment Scholarship](#) is to assist Indigenous students financially from the outset of their programs and support the recruitment of First Nations (status or non-status), Metis, or Inuit person of Canada in either a Master's or PhD program. In order to be eligible, students must be entering a new program of study in September of the application year. Priority will first be given to students pursuing a PhD, followed by Master's research-based programs, and then Master's course-based. This is not an application to be completed by the student. Rather, nominations come from the Department Heads and Graduate Chairs.

- Award: \$10,000

#### ***Other CGPS Awards***

CGPS administers many other scholarships and awards available to graduate students. For a complete list and their eligibility criteria and deadlines, please visit CGPS Awards Hub: <https://usask.academicworks.ca/>

#### ***Internal scholarships administered by the Department of Food and Bioproduct Sciences:***

##### *CGPS 75th Anniversary Recruitment Scholarship*

This scholarship, created to celebrate the College of Graduate and Postdoctoral Studies' 75th anniversary, is open to high-performing graduate students (80% or higher USask grade system equivalent). Students do not have to apply directly for this scholarship, but are eligible to be considered upon applying to a USask graduate program. This scholarship is administered by the FABS department. Both MSc and PhD students applying to APMC and FDSC programs are eligible to receive this scholarship. The FABS Grad Chair and the Graduate Affairs Committee (GAC) adjudicates it in consultation with the department head in accordance with the faculty members, following the FABS Graduate Student Funding Policy. Students receiving the 75<sup>th</sup> Anniversary Recruitment Scholarship will be expected to apply for appropriate Tri-Council scholarships on the years in which they are eligible.

- Value: \$25,000 (may be offered for multiple years), can be split into two \$12,500 per year allocations to allow the recruitment of two high-quality students

#### *Department Student Support Fund Scholarships (SSF)*

The Student Support Fund Scholarship funding is administered by the Department GAC for all eligible, active graduate students. Recipients of FABS SSF will be required to apply for the Tri-Council Scholarship competition if eligible. The department and/or college will provide assistance in the preparation of these applications..

In order to be eligible, the student must:

1. be registered as a full-time student and meet all requirements for such status,
2. have a minimum overall average of 80% on all courses taken during the last two years of academic work,
3. be in good standing with respect to admission, registration, tuition, and fees at the University of Saskatchewan,
4. be able to show significant progress on his/her graduate education and training,
5. have a research proposal submitted and approved by the students' Advisory Committee.
6. show strong leadership skills within the Department and
7. have completed time in the program within the expected program completion period.

As of September 2026, students may only receive a maximum of \$25,000 (M.Sc.), 42,750 (Ph.D.) or \$55,250 (Ph.D. transfer) from Student Support Fund Scholarship funds over the duration of their graduate program.

To apply, the student is expected to prepare a case file outlining accomplishment. This includes a cover letter, a one-page statement of research plan, any abstracts from previous graduate degrees (if available), and a CV indicating any previous scholarships, research experience, and leadership roles.

Third-year Ph.D. candidates (or fourth-year Ph.D. transfer students) must provide evidence of scholarly work leading to the submission of a peer-evaluated journal publication and/or professional presentation or contributions to intellectual property, such as work towards a patent application and invention disclosure.

It is recommended that students consult with their supervisors when preparing their case file.

Once all applications are received (deadline is typically communicated in March each year), the GAC will forward recommendations for Department Student Support Fund Scholarships to the Department Head. Funds are then awarded for up to one year and are made in equal monthly installments in order to support as many qualified students as possible. Most awards will be for partial support.

Renewal of FABS SSF Awards is not automatic; each scholarship award is for a maximum duration of 12 months, unless specified by the department for a shorter period. To be eligible for renewal, students must have had at least one AC meeting within the preceding 12-month period.

### ***Internal scholarships administered by the College of Agriculture and Bioresources:***

A number of scholarships awarded for superior performance are allocated annually by the College of Agriculture and Bioresources. These do not have a departmental service requirement.

The types of award include “major recognition awards”, which require a minimum overall average of 80% on all courses taken during the last two years of academic work, and “scholarship awards”, which require high academic standing. Research aptitude, achievements, financial need and time in program are also taken into account. The value of these awards is variable.

Details of College of AgBio Scholarship are available here: <https://agbio.usask.ca/students/graduate/graduate-scholarships.php>. Completed applications are to be submitted online (as instructed in the above link) by the deadline date (usually by the end of May). Recommendations for College awards will be forwarded to the Dean or designate by the College GAC on behalf of the students.

Large College awards are disbursed in monthly installments. Smaller awards (under \$5000) may be issued in a lump sum. Normally, these scholarships are not renewable and a student may hold only one “major recognition award” during the postgraduate program. If a recipient holds another award, the College of Agriculture and Bioresources scholarship is adjusted in value so that the total award income does not exceed the University Graduate Scholarship level in the case of “scholarship awards” and the NSERC assistantship level in the case of “major recognition awards”. Recipients may provide services to the department for which additional payment may be made.

### ***Sprott Indigenous Graduate Scholar Award***

Incoming and prospective Indigenous students in the College of Agriculture and Bioresources are eligible for this award. For details visit: <https://agbio.usask.ca/students/graduate/graduate-scholarships.php#Specialcallawards>.

To apply, submit a completed application to Associate Dean (Research and Graduate Studies) Trever Crowe ([trever.crowe@usask.ca](mailto:trever.crowe@usask.ca)) or Danielle Baron, Manager, Research, Graduate Studies and External Engagement ([danielle.baron@usask.ca](mailto:danielle.baron@usask.ca)). Applications will be considered on an ongoing basis until a quota of 2 per year is filled.

- Value: \$25,000 for 12 months for MSc; \$30,000 for 12 months for PhD
- Renewable (up to 3 years total for MSc; up to 5 years total for PhD)



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## VACATIONS AND LEAVE OF ABSENCE

Students are entitled to a maximum of three weeks (*i.e.*, 15 working days) of paid vacation each calendar year in addition to weekends, statutory holidays and regularly-scheduled university breaks (*i.e.*, when the University is officially closed). It is the student's responsibility to obtain approval from his/her supervisor(s) BEFORE planning and taking a vacation.

Students may be granted a leave of absence from their study for the following reasons: compassionate, medical, parenting, adopting, educational, and involvement in 'Co-op Program'/Industry opportunities. Other circumstances will not be considered, and the student may need to withdraw from the program if they will be absent for an extended time period. If the student intends to be absent, the leave must be granted by the Department and/or the CGPS. Otherwise, they will be assessed tuition, and the absence will count towards their time in the program.

Please see Appendix A Guidelines for details.



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## GRADUATE STUDENTS' ASSOCIATION (GSA)

All registered graduate students are members of the Graduate Students' Association which represents the interests of graduate students within the university, as well as provincial and national levels. The GSA is governed by a General Council consisting of an elected Executive and graduate student representatives from departments. General meetings, which all graduate students may attend, are held twice a year. The GSA's office is located at Emmanuel & St. Chad, 1337 College Drive (8471, fax 8598, email; [gsa.common@usask.ca](mailto:gsa.common@usask.ca)).

The GSA focuses on matters that directly affect graduate student education and experience, including academic affairs, funding, and the promotion of social and academic interests among graduate students. In addition, the GSA offers support and advice to graduate students who have questions/concerns regarding their rights and responsibilities and those of their professors, supervisors, the academic units and the CGPS. Students are encouraged to contact their representatives or members of the GSA Executive with questions, suggestions, or concerns, including those related to hearings and appeals.

The GSA also administers health and dental insurance plans for all full-time graduate students. Students who already have comparable extended health and/or dental coverage may be eligible to opt out of these plans and will be reimbursed. Opting out can be done either online or by visiting the health and dental plan office within the first two weeks of September.

For more information about the GSA and the services and benefits they provide, visit the GSA website at <http://gsa.usask.ca/>.

## FOOD & BIOPRODUCT SCIENCES GRADUATE STUDENTS' ASSOCIATION (FABS GSA)

Graduate students in FABS are represented at the departmental level through the FABS GSA. Established in 2025, FABS GSA is a student-led association dedicated to representing, connecting, and supporting graduate students within the department.

FABS GSA provides a platform for graduate student voices and interests while fostering academic, professional, and social engagement within the FABS community. Throughout the academic year, the association organizes professional development and networking opportunities, alumni and industry engagement, social gatherings, and community-building activities. It also supports connections among students, faculty, staff, alumni, and industry professionals, with the broader aim of enriching the graduate student journey both within and beyond the department.

Founding executive team (2025-26): FABS GSA was established by Kashika Sethi (Founding President), Dila Dissanayaka (VP Program Operations), CJ Manning (VP Communications & Engagement), and Ethan Done (VP Finance).

Graduate students are encouraged to participate in FABS GSA activities, share their ideas and suggestions, and take advantage of opportunities to become involved in the association and the broader FABS community. These activities include an annual orientation held each September to introduce new graduate students to departmental labs, offices and other important locations across campus. The highlights below display a glimpse into some of the events and initiatives organized by FABS GSA.

### *FABS GSA Event Highlights from 2025-2026*



Industry visit



FABS Alumni Series – connecting graduate students with FABS alumni



Annual Innovation Night – in collaboration with FABS Club, undergraduate and graduate students were mentored by industry partners



Guest Seminar Series – connecting graduate students with researchers and professionals beyond the department



Grad Socials, International Christmas Potluck, and Annual BBQ – bringing graduate students, faculty, and staff together to foster a welcoming and engaged FABS community



FABS Research Day



Graduate Fair

### Connect with FABS GSA

Do you have questions, ideas, or want to stay connected and involved? We'd love to hear from you! Reach out to the us by email or connect with us through our social media platforms for the latest updates, events, opportunities, and announcements.

Email: [fabsgsa.usask@gmail.com](mailto:fabsgsa.usask@gmail.com)

Social media accounts:

Instagram: [@usask\\_fabsgsa](https://www.instagram.com/usask_fabsgsa)

LinkedIn: USask FABS Graduate Students' Association (<https://www.linkedin.com/company/usask-fabs-gsa>)

## SCIENTIFIC SOCIETIES

Graduate students are encouraged to join a scientific society as student members during their training in order to develop professional associations in their respective disciplines, and to establish contact with prospective employers or researchers with similar interests. Many graduate students in the department join either the Canadian Society of Microbiologists, the American Society for Microbiology, the American Oil Chemists Society (Canadian Section) or the Canadian Institute of Food Science and Technology. Other societies may be more appropriate for particular students. Your supervisor will be the best guide for such memberships.

## CONTACT INFORMATION:

Please read the FABS Graduate Student handbook carefully. For additional information not covered or if you have any questions related to your graduate program, please contact:

Department Graduate Programs Shahrima Tahsin  
Administrator (GPA)

[shahrima.tahsin@usask.ca](mailto:shahrima.tahsin@usask.ca)  
[fabs.gradstudies@usask.ca](mailto:fabs.gradstudies@usask.ca)

Graduate Chair Dr. Takuji Tanaka

[takuji.tanaka@usask.ca](mailto:takuji.tanaka@usask.ca)

*Revised on September 30, 2026*

## Q&A:

### **I don't have health coverage in this province...what do I do?**

You will need to complete an application form which you can find at the following link:

<https://www.ehealthsask.ca/residents/health-cards>.

We encourage you to send this off as soon as possible as delivery of your health card number could take up to 4 weeks. If your enrolment is in the international student status, your application will need to accompany proof of full-time enrolment as well as a valid Study Permit issued by Immigration, Refugee and Citizenship Canada (IRCC). Additionally, you can contact your Graduate Students Association and find out about purchasing additional health/dental coverage.

### **How do I get a student card?**

You can get a student card any time within operating hours at the main bookstore in Marquis Hall. The cards are free and you will need to provide some ID when you go there (either a passport or permit will suffice). You also have to be registered to get a student card.

For more information you can go to the website: <https://bookstore.usask.ca/campus-id.php#StudentCards>

### **What if my personal information (address, surname, etc.) changes during my program?**

Changes can be made on PAWS. You should make the changes as soon as possible to avoid missing payments or important mailings.

### **How do I get a Social Insurance Number?**

You can apply for a Social Insurance Number (SIN) online (<https://www.canada.ca/en/employment-social-development/services/sin/apply.html>) or in person. If you go in person, you will need to bring your study permit and letter of offer with you. Service Canada is located in Market Mall (2325 Preston Avenue). To get here from the Agriculture building, you can take a city bus if you do not have a vehicle. City routes and schedules can be found at: <https://transit.saskatoon.ca/>

You will need to obtain a Social Insurance Number (SIN) as soon as possible. It is required for your stipend payment.

There is no cost for the SIN but please allow for some time to receive services as it is a queue system. You will need to have your valid study permit and visa with you for authentication.

### **I am not able to register for courses online, what could be the problem?**

You can come to the Graduate Programs office and one of the Graduate Program Assistants can look at your student status and see if there are any applicable holds or restrictions. Any waiver or further information required can usually be settled at that time and typically, you are able to register shortly after.

### **Do I need a bank account in a Canadian bank?**

Your stipend payment is made through direct deposit to your bank account. Initially you can receive the payment in the form of cheque, but you need a bank account to make it into cash. So that you need a bank account sooner or later. There are five major banks in Canada: Royal Bank, Bank of Montreal, Scotiabank, CIBC, and TD Canada. Regional banks, such as Affinity Credit Union and Connexus Credit Union, are also in the city. You can find all of them along 8<sup>th</sup> Street and downtown.

### **Where can I pay my tuition?**

This can be done either online through PAWS using Interac banking or your Mastercard or VISA or in person at the Admin Building at Student Finance & Awards (<https://students.usask.ca/money/tuition-fees/pay.php>).

## APPENDIX A. COLLEGE OF GRADUATE AND POSTDOCTORAL STUDIES GRADUATING STUDENT CHECKLIST

This page is taken from the CGPS website: <https://cgps.usask.ca/documents/graduating-student-checklist-july-2024.pdf>

### *Information Concerning the Completion of Program Requirements, Eligibility to Graduate, and Attending Convocation Ceremonies*

#### *Information for all students*

1. The online application to graduate will be found under the “Academic Profile” channel in your PAWS account. Convocation details are available on the USASK Convocation page.

Link: <https://students.usask.ca/academics/graduation.php>

2. Deadlines to apply are: **March 31** for Spring Convocation and **August 31** for Fall Convocation. Check this website for details on Graduation and Convocation Ceremony: <https://students.usask.ca/academics/graduation.php#PrepareforyourConvocationceremony>
3. Applications to graduate after the deadlines may not be accepted. If you expect to complete all requirements in time for convocation but have not done so by the deadlines stated above, ensure that you apply to graduate. Deadlines for eligibility may be referenced in the Academic [Calendar](#) and are described as “Last day for Master's and Ph.D. students to submit approved thesis to ETD site.” Contact GPA for details if it is required.
4. Submitting an application to graduate is necessary to receive a degree parchment. The application steps **must** be completed even if you do not attend the ceremony.
  - You must submit an application to graduate to the specific convocation ceremony at which you receive your degree. Ceremonies occur in June and November.
  - Applications to graduate will have a status of ‘Pending’ until the degree is awarded. Information about your eligibility to graduate may be sought from your department’s graduate program administrator.
  - Information about receiving a degree parchment can be found here: <https://students.usask.ca/academics/graduation.php#Parchmentreplacementsandduplicatecopies>

Letters of completion/ To Whom It May Concern letters are not automatically generated and issued upon completion of requirements. In order to receive a letter of completion, you must submit a request through TeamDynamix ticket. This letter will only be issued following confirmation of satisfaction of all required degree components. <https://teamdynamix.usask.ca/TDClient/33/Portal/KB/Article/3439/TeamDynamix-Submit-and-Track-Your-Ticket-Requestshttps://jira.usask.ca/servicedesk/customer/portal/7/create/208> **Please note that:**

- For students completing thesis/ dissertation-based programs, these letters may only be issued following approval of your ETD and receipt of all required signed defence forms from your academic unit
- For students completing project and course-based programs, these letters may only be issued once your academic provides a recommendation to award the degree, and CGPS is able to confirm that you are eligible to graduate
- These requests are handled in the order received and will be balanced against competing priorities. Please allow ample time for processing of your request.
- Degree parchments are issued by the Registrar’s office and not the College of Graduate and Postdoctoral Studies. Questions concerning Convocation and degree parchments should be directed to [convocation@usask.ca](mailto:convocation@usask.ca).

- Information relating to ordering USask transcripts can be found here: <https://students.usask.ca/academics/grades.php#Transcripts>. Your USask transcript must be ordered through PAWS. Questions specific to transcripts can be directed to [mycreds@usask.ca](mailto:mycreds@usask.ca).
- Deadlines to meet eligibility for Fall and Spring Convocation may be referenced on the Academic Calendar: <https://students.usask.ca/academic-calendar/>.

***Course-based and Project-based students:*** Check with your department's graduate program administrator to ensure that you have completed all requirements for graduation.

### **Information for Thesis/Dissertation students:**

1. Students in thesis and dissertation-based programs must be registered in the term during which their defence takes place and must maintain this registration until all degree requirements are complete. The dates noted on defence documents signed by your academic unit may be a factor in determining the end date of your program and whether registration in a term will be required.
2. Once you have successfully defended your thesis/dissertation, there are several forms that your supervisor, committee members, and Graduate Chair must complete, sign, and submit to the CGPS. Please communicate with your supervisor or graduate program administrator to ensure that these forms have been submitted.
3. Supervisors or departments may require bound copies of your thesis/dissertation. Please check with your home department for clarification about whether this may be required.
4. **If degree requirements have been met prior to the term's add/ drop deadline, please drop registration before the add/ drop deadline.** For students in thesis/dissertation programs, completion of degree requirements customarily is understood to mean the date of ETD upload. Please ensure you keep informed of term add/ drop deadlines. You may check with your academic unit to ensure all elements relating to degree completion have been completed.

**Withdrawing registration after the add/ drop deadline will result in the assessment of tuition and student fees for the term.**

5. **Do not withdraw from the current term if program completion requirements are met after the add/drop deadline. You will be required to submit late enrolment requests to re-establish registration.**

For graduate students, the Spring and Summer terms are treated as a single term. The add/drop deadline for the Spring/Summer term generally aligns with the Spring term deadline for undergraduate programs. Please check the USask academic calendar to verify these dates.

**Do not drop registration for the Summer half of the term if completion of degree requirements extends beyond the Spring term add/ drop deadline. You will be required to submit late enrolment requests to re-establish registration.**

6. If you are eligible to receive pro-rated tuition rebate, a Graduate Programs Advisor will initiate this process on your behalf *only* once confirmation that all degree requirements have been satisfied, and the final ETD (electronic thesis/ dissertation) corrections have been approved by CGPS. Once a refund is processed, it may be credited to your student account. In order to receive all money refunded, please fill out the 'Request for Refund Form' found here: <https://students.usask.ca/money/tuition-fees/refunds.php>

**Please note that the tuition rebate policy applies only to students in thesis-based programs.**

#### **Notes on Thesis Formatting for Thesis/Dissertation Students**

1. All Master's thesis and PhD students are required to submit their theses/dissertations to the Electronic Thesis and Dissertation (ETD) site.
2. Final revised and approved version of the thesis or dissertation must be uploaded to the ETD Site at <https://etd.usask.ca/>.
3. Thesis and Dissertation titles should be entered in title case (most words capitalized), NOT in all capital letters.
4. **Before uploading your thesis to the ETD site, please ensure that the thesis/dissertation will meet CGPS thesis formatting requirements.** Information regarding the ETD formatting and style may be found here:  
<https://cgps.usask.ca/onboarding/roadmaps/thesis-roadmap.php>
5. **Students are also required to upload a completed and signed version of [GPS 404 – Final Thesis Confirmation Form](#) along with their thesis on the ETD site.**

#### **Please note that:**

- The Learning Commons in the Main Library has resources to assist you with converting to PDF
  - The ETD site can be accessed from anywhere in the world, and will accommodate large file sizes
  - **The date of ETD upload will be considered as the date of completion of program requirements, provided documentation attesting to completion of your program, issued by the department, is not dated any later**
  - The 'Submission of Electronic Thesis' item in your DegreeWorks record will be updated upon approval of the ETD
6. A Graduate Programs Advisor will review the formatting of your thesis and may then advise you about any required changes. Students in project-based programs may submit their projects to the ETD site but are not required to do so by CGPS for completion of degree requirements. If you submit your project to the ETD site, you must follow the formatting rules for theses.
  7. **A first review of your ETD submission may take up to 7 - 10 working days.** Please note that this may take longer during peak periods. Please bear this in mind when completing your program and for any deadlines which may require proof of your degree completion. **Your eligibility for tuition rebate will not be affected by the length of time between ETD upload and approval.**
  8. Supervisors and academic units have the option to delay publication of a thesis/dissertation for copyright or other reasons. Students will have options to assign an embargo period during the ETD upload process. Any request to modify these restrictions must be submitted before the allowed access time has expired. If further information is required, please submit a question to:  
<https://teamdynamix.usask.ca/TDClient/33/Portal/Requests/ServiceCatalog?CategoryID=42>

#### **General notes for all students:**

1. Please verify with the graduate administrator in your academic unit that documents are complete for graduation. You may also verify this information on your DegreeWorks record. Owing to the volume of documents and competing

priorities, please allow a reasonable length of time for processing. Information on your DegreeWorks record updates overnight and may not appear immediately

2. Your home department will be responsible for submitting and approving final grades for 996, 994 (Research), 992 (Project), 995 (Exhibition), and 990 (Seminar) registrations.
3. If you are a current recipient of a graduate scholarship from CGPS, you must notify the CGPS Director of Awards & Scholarships when you will complete your degree. Notification should be sent to: [gradstudies.awards@usask.ca](mailto:gradstudies.awards@usask.ca).

**Note: Students are financially responsible for reimbursing the University for any payment(s) given in error.**

### **About the Convocation Ceremony**

1. Information about Convocation ceremonies is available here: <https://students.usask.ca/academics/graduation.php>. This site will have information about tickets, ceremonies, where to meet, photos, etc. It is adjusted for the next series of ceremonies approximately one month after the conclusion of the current cycle.
2. Announcements regarding graduation will be made available through your PAWS email account.
3. To be able to order tickets online for the ceremony, you **must** have a current mailing address on your PAWS account. To add or verify your mailing address, go to [paws.usask.ca](https://paws.usask.ca), click on Address, click on “My Mailing Address”, and ensure that the most current address is listed and at the top. The address at the top is where your degree parchment will be mailed if you do not attend the graduation ceremony. It is the student’s responsibility to ensure this information is accurate and complete. This address change should be done at the time of submitting your application to graduate online.
4. **Purses, handbags, etc. should not be brought into the backstage area. There are no facilities available to store valuable articles.** Please leave any items with a family member or elsewhere.
5. Information about the ceremony itself will be provided by the Convocation staff in Teaching, Learning and Student Experience. Notification about the ceremony will be made available approximately two weeks after the deadline to apply to graduate. This information will include: how to order tickets, how to order your gown for the ceremony, and other important considerations.
6. Questions concerning Convocation should be directed to [convocation@usask.ca](mailto:convocation@usask.ca)
7. Questions to CGPS can be directed to:  
<https://teamdynamix.usask.ca/TDClient/33/Portal/Requests/ServiceCatalog?CategoryID=42>

**Information about a student cannot be released to a third party without the student’s authorization**

## APPENDIX B. GUIDELINES

### *Guidelines for Vacation of Graduate Students in the Department of Food and Bioproduct Sciences*

Students are entitled to a maximum of three weeks (*i.e.*, 15 working days) of paid vacation each calendar year in addition to weekends, statutory holidays and regularly-scheduled university breaks (*i.e.*, when the University is officially closed). It is the student's responsibility to obtain approval from his/her supervisor(s) BEFORE planning and taking a vacation.

1. The student must consult with and receive written (*e.g.* email) approval from his/her supervisor(s) before taking a vacation. The student must plan their vacation so that it does not conflict with research, coursework, and other degree requirements.
2. After the vacation time has been approved by his/her supervisor(s), the student must submit the start date and duration of the vacation to the Graduate Programs Assistant.
3. Unexpected absences, such as family issues and other emergencies, may be considered as a leave of absence. The student must consult with his/her supervisor(s) in these situations.

### ***Guidelines for leave of absence application and processing for graduate students in the Department of Food and Bioproduct Sciences***

As stated in CGSR policy, students may be granted a leave of absence from their study for the following reasons: compassionate, medical, parenting, adopting, educational, and involvement in 'Co-op Program'/Industry opportunities. Other circumstances will not be considered, and the student may need to withdraw from the program if they will be absent for an extended time period. If the student intends to be absent, the leave must be granted by the Department and/or the CGSR. The leave period is not included in the time period for completion of the degree, and tuition is not assessed during the leave. Nominal student fees are assessed during the leave period. Otherwise, he/she will be assessed tuition, and the absence will count towards their time in program.

#### **Student actions**

1. The student must discuss with his/her supervisor(s) the reasons for the requested leave of absence.
2. The student must make a written request for the leave of absence indicating the type of leave being requested, explaining the circumstances necessitating the leave and, if it is a medical leave, provide a medical note or other medical documentation. The request should be submitted to his/her supervisor and the department Graduate Chair.
3. At the end of a medical leave, the student must submit a medical note stating that the condition necessitating the leave no longer affects the student's ability to continue in his/her program.

#### **Supervisor(s) actions**

1. Supervisor(s) discusses the student's request with the student. Prior to his/her decision, the supervisor may choose to consult with the advisory committee to discuss the appropriateness of the leave, such as the case for an extended leave and a second leave application.
2. Supervisor advises the student whether or not he/she agrees with the leave request.
3. Supervisor(s) provides appropriate information to the department Graduate Chair about their discussion, indicating whether or not he/she agrees to the leave.

#### **Graduate Chair actions**

1. Graduate Chair reviews the request from the student and supervisor(s) and confirms the reasons for the leave are in accordance with CGSR Policy.
2. Graduate Chair discusses the necessity of the leave with the student, if required.
3. If it is the first request for a leave of absence AND the leave of absence is less than four months, the Graduate Chair can approve it.
4. If the intended leave is shorter than one month and the conditions are appropriate, Graduate Chair can approve the leave.
5. If there has been more than one request, or the requested leave is for more than four months, the CGSR must approve the request.
6. The Graduate Chair forwards the written request for all leaves to the CGSR for processing and/or approval. (note: requests can be sent via email)

If the request is denied by the department, the students can register an appeal of the decision with the Dean of the CGSR.

#### ***The duration and maximum length of leave of absence***

Leaves of absence for compassionate, medical, educational, or 'Co-op Program'/Industry reasons are accommodated with a reasonable manner.

If the student needs a longer leave of absence, he/she must ask for an extension before the approved leave period is expired. The student must supply information to supporting the extension, and the extension must be approved by the CGSR

Medical and/or compassionate leaves shall not exceed 12 months consecutively, or 24 months collectively. Students can take leave multiple times during their program; however, the absence should not exceed 24 months in total. When it exceeds 24 months, they need to withdraw from the program and re-enter after their intended leave is over.

A graduate student who is bearing a child, and/or who has primary responsibility for the care of a child immediately following a birth or an adoption is eligible for parental leave. A parental leave may be granted for up to 16 months and a maternity leave may be granted for up to 4 months. Maternity leave and parental leave can be taken consecutively when applicable.

A four-month leave for a co-op program in industrial settings will be granted to spend a period of time in industry or the public sector pursuing research-related activities which are closely linked to their Master's or Ph.D. Program of Studies. Such a leave may be repeated once at a later time in the program, *i.e.*, total up to 8 months are allowed.

*The leave for the reasons not specified in the CGSR policy*

If the leave of absence is for reasons not specified in the CGSR policy, the leave will not be granted. In this case, the student should consult with the supervisor(s) and Graduate Chair. The student has the option of withdrawing from the program instead of taking a leave, and may be re-admitted. Course work, research, and other required elements that the student completed before the withdrawal may be counted towards degree requirements after re-admission.

*Created on June 28, 2016*

*Revised on August 9, 2019*

### ***Guideline for the administration of MSc to PhD transfer***

After 12 months in the graduate programs, M.Sc. students can apply for the transfer to a Ph.D. program in FABS department. The student who wishes to be transferred must discuss the possibilities with their supervisor(s). The requirements to be considered for the transfer are:

1. The transfer aligns with the student's motivations and personal and career objectives.
2. The student has completed at least 9 credit units at the 800-level and has achieved a minimum average of 80% and no grade below 70%. Exceptions are subject to the approval of the dean, CGPS, or designate.
3. There is evidence the student has the requisite writing and oral communication abilities, research skills, and disciplinary knowledge, to be able to satisfy the requirement of a doctoral candidacy assessment and successfully complete a Ph.D. dissertation.

If the supervisors agree the transfer of student, they should initiate the process by calling a meeting of Advisory Committee (AC). The students and supervisors should supply the evidence of the student qualification, and AC shall discuss the above criteria. AC must unanimously agree to transfer the student. Then AC shall administrate the Ph.D. qualifying examination as defined in the FABS Guideline for Administration of Qualification Examination. The student must pass this examination within 24 months from their initiation of graduate study, *i.e.*, from the first registration as the student in CGPS. The examination will be administrated only once for a student, and they automatically remain in the M.Sc. program if they will fail the examination.

If the student has a M.Sc. degree from other programs/universities, they must follow the above process. The qualifying examination is exempted by the discretion of AC if their M.Sc. degree is in the related fields.

The Graduate Chair will communicate the outcome of the assessment(s) to all concerned parties.

*Adopted on May 13, 2024*

## ***Guidelines for the Administration of the Ph.D. Qualifying Examination***

The qualifying examination is a requirement of Department of Food and Bioproduct Sciences for graduate students who are transferring from an M.Sc. program to a Ph.D. program without thesis defense, who directly enter into the Ph.D. program from a B.Sc. program, or whose acceptance specifies the examination as a requirement for full admission into the Ph.D. program. The objective of the qualifying examination is to evaluate the depth and breadth of knowledge of the student in areas that pertain to their discipline (*i.e.*, Food Science or Applied Microbiology). Fundamentally, **the exam's purpose is to determine whether the student has sufficient basic knowledge in a chosen scientific discipline to enter into a Ph.D.-level program.** Thus, the examination must be at least as rigorous as the defence for a master's thesis. While primarily an assessment tool, the qualifying exam also provides an educational opportunity to improve their knowledge of their discipline as well as to give them experience in an oral examination which would benefit future performances such as the defence.

The examination shall be conducted by the student's (potential) advisory committee for her/his Ph.D. program (minimum five examiners: supervisor, two regular members, one cognate member, and advisory committee chair). The content of the examination shall fairly and reasonably reflect materials which the student would be expected to know and understand in view of the prevalent and current norms of the discipline and the student's chosen area of research. (For direct entry Ph.D. students: The examination may limit the areas to their research fields of past and planned. Since the students are administrated by their 'exceptional' potentials judged from their records, the examiner should consult with their record of administration and choose the topics and question to test their background preparation is up to the level of an M.Sc. holder.)

For transferring students: This examination for the purposes of transfer can only be taken once.

For probational and direct entry Ph.D. students: A student failing the first Qualifying Examination is permitted a second written examination with permission of the Dean of the CGSR. A second failure would automatically disqualify the student from further work for that particular Ph.D. degree. This failure may be appealed to the Department Head on substantive or procedural grounds. Students are also given an opportunity to revert to the Master's degree program in their field.

### ***1. Administration of the Ph.D. Oral Qualifying Examination***

Time Limit: 2 hours

#### **Examination Questions:**

Each member of the examining committee, which may include the Graduate Chair, will have two rounds of questions. Should the Graduate Chair choose to participate as a member of the examining committee, this should be communicated to the student in advance. In the first round, each examiner will have 10-15 minutes for questioning. The scope of questions asked will depend on the examiner's designated area and relevance of the student research.

In advance of the examination, each examiner should prepare a list of questions for their own use at the exam. Each examiner's scope of questioning may be shared in advance with the student, but not the specific questions. The questions raised by the examiner should address the root disciplinary base(s) pertinent to the student's degree program (theories, historic developments, current issues, concepts, methodology, tools, *etc.*) or directly relate to aspects of the area and discipline(s) of her/his research. The candidate, by correctly answering the question, will have to demonstrate his/her good knowledge with respect to the subject area. A certain amount of in-depth probing may be appropriate. Such probing may be continued during the second round of questions.

Questioning in the second round will generally be shorter than the first round. The questions may be related to those already raised, but a greater depth of understanding is required. Alternatively, new questions from the examiner's list may be asked. The intent is to ensure that the questions enable the examiner to accurately assess the student's comprehension and understanding of the subject matter, his/her ability to synthesize information and his/her convergent thinking and problem-solving skills. Therefore, the committee members should be thoughtful in the design of their questions. The tendency to raise questions in an *ad hoc* manner is discouraged.

#### **Process:**

Once a question has been asked, the student must be given time to gather his/her thoughts and to answer the question. Redirecting or rephrasing the question is encouraged and the Chair may clarify the question if necessary. The student is encouraged to utilize the white/chalk board or a piece of paper to organize his/her thoughts, or to help explain a concept or

theory. If the student is successful in handling a few questions in the first round, the examiner may stop and wait for the second round. Using up the allotted time (per round) with daunting questions to challenge the student is discouraged.

If the student's answer to a question is not satisfactory, it is critical that the examiner should articulate why. Often, partially correct (or even incorrect) answers may be interpreted differently by the examiner (the answer was wrong) and the student (I was not told I had the wrong answer, and I felt I did okay). The down-side of this transaction is the student's psychological reaction. At the end of the examination, areas of strengths and weaknesses may be communicated to the student by the Chair or delegated to the supervisor for a follow-up discussion with the student.

#### Assessment of the Outcome:

An *in-camera* session will be held immediately following the examination. The outcome of the performance is considered to be satisfactory if that the student is deemed to have passed the examination (attaining at a grade of at least 70%). If doubts exist, the committee should articulate any discrepancies in the quality of the performance. If, on the other hand, the consensus or majority assessment is that the student has failed, the committee must recommend a follow-up written qualifying examination.

If the outcome of the subsequent written examination is also unsatisfactory, the committee will request permission from the Department Head that a second written qualifying examination be administered. Failure in the second written examination automatically disqualifies the student from further work for a Ph.D. degree.

The AC Chair will communicate the outcome of the examination(s) to all concerned parties.

#### Timelines:

The qualifying examination should be completed within 12 months after their initiation of the Ph.D. program unless otherwise specified in the letter of offer.

The student should receive guidance and coaching through his/her supervisor(s), committee members, the AC Chair, the Graduate Chair or the Department Head. The examining committee should be consistent in the declaration of the purpose of the examination and its importance. The student should know the exact date in advance (a minimum of 4 weeks' notice). Some designated scope for this exam is required; however, a lengthy absence (months) from research to study for the examination should be discouraged.

Once the AC committee has approved the timing of the qualifying exam, the AC Chair will undertake the formalities of setting the examination process in motion.

## *2. Administration of the Written Qualifying Examination (where necessary)*

The format and implementation of the written qualifying exam will be determined by the Advisory Committee (AC) of the student. The Graduate Chair will coordinate the written examination. General outlines for this examination are given below; however, these may be altered at the discretion of the AC.

The examination will consist of one or two questions per AC member. If the AC consists of more than five members, then the number of questions should be reduced to one per AC member. Questions must be prepared in advance by AC committee members and will be submitted to the Graduate Chair one week prior to the examination. The Graduate Chair will review all questions to determine appropriateness and consistency and may consult with the supervisor or other AC members, if necessary. If the Graduate Chair determines that a question is not suitable, they will contact the AC member and a new question will be developed and then will be subjected to the same approval process.

Questions should be selected to provide a balanced coverage of the following areas:

- (A) integration of the student's knowledge derived from coursework taken;
- (B) skills related to development of a research project (*e.g.*, design of a series of experiments based on a particular problem) or explanation of a theory or concept;
- (C) understanding of the general and cognate disciplines of the program of studies (*e.g.*, Food Science or Applied Microbiology).

The student will be provided with an appropriate place to write the exam and will be given up to six hours to complete the exam. Examinations will be closed book. Students will be expected to produce quality answers that follow a logical progression and are supported by sound scientific evidence. Spelling, grammar and appropriate sentence/paragraph structure will be taken into account when answers are graded.

AC members will be responsible for marking their question(s) in a timely manner (five working days) and must provide to the Graduate Chair both a percentage grade and a brief overview of the strengths and weaknesses of the answer(s) provided by the student.

To obtain a pass in the written examination, the student must not receive a failing grade ( $<70\%$ ) from more than one AC member. A student may appeal a failure to the Department Head, who may set an additional examination.

*Approved by FABS, April 4th, 2016;  
Modified on May 13, 2024*

## ***Guidelines for the Administration of the Ph.D. Candidacy Assessment***

The candidacy assessment is a requirement of the College of Graduate and Postdoctoral Studies (CGPS) for all graduate students enrolled in a Ph.D. program. The objective of the candidacy assessment is to provide students with an opportunity to demonstrate depth and breadth of knowledge relevant to their discipline (*e.g.*, Food Science, Applied Microbiology or Bioproduct Sciences). While it is primarily an assessment tool, it also is an educational opportunity in that it allows the student to consider the broader context of their discipline in society. Students are expected to be able to show their knowledge of the literature, critical appraisal skills, communication skills and knowledge of research methodologies in their field. **The scope of the candidacy assessment is to be broader than the student's specific research area.** A student must demonstrate that they have **“a mature and substantive grasp of the discipline as a whole”**. Given successful completion of course work, satisfactory progress in research and a successful performance in the candidacy assessment, the Advisory Committee will recommend the student for acceptance as a fully qualified Ph.D. candidate.

### *1. Administration of the Ph.D. Oral Candidacy Assessment*

Time Limit: 2.5 hours

#### Assessment Questions:

Each member of the Advisory Committee (AC), which may include the Graduate Chair, will have two rounds of questions. Should the Chair choose to participate as a member of the AC, this will have been communicated to the student in advance. In the first round, each assessor will have 10-15 minutes. The number of questions asked will depend on the assessor's selection of questions and strategy, the depth of the answers provided by the student, and whether or not others enter the discussion, as another assessor may have had a similar inquiry.

In advance of the examination, each assessor should prepare a list of questions for their own use at the exam. Each assessor's disciplinary area of questioning can be shared with the student, but not the specific questions. The questions raised by the assessor should address the root disciplinary base(s) pertinent to the student's degree program (theories, historic developments, current issues, concepts, methodology, tools, *etc.*) or related aspects of the area and discipline(s) of science. The candidate, by correctly answering the question, will have demonstrated his/her knowledge base with respect to the subject area. A certain amount of in-depth probing may be appropriate. Such probing may best be left for the second round.

Questioning in the second round will generally be limited to ten minutes or less. The questions may be related to those already raised if the intention is to further probe the depth of understanding or complete a line of questioning. Alternatively, new questions from the assessor's list may be raised. The intent is to ensure that the questions enable the assessor to accurately assess the student's comprehension and understanding of the subject matter, his/her ability to synthesize information and his/her convergent thinking and problem-solving skills. Therefore, the committee members should be thoughtful in the design of their questions. The tendency to raise questions in an *ad hoc* manner or take another's lead is discouraged.

#### Process:

Once a question has been asked, the student must be given time to gather his/her thoughts and to answer the question. Redirecting or rephrasing the question is permitted and the Chair may clarify the question if necessary. The student may be invited to utilize the white/chalk board or a piece of paper to organize his/her thoughts, or to help explain a concept or theory. If the student is successful in handling a few questions in the first round, the assessor may stop and wait for the second round. Using up the allotted time (per round) with more difficult questions where the student ends up struggling is to be discouraged.

If the student's answer to a question is not satisfactory, it is critical that the assessor should articulate why. Often, partially correct (or even incorrect) answers may be interpreted differently by the assessor (the answer was wrong) and the student (I was not told I had the wrong answer and I felt I did okay). The downside of this transaction is the student's psychological reaction. At the end of the examination, areas of strengths and weaknesses may be communicated to the student by the AC Chair, or delegated to the supervisor for a follow-up discussion with the student.

#### Assessment of the Outcome:

An *in-camera* session will be held immediately following the examination. The outcome of the performance is considered to be satisfactory if that the student is deemed to have passed the examination (at least a 70% average). If doubts exist, the committee should articulate any discrepancies in the quality of the performance. If, on the other hand, the consensus or majority assessment is that the student has failed, the committee may recommend a follow-up written candidacy assessment. The student

is permitted in a second attempt at the recommendation of the academic unit and with the permission of the Dean of CGPS or designate. The second attempt should be conducted between one and three months after the first attempt. The format of second attempt is defined in the Section 2 in this guideline.

If the outcome of the subsequent written examination is also unsatisfactory, it automatically disqualifies the student from further work for a Ph.D. degree (see the CGPS Policy and Procedure Manual at <https://cgps.usask.ca/policy-and-procedure/index.php>).

The Graduate Chair will communicate the outcome of the assessment(s) to all concerned parties.

#### Timelines:

The candidacy assessment should be completed within 24 months from the initial Ph.D. program registration. Generally, the assessment will take place after course work has been completed.

The student should receive guidance and coaching through his/her supervisor(s), committee members, the Graduate Chair or the Department Head. The AC should be consistent in the declaration of the purpose of the assessment and its importance. The student should know the exact date in advance (a minimum of 4 weeks' notice). Some dedicated focus to prepare for this exam is required; however, a lengthy absence (months) from research to study for the assessment should be discouraged.

Once the AC has approved the timing of the candidacy assessment, the Graduate Chair will undertake the formalities of setting the assessment process in motion.

#### *2. Administration of the Written Candidacy Assessment (where necessary)*

The format and implementation of the written candidacy assessment will be determined by the AC of the student. General outlines for this assessment are given below; however, these may be altered at the discretion of the AC.

The assessment will consist of one or two questions per AC member. If the AC consists of more than five members, then the number of questions should be reduced to one per AC member. Questions must be prepared in advance by AC committee members and will be submitted to the Graduate Chair one week prior to the examination. The Graduate Chair will review all questions to determine appropriateness and consistency and may consult with the supervisor or other AC members, if necessary. If the Graduate Chair determines that a question is not suitable, he/she will contact the AC member and a new question will be developed and then will be subjected to the same approval process.

Questions should be selected to provide a balanced coverage of the following areas:

- (A) integration of the student's knowledge derived from coursework taken;
- (B) skills related to development of a research project (*e.g.*, design of a series of experiments based on a particular problem) or explanation of a theory or concept;
- (C) understanding of the general and cognate disciplines of the program of studies (*e.g.*, Food Science, Applied Microbiology or Bioproduct Sciences).

The student will be provided with an appropriate place to write the assessment and will be given up to six hours to write their answers. Assessment must be closed book. Students will be expected to produce high quality answers that follow a logical progression and are supported by sound scientific evidence. Spelling, grammar and appropriate sentence/paragraph structure will be taken into account when answers are graded.

AC members will be responsible for marking their question(s) in a timely manner (five working days) and must provide to the Graduate Chair both a percentage grade and a brief overview of the strengths and weaknesses of the answer(s) provided by the student.

To obtain a pass in the written assessment, the student must not receive a failing grade (<70%) from more than one AC member. An unsatisfactory candidacy assessment, and/or the denial of a second attempt at the candidacy assessment, may be appealed to the Graduate Academic Affairs Committee of CGPS on substantive grounds in accordance with Part IV of University Council's *Procedures for Student Appeals in Academic Matters*, or on grounds other than substantive academic judgment limited to those outlined in Part V.B.1.

*Adopted on May 13, 2024*

### ***Guidelines for admission and degree requirements for direct entry Ph.D. students***

To be admitted as a direct entry Ph.D. student, students require:

1. A four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study.
2. A cumulative weighted average of at least 80% in the last two years of undergraduate study (*e.g.* 60 credit units of course work).
3. Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English.
4. Demonstrated ability for independent thought, advanced study, and independent research, *i.e.*, solid evidence demonstrating great achievements in academic study and potential for advanced research.

Demonstration of ability (#4) shall be examined using information provided by the student in the application process. The evaluation should take into account, but not be limited to, the following items:

- Course work performance directly related to the research field;
- Past experience in research as evidenced by journal articles, conference presentation, technical reports, patents (applications), undergraduate research thesis, and so on;
- Awards from conferences, meetings, and competitions;
- Strong academic reference letters;
- Scholarship awards for Ph.D. study from recognized funding bodies.

Students who apply for direct entry into a Ph.D. program will provide the information listed above and any other evidence that the student would like to include for consideration. The supervisor and graduate chair will examine the information provided, and, if necessary, will request additional relevant information from the student and/or his/her referees. If they feel the student is qualified, supervisor(s) or Graduate Chair can recommend to the graduate affair committee (GAC) the student be accepted as a direct entry Ph.D. student. The GAC members will examine the materials provided by the student, supervisor and/or graduate chair. The supervisor(s) and/or Graduate Chair may call a GAC meeting to discuss the information before reaching a decision. The GAC will make the recommendation based on the majority of votes to accept the student into the Ph.D. program. The recommendation is forwarded to the department head for the final approval. If the department head disagrees, it should be sent back to GAC for reconsideration.

Degree requirements for a direct entry Ph.D. student are as follows:

Requirements specific to direct entry students are:

1. Complete a minimum of 12 CU at the 800-level, 9 CU of which must be completed within the first year of study;
2. Pass a qualifying examination that is at least as rigorous as a Master's thesis defense within 12 months of first registration (the administration of the qualifying examination should follow the FABS Guidelines for Qualifying Examination);
3. Other requirements are the same as regular Ph.D. students:
4. Must maintain continuous registration in the 996 course;
5. Must maintain registration in the 990 seminar course in the Fall and Winter terms;
6. Complete GSR 960;
7. Must pass the candidacy assessment within 24 months from the registration in the Ph.D. program (administration of the candidacy assessment should follow the FABS Guidelines for Candidacy Assessment); and
8. Write and defend a thesis based on original research.

*Amended on May 13, 2024*

## Part 1 – Research Proposal

(sample title page)

Title of proposal  
title of proposal (continued)



UNIVERSITY OF  
SASKATCHEWAN

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College of Agriculture  
and Bioresources

M.Sc. or Ph.D.  
Research Proposal by  
Student Name  
Department of Food and Bioproduct Sciences

Submitted to M.Sc./Ph.D. Advisory Committee  
Department of Food and Bioproduct Sciences  
Supervisor(s)

Date of proposal submission

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## Title of proposal

(NOTE: THE FORMAT OF THIS DOCUMENT IS SIMILAR TO THE THESIS FORMAT. THUS, YOU MAY BE ABLE TO USE THIS DOCUMENT FOR A PART OF YOUR THESIS DRAFT)

### 1. PROJECT OVERVIEW

#### 1.1 Summary

In this section, provide a general summary of the research proposal. State what and how you are going to do the work. The summary need only be five or six lines of text. It should be brief, but cover the major aspects of the work. It is not necessary to provide background information or anticipated results here.

#### 1.2 Hypothesis

Research hypotheses are the specific testable predictions made about the independent and dependent variables in the study. In this section, provide one or more hypotheses. Here you may need to include some background information to justify your hypothesis. Again, this is a short paragraph, maybe 10 to 15 lines long that covers the major anticipated results.

#### 1.3 Objectives

Here, state your objectives in point form. You can number them, but in this case, you have to follow the 1.3.1, 1.3.2, 1.3.3 convention. Since it is point form, it is likely easier to simply use bullets. In general, you want to consider objectives like <<Characterize 2-D gel patterns in *Micrococcus glutamicus* under normal and high cesium concentrations>> or <<Development of a model system for studying expression of Cry3Aa in *spo*<sup>-</sup> mutants of *Bacillus thuringiensis* using green fluorescent protein>>. Avoid repeating your hypotheses here. Your hypotheses are what you think will happen. Your objectives are what you are planning to do.

- Objective
- Another objective
- Another objective

### 2. LITERATURE SURVEY (OVERALL LENGTH 5-10 PAGES)

#### 2.1 Topic one

For the sections of the literature survey, include the literature **most relevant** to your work. Provide **enough background** so that when the reader gets to the experimental section, ***you don't have to explain why a particular technique, material, or isolate has been selected.*** If your proposal is particularly hypothesis-driven, try to include as many references as possible to back up your methodology. That is, show that other people have been successful with the same type of study in a different system. There is no real limit to how much to write, but **try to be as concise as possible.** It is a literature survey, not a literature review. In general, 5 ~ 10 pages should be enough to provide sufficient information. This part can be a draft for the literature review part of your thesis. You can update this part as you go. But at the stage of proposal writing, it is **not necessary** to be a complete literature review. Rather you should use your efforts on the experiments (and their interpretation and discussion).

#### 2.2 Topic two

Provide a separate sub-section for a new topic. Use as many new sub-sections as needed to provide the appropriate background information.

#### 2.3 Topic three

#### 2.4 Topic four

#### 2.5 Topic five

### 3. RESEARCH STUDIES

At the beginning of this section, you can write a general statement if it is appropriate and common to all of the studies. For example, <<In all studies outlined, the wild type strain of *E. coli* will serve as the reference isolate for controlled comparison>>.

#### 3.1 *Study 1: Short title of the study.*

##### 3.1.1 Abstract

Provide what you will do and how you will do it. Avoid explaining what you think is going to happen. A short paragraph is sufficient.

##### 3.1.2 Hypothesis

In four or five lines, provide your expected results for this study.

##### 3.1.3 Experimental approach

Briefly explain how the work will be done, citing references where appropriate. Be as clear as possible without defining things in fine detail. It is fine to state something like << Mutant strains will be generated using UV light according to the method of Adelberg *et al.*, 1965>>.

If there are multiple experiments within the study, then describe the experimental approach for each. Also include a statement on the experimental design and analyses and how experimental variation will be controlled or measured if appropriate.

##### 3.1.3.1 Title of first experiment

Ibid

##### 3.1.3.2 Title of next experiment within this study (if you need)

Ibid

##### 3.1.4 Expected results

Provide your expected results here. Don't go too deeply into detail, but provide more specific statements than in the hypothesis.

##### 3.1.5 Alternate strategies

Provide some alternatives to your proposed approach in case the experiments are not successful, such as <<If new lines of auxotrophic mutants cannot be generated, existing isolates from our laboratory will be used (Roy, 1991).

##### 3.1.6 Discussion

Discuss, in relation to what you've written with respect to the literature survey and the methodologies, why you expect the results that you are anticipating. In this section, you may want to state why you have selected a particular methodology, especially if it is a non-obvious choice.

#### 3.2 *Study 2: Short title of the study*

##### 3.2.1 Abstract

##### 3.2.2 Hypothesis

##### 3.2.3 Experimental approach

##### 3.2.3.1 Title of first experiment

##### 3.2.3.2 Title of next experiment within this study (if you need)

##### 3.2.4 Expected results

##### 3.2.5 Alternate strategies

##### 3.2.6 Discussion

### 4. RELEVANT WORK DONE TO DATE (THIS SECTION IS OPTIONAL)

In this section, provide relevant work that you have done, but don't bulk up your proposal with non-relevant work. In general, if it falls within the scope of the work that you propose, you should report on it, particularly if you have figures or tables and definitely if you've published or presented your work.

4.1 Title of work done

4.2 Title for another piece of work

4.3 Title for another piece of work

## 5. REFERENCES

List your references here following the convention of your field of study. Check with your advisor as to the format of preference.

## 6. TIMELINE FOR THE PROGRAM

A nice way to lay out the timeline for your program is to use a Gnett diagram as shown below. This particular one is separated into quarter-years. It is best to arrange the time divisions according to your particular timeline, so if it works better for you to divide your years into months rather than quarters, you may need to split your table into two or more tables.

| YEAR                  | 2018           | 2019           |                |                |                | 2020           |                |                |                | 2021           |                |                |                | 2022           |                |                |                |
|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| QUARTER               | Q <sub>4</sub> | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | Q <sub>4</sub> | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | Q <sub>4</sub> | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | Q <sub>4</sub> | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | Q <sub>4</sub> |
| Study 1               | x              | x              | x              | x              | x              | x              | x              | x              | x              | x              |                |                |                |                |                |                |                |
| Study 2               |                | x              | x              | x              | x              | x              | x              | x              | x              | x              | x              |                |                |                |                |                |                |
| Study 3               |                |                |                |                | x              | x              | x              | x              | x              | x              | x              | x              | x              | x              | x              |                |                |
| Study 4               |                |                |                |                |                |                |                |                |                |                | x              | x              | x              | x              | x              |                |                |
| Candidacy Assessment* |                |                |                |                |                |                | x              |                |                |                |                |                |                |                |                |                |                |
| Permission to write   |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                | x              |                |
| Exit seminar          |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                | x              |

\* Required for Ph.D. students only.

# Part 2 – Research Progress Report

(sample title page)

Title of progress report  
title of progress report (continued)



UNIVERSITY OF  
SASKATCHEWAN

College of Agriculture  
and Bioresources

M.Sc. or Ph.D.  
Research Progress Report by  
Student Name  
Department of Food and Bioproduct Sciences

(If it is to discuss permission-to-write, state it here)

Submitted to M.Sc./Ph.D. Advisory Committee  
Department of Food and Bioproduct Sciences  
Supervisor(s)

Date of proposal submission

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  - 3.2.3 Experimental approach.....
    - 3.2.3.1 Title of first experiment. ....
    - 3.2.3.2 Title of next experiment within this study (if you need).....
  - 3.2.4 Results .....
  - 3.2.5 Discussion .....

### ***4. REFERENCES .....***

### ***5. UPDATED TIME LINE FOR THE PROGRAM.....***

**For contents, use manuscript style of your discipline. Tables, figures and graphs should be near publication quality. Include measures of experimental error where appropriate.**

**TEMPLATE FOR WRITING A  
RESEARCH PROPOSAL (M.Ag. Program)**



**DEPARTMENT OF FOOD AND  
BIOPRODUCT SCIENCES**  
*August, 2019*

### **Overall purposes**

The purpose of this proposal document is to create a guideline of your research. The proposal document aims to help you organizing the knowledge and plans of your research, and to convey your ideas to supervisors, advisory committee members, and your colleagues at the beginning of your study. Please note that the document itself does not generate your research data. The time length spent to compile this document should be sufficient for you to understand what you are going to do, but should not be excessive to consume your precious time in the program. The length of proposal and progress report should be as short as to provide sufficient information.

### **Format for the Research Proposal**

Except the cover page, the text should use common font faces, such as Times, Helvetica, and Courier at the 12-point size. The line spacing should be 1.5 -spaced. The document should have the margin of one inch (2.5 cm) all around on single-sided, letter-size paper. The cover pages may have larger-size font. Don't forget to number the pages.

### **Consultation during Preparation**

The research proposal should be prepared in consultation with the supervisor(s). The supervisor(s) should approve the documents before they are submitted to the advisory committee. Thus, it is important to allow time for several drafts before distribution to the committee.

### **Plagiarism**

Plagiarism is a serious offense in academic writing. Read carefully the document about academic honesty (<http://www.usask.ca/integrity/pdfs/AcademHonestyForGradStudents.pdf>), and obey the guidelines given to prevent plagiarism. The maximum penalties for plagiarism are **expulsion from the university** and revocation of your thesis.

(sample title page)

Title of proposal  
title of proposal (continued)



UNIVERSITY OF  
SASKATCHEWAN

---

College of Agriculture  
and Bioresources

M.Ag.  
Research Proposal by  
Student Name  
Department of Food and Bioproduct Sciences

Submitted to M.Ag. Advisory Committee  
Department of Food and Bioproduct Sciences  
Supervisor(s)

Date of proposal submission

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**Title of proposal**  
**title of proposal (continued)**

(NOTE: THE FORMAT OF THIS DOCUMENT IS SIMILAR TO THE THESIS FORMAT.  
THUS YOU MAY BE ABLE TO USE THIS DOCUMENT FOR A PART OF YOUR THESIS  
DRAFT.)

## 1. PROJECT OVERVIEW

### ***1.1 Summary***

In this section, provide a general summary of the research proposal. And provide a ‘big picture’ of why you need to do this work. (1/2 – 1 page)

### ***1.2 Hypothesis***

Research hypotheses are the specific testable predictions made about the independent and dependent variables in the study. In this section, provide one or more hypotheses. Here you may need to include some background information to justify your hypothesis. Again, this is a short paragraph, maybe 10 to 15 lines long that covers the major anticipated results.

### ***1.3 Objectives***

Here, state your objectives in point form. You can number them, but in this case, you have to follow the 1.3.1, 1.3.2, 1.3.3 convention. Since it is point form, it is likely easier to simply use bullets. In general, you want to consider objectives like <<Characterize 2-D gel patterns in *Micrococcus glutamicus* under normal and high cesium concentrations>> or <<Development of a model system for studying expression of Cry3Aa in *spo<sup>-</sup>* mutants of *Bacillus thuringiensis* using green fluorescent protein>>. Avoid repeating your hypotheses here. Your hypotheses are what you think will happen. Your objectives are what you are planning to do.

## 2. LITERATURE SURVEY (OVERALL LENGTH 8-10 PAGES)

### ***2.1 Topic one***

### ***2.2 Topic two***

### ***2.3 Topic three***

***Etc...***

For the sections of the literature survey, include the literature **most relevant** to your work. Provide **enough background** so that when the reader gets to the experimental section, *you don't have to explain why a particular technique, material, or isolate has been selected*. If your proposal is particularly hypothesis-

driven, try to include as many references as possible to back up your methodology. That is, show that other people have been successful with the same type of study in a different system. There is no real limit to how much to write, but **try to be as concise as possible**. In general, **8 ~ 10 pages** should be enough to provide sufficient information. Note, you can use this literature survey apart of your final project report.

### 3. RESEARCH STUDIES

#### 3.1 Overall goal and Objectives.

Write what your the overall goal of your research project is and specific objectives. These may be a little bit more specific than those found in section 1.

#### 3.2 Hypothesis

In four or five lines, provide your expected results for this study.

#### 3.3 Experimental approach

Briefly explain how the work will be done, citing references where appropriate. Be as clear as possible without defining things in fine detail. It is fine to state something like << Mutant strains will be generated using UV light according to the method of Adelberg *et al.*, 1965>>.

If there are multiple experiments within the study, then describe the experimental approach for each. Also include a statement on the experimental design and analyses and how experimental variation will be controlled or measured if appropriate.

#### 3.4 Expected results and discussion

Provide your expected results here. Don't go too deeply into detail, but provide more specific statements than in the hypothesis. Discuss, in relation to what you've written with respect to the literature survey and the methodologies, why you expect the results that you are anticipating. In this section, you may want to state why you have selected a particular methodology, especially if it is a non-obvious choice.

### 4. REFERENCES

List your references here following the convention of your field of study. Check with your advisor as to the format of preference.

### 6. TIME LINE FOR THE PROGRAM

A nice way to lay out the timeline for your program is to use a Gnett diagram as shown below. This particular one is separated into quarter-years. It is best to arrange the time divisions according to your particular time line, so if it works better for you to divide your years into months rather than quarters, you may need to split your table into two or more tables.

|                   | Sept-Oct | Oct-Nov | Dec-Jan | Feb-Apr | May  | June | July | Aug  |
|-------------------|----------|---------|---------|---------|------|------|------|------|
|                   | 2019     | 2019    | 2019-20 | 2020    | 2020 | 2020 | 2020 | 2020 |
| Classes           | X        | X       | X       | X       |      |      |      |      |
| Seminar           |          |         |         | x       |      |      |      |      |
| Thesis proposal   | X        | X       | X       | X       | X    |      |      |      |
| Expt 1            |          |         |         |         | X    | X    |      |      |
| Expt 2            |          |         |         |         | X    | X    | X    |      |
| Expt 3            |          |         |         |         |      | X    | X    |      |
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