

Faculty of Pharmacy and Pharmaceutical Sciences

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The Faculty of Pharmacy and Pharmaceutical Sciences

The Faculty of Pharmacy and Pharmaceutical Sciences has a long and proud history of achievement. It began as a department in the Faculty of Medicine on April 13, 1914. Two programs were offered at that time, a one-year Licensing Diploma (discontinued in 1918) and a two-year PhmB degree. In 1917 the Department became a School under the Faculty of Arts and Sciences. The first three graduates of the newly approved Bachelor of Science in Pharmacy degree program obtained their degrees in 1921. The School continued to grow and prosper over the next two decades, with jurisdiction returning to the Faculty of Medicine in 1939. The School received Faculty status in 1955 and moved from a three to a four year program in 1969. Pharmacy became a five-year program (four years in the Faculty plus one preprofessional year) in the 1989-1990 academic year, and is planning a six-year Doctor of Pharmacy (PharmD) program (four years in the Faculty plus two preprofessional years) pending approval. For further information on the PharmD see the Pharmacy website at pharm.ualberta.ca.

From the beginning, faculty members hired in pharmacy have had a focus on scholarship and thus graduate studies and research have always been strengths of the Faculty. A 1961 PhD graduate represented the first PhD degree granted by a School or Faculty of Pharmacy in Canada. In recognition of its flourishing graduate program in pharmaceuticals, the Faculty received a new title in 1968: The Faculty of Pharmacy and Pharmaceutical Sciences. Since 1970, the Faculty has been active in the delivery of professional development programs for pharmacists.

The Faculty's **Vision** is: Excellence and innovation in pharmacy education and research through learning, discovery and citizenship.

The Faculty's **Mission** is: To provide pharmacy and graduate education designed to meet societal needs for safe and effective use of medications and to cultivate research and pharmacy practice.

The Faculty:

- Fosters high quality education and ongoing development of students and post-doctoral fellows
- Conducts world-class research in the basic and applied pharmaceutical sciences, clinical pharmacy sciences, and health services
- Seeks advancements and excellence in practice, research and education
- Partners with the profession, policy makers, other Faculties and Universities, and the public

Each year the Faculty admits 131 students who have met the prerequisite requirements and currently has about 55 graduate students. There are about 40 teaching and research faculty members. Our students excel nationally and have established a reputation of achieving and being rewarded for excellence.

A Doctor of Pharmacy (PharmD) for Practicing Pharmacists program is available at the University of Alberta. This program includes one term of didactic coursework followed by additional experiential education placements that can only take place after the completion of a BSc (Pharmacy) program. The didactic courses in the part-time program are scheduled over 18 months. Students in the PharmD program have five years to complete the degree's requirements. Licensure for the practice of pharmacy does not require the PharmD degree but it will help graduates to:

- advance their career, and become leaders in the Pharmacy profession
- demonstrate a competitive advantage when applying for unique and interesting positions
- create and shape their career through innovative patient focused practices
- develop the skills and knowledge to become an advanced practitioner
- information and clinical judgment to inform decisions
- possess the skills to be able to make a difference in complex pharmacotherapeutic situations

For more information see the Pharmacy website at www.pharm.ualberta.ca.

The Professors

Teaching and Scholarship

The Faculty's undergraduate pharmacy program is considered one of the best in Canada and has been a leader in developing new curricular approaches and experiential models. An external review committee has ranked our Graduate Studies and Research Programs among the top programs in North America. Faculty members have received numerous awards for their research and teaching in recent years.

The Faculty's researchers attract numerous external research grants and contracts in 2013-2014. The Faculty has also excelled in transferring its research technology to the marketplace. Several of the University's spin-off companies originated in the Faculty of Pharmacy and Pharmaceutical Sciences

Members of the Faculty

Officers of the Faculty

Dean

NM Davies, BScPharm, PhD, RPh

Vice Dean

C Hughes, BScPharm, PharmD

Associate Dean (Research and Graduate Studies)

SH Simpson, BSP, PharmD, MSc

Associate Dean (Academic and Student Affairs)

D Brocks, PhD

Associate Dean (Programs)

TBA

Senior Financial Officer

T Kurian
Academic Staff Professors

D Brocks, PhD
(Pharmacokinetics)

NM Davies, PhD
A El-Kadi, PhD (Drug Metabolism)

C Hughes, BScPharm, PharmD (Clinical, Infectious Diseases)

F Jamali, PhD
(Pharmacokinetics)

A Lavasanifar, PhD
(Pharmaceutics)

R Loebenberg, PhD
(Pharmaceutics)

S Majumdar, MD (Patient Health Management)

C Sadowski, BScPharm, PharmD (Clinical, Geriatrics)

JM Seubert, MS, PhD
(Pharmacology)

SH Simpson, BSP, PharmD, MSc (Diabetes Pharmacoeconomics)

N Yuksel, BScPharm, PharmD (Clinical, Women's Health)

Associate Professors

M Doschak, MSc, PhD
(Pharmacology of Bone Adaptation)

L Guirguis, BScPharm, MSc, PhD (Social Sciences in Pharmacy)

P Jurasz, PhD
(Pharmacology)

M Makowsky, BSP, PharmD
(Clinical, Primary Care)

TJ Schindel, BSP, MCE (Social Sciences in Pharmacy)

AG Siraki, PhD (Toxicology/Drug Metabolism)

H Sunwoo, MS, PhD

(Biopharmaceutical Biotechnology)

C Velazquez, PhD (Medicinal Chemistry)

Clinical Associate Professors

R Breault, BScPharm, PharmD

T Charrois, BScPharm, MSc

SL Mitchell, MPharm, PhD

A Thompson, BScPharm, PharmD

Assistant Professors

K Barakat, PhD (Biomedical Modelling)

T Makhinova, PhD (Social Sciences in Pharmacy)

S Marsh, PhD

(Pharmacogenomics)

U Ogbogo, LLB, LLM (Health Law)

J Ussher, PhD (Pharmacology)

Clinical Assistant Professors

R Bertholet, BScPharm, PharmD

K Cor, BEng, MEd, PhD

M Gukert, BScPharm

J Hall, BScPharm, PharmD

T Leslie, BSP

M MacDonald, BScPharm

S Mahmoud, BScPharm, MSc, PhD

C Necyk, BScPharm

S Patrick, PhD

R Sanghera-Grewal, BScPharm, PharmD

J Shkrobot, BScPharm

S Walter, BScPharm

Professors Emeriti

JA Bachynsky, PhD

DF Biggs, PhD

LG Chatten, PhD

RT Coutts, PhD, DSc

EE Knaus, PhD

S McQuarrie, PhD

RE Moskalyk, PhD

FM Pasutto, PhD

A Shysh, PhD

LG Stephens-Newsham, PhD

LI Wiebe, PhD

Professional Officers

D Bialowas, BEd (Program Administrator, Experiential Education)

C Cox, BSP, MBA (Coordinator, Experiential Education)

S Drozd, MLIS (Program Administrator, PharmD for Practicing Pharmacists)
L Shockey (Assistant Dean, Advancement)

Adjunct Professors

GB Baker, PhD

D Birkholz, PhD

D Freitag, PhD

M Guirguis, PhD

LO Klotz, MSc, PhD

S Koshman, PharmD

H Lopatka, PhD

G Pearson, PharmD

S Rix, BScPharm, PharmD

YK Tam, PhD

G Tyrrell, PhD

H Uludag, PhD

D Wishart, PhD

F Wuest, PhD

M Zolezzi, BPharm, MSc

Clinical Academic Colleagues

The most current list of Clinical Academic Colleagues is available at: pharm.ualberta.ca/about-us/contact-us-and-people

General Information

Opportunities in Pharmacy

The practice of pharmacy has grown from the compounding and dispensing of drugs to a "knowledge system" about drugs and drug products. Pharmacy practice has increasingly become oriented to the patient and accordingly requires the aspiring pharmacist to possess excellent communication skills and to be aware of, and sensitive to, the frequent need for compassion and understanding. Various career options are open to the pharmacist on graduation and licensure.

Community Pharmacy and Consultant Pharmacists

Nearly everyone is familiar with community pharmacists and the pharmacy in which they practice. You probably visit the community pharmacist more often than you do any other member of the health team. Pharmacists talk to people when they are healthy and when they are sick; when they are seeking immunizations, such as the influenza vaccine; when they are "just browsing" or when they are concerned with an emergency; when they have specific needs as well as when they are seeking advice or information. Pharmacists are playing an increasing role in the "wellness" movement, especially through counseling about preventive medicine.

Pharmacists serve patients and the community by providing information and advice on health, providing medications and associated services, and by referring patients to other sources of help and care, such as physicians, when necessary. Likewise, advances in the use of information technology in pharmacy practice now allow pharmacists to spend more time educating patients and maintaining and monitoring patient records. As a result, patients have come to depend on the pharmacist as a health care and information resource of the highest caliber. Pharmacists, in and out of the community pharmacy, are specialists in the science and clinical use of medications. They must be knowledgeable about the composition of drugs, their chemical and physical properties, and their manufacture and uses, as well as how products are tested for purity and strength. Additionally, a pharmacist needs to understand the activity of a drug and how it will work within the body. More and more prescribers rely on pharmacists for information about various drugs, their availability, and their activity, just as patrons do when they ask about nonprescription medications.

If pharmacists develop a desire to combine their professional knowledge and skills with the challenge of the fast-moving community pharmacy practice, they will often consider a management position within a chain pharmacy practice or ownership of their own pharmacy. In chain practice, career paths usually begin at the store level with possible subsequent advancement to a position at the district, regional, or corporate level. Many chain companies have management development programs in marketing operations, legal affairs, third party programs, computerization, and pharmacy affairs. The spirit of entrepreneurship and motivation has enabled many pharmacists to successfully own their own pharmacies or, through establishing consultation services, to function independently.

Hospitals and Other Institutional Settings

As society's health care needs have changed and expanded, there has been an increased emphasis on provision of care through organized health care settings. As a result, an increased number of pharmacists now practice in hospitals, nursing homes, extended care facilities, neighborhood health centers, and primary care networks. As members of the health care team composed of physicians and nurses, among others, pharmacists have an opportunity for direct involvement with patient care. The knowledge and clinical skills that the contemporary pharmacist possesses make this individual an authoritative source of drug information for physicians, nurses, and patients. In addition to direct patient care involvement, pharmacists in hospitals are responsible for systems which control drug distribution and are designed to assure that each patient receives the appropriate medication, in the correct form and dosage, at the correct time. Hospital pharmacists maintain records on each patient, using them not only to fill medication orders but also to screen for drug allergies and adverse drug effects.

Contemporary hospital pharmacy practice is composed of a number of highly specialized areas, including nuclear pharmacy, drug and poison information, and intravenous therapy. In addition, pharmacists provide clinical services in adult medicine, pediatrics, oncology, ambulatory care, and psychiatry. The nature and size of the hospital helps to determine the extent to which these specific services are needed. Because of the diversity of activities involved in pharmacy departments, there is also demand for management expertise, including finance

and budgeting, personnel administration, systems development, and planning. As hospital pharmacists continue to become more involved in providing patient-oriented services, the demand for practitioners in this area of pharmacy continues to grow.

Drug Utilization Review/Drug Use Evaluation

Pharmacists review drug utilization to determine which patients and prescribers are using particular medications. This allows the pharmacist to determine whether some drugs are inappropriately prescribed or used. With this knowledge in hand, the pharmacist and other care providers can then actively intervene in the patient's care process to assure better outcomes.

The Pharmaceutical Industry

Another career option in pharmacy is represented by the pharmaceutical industry that produces chemicals, prescription and nonprescription drugs, and other health products. Pharmacists are engaged in careers such as marketing, research and product development, quality control, sales, and administration. Many pharmacists go on to obtain postgraduate degrees in order to meet the technical demands and scientific duties required in pharmaceutical manufacturing. Pharmacists with an interest in sales and administration can combine this with their technical background in pharmacy by serving as medical service representatives. These representatives call on a variety of health care professionals to explain the uses and merits of the products their firms produce. Experienced and successful medical service representatives with administrative abilities often rise to supervisory or executive posts in the pharmaceutical industry. Pharmacists are also employed as sales representatives, supervisors, and administrators in wholesale drug firms.

Academic Pharmacy

Many pharmacy-trained faculty members work in the nation's schools of pharmacy. They are involved with teaching, research, public service, and patient care. Others serve as consultants for local, provincial, national, and international organizations. Becoming a member of the faculty at a school of pharmacy usually requires a postgraduate degree and/or training (e.g., PharmD, PhD degree, or residency or fellowship training following the professional degree program). There currently exists a shortage of faculty, creating an array of excellent professional opportunities.

Pharmacy practice faculty members have significant responsibility for patient care, in addition to their work in teaching and research. These academicians often are called educator/practitioners, and they serve as role models for pharmacy students and residents in many education/practice settings. Faculty members in disciplines other than pharmacy practice are usually involved in pharmaceutical sciences research. The pharmaceutical scientists are mainly concerned with research that includes sophisticated instrumentation, analytical methods, and animal models that study all aspects of drugs and drug products. Moreover, social, economic, and behavioral science research often uses survey methods and statistical analyses to solve complex problems of drug utilization management, health care delivery, marketing, management, and other practice issues. To paraphrase one current pharmacy faculty member, "Perhaps no other job in pharmacy has such far-reaching effects on the profession as that of an educator. It is in academia that one can excite individuals about pharmacy and lay the groundwork for continuing advances in the field."

Other Fields in Pharmacy

Pharmacists use their basic educational backgrounds in a host of federal, provincial, and professional positions.

At the federal level, pharmacists hold staff and supervisory posts in:

- Health Canada,
- in all branches of the armed services,
- many other agencies.

At the provincial level there are agencies charged with regulating the practice of pharmacy to preserve and protect the public health. These legal boards governing pharmacy practice usually have pharmacists employed as fulltime executive officers and inspectors. All provinces have an active pharmacy association that employs a full-time executive officer, usually a graduate of a school of pharmacy.

Several national professional associations are also guided by pharmacists with an interest and specialized knowledge of organizational work. You may know other pharmacists who are engaged in highly specialized tasks. There are pharmacists in advertising, packaging, technical writing, magazine editing, and science reporting. There are pharmacists with legal training serving as patent lawyers or as experts in pharmaceutical law.

By now, it should be clear to you that the diversity of pharmacy is one of its chief strengths. And, in diversity lies your opportunity. In Canada, the vast majority of

pharmacists practice in community or hospital pharmacies, or longterm and ambulatory care facilities. The remaining pharmacists follow one or another of the special fields you have just reviewed. The opportunity for success in any of these fields is wide open for men and women with ability, education, and imagination.

†Excerpted with edits from a booklet entitled "Shall I study Pharmacy?" published by the American Association of the Colleges of Pharmacy (AACCP).

Qualifications for Practice in Alberta

The Bachelor of Science degree in Pharmacy is the minimum academic requirement accepted by the Alberta College of Pharmacists to apply for registration to practice pharmacy in Alberta. To register as a pharmacist in Alberta, a graduate must complete a minimum of 900 hours of structured practical training through university curriculum rotations and placements. In addition, students must complete 100 hours of post-graduate internship. Applicants are required to complete the Pharmacy Examining Board of Canada Qualifying Exam Part I and II. This exam is offered twice a year, in May and November. A provincial Ethics and Jurisprudence Exam, administered by the Alberta College of Pharmacists must also be completed. Information concerning the regulations applying to practical experience in Alberta is available from the Registrar, Alberta College of Pharmacists, 1100-8215, 112 St NW, Edmonton, AB T6G 2C8. Information concerning the Qualifying Examination may be obtained from the Registrar, Pharmacy Examining Board of Canada, 717 Church Street, Toronto, ON M4W 2M4.

Pharmacy students enrolled in a university program recognized by the council must register on the student pharmacist register with the Alberta College of Pharmacists prior to commencing structured practical training. Requirements for application as a student pharmacist can be found at <https://pharmacists.ab.ca>.

The legislation governing the practice of pharmacy in the Province of Alberta is set forth in the *Health Professions Act*, RSA 2000 Chapter H7 and the Pharmacists and Pharmacy Technicians Profession Regulation (Amended 90/2011).

Faculty Accreditation

The BSc (Pharmacy) program at the University of Alberta has been granted Full Accreditation Status by the Canadian Council for Accreditation of Pharmacy Programs for a six-year term, 2011-2017.

Faculty Regulations

Admission

See Admission to Undergraduate Programs and General Admission Requirements for general admission requirements to the University. Specific admission information for the Bachelor of Science in Pharmacy and Doctor of Pharmacy (PharmD) programs is set out in Faculty of Pharmacy and Pharmaceutical Sciences.

Professional Ethics/Code of Student Behaviour

Students in the Pharmacy programs are required to adhere to the professional code of ethics of the Alberta College of Pharmacists. Refer to §30.3.3 of the Code of Student Behaviour, and Faculty of Pharmacy and Pharmaceutical Sciences for additional information. Amendments to the Code of Student Behaviour occur throughout the year. The official version of the Code of Student Behaviour, as amended from time to time, is housed on the University Governance website at www.governance.ualberta.ca.

Academic Standing

BSc in Pharmacy

1. Grades

- The means of assessing a student's progress and determining a student's grades may vary from one course to another, according to the nature of the course. Factors other than examination results may be used to a variable extent by instructors in determining grades. Students are informed at the beginning of each course how grades are to be determined.
- Students must satisfactorily complete all components of all courses.

2. Reexaminations: See Reexaminations

- Students are advised that it is not possible to make a ruling regarding remediation or reexamination until all grades for a year are received and recorded.
- The reexamination mark will replace the original final exam mark. Reexamination results do not alter the student's class standing.
- Any student who, after reexamination and/or evaluation, fails to meet promotion/graduation requirements, is deemed to have failed the year.
- A student who does not take a reexamination within the time period prescribed by the Faculty will not be allowed to continue in the program.
- Reexamination procedure:
 - The Associate Dean (Student Affairs) will specify by course the reexamination required of a failed student for the purposes of meeting promotion/graduation requirements.
 - All students will take the reexamination as scheduled by June 30.

3. Promotion and/or Continuation

- Progression in the program is year by year and not by courses completed. Accordingly, all students in a particular year of the program normally should be registered in the same courses in each term (BSc in Pharmacy). Students will not normally register in any core (i.e., non-elective) courses from a particular year of the program until they have satisfactorily completed core courses from the previous year of the program.
- Students accepted into the MBA/BSc in Pharmacy Combined Degrees program will be permitted to delay entrance into the fourth year by one year with no loss in standing. The duration of the total MBA/BSc in Pharmacy Combined Degrees program must not exceed six consecutive calendar years from the time of admission to the Pharmacy program.
 - the pass or failure of individual courses and
 - the GPA attained in a given year of the program (including courses taken in Spring Term). In computing the GPA, grades of W and CR/NC, and grades in courses accepted for transfer credit are not included. Each student's academic standing will normally be assessed at the end of the regular academic year, but in Years 1 and 2 of the program, such assessment will be delayed until grades are available for the practicums completed in Spring Term. Students who are on Academic Warning will be assessed at the end of each term. See Academic Warning.

- A student who is awarded First-Class Standing or Satisfactory Standing, as defined below, will normally qualify for promotion:

First-Class Standing: Awarded to an undergraduate student who obtains a GPA of 3.5 or above and passes all courses while enrolled in the full normal academic course load in that year (Year 1, ★28.5; Year 2, ★32; Year 3, ★29.5). See Program of Courses. **Note:** First-Class Standing is not awarded in Year 4 given the limited number of graded units taken in that year.

Satisfactory Standing: Awarded to a student who achieves a GPA of 2.1 or above for each year outlined in Program of Courses and if no course is failed.

- Conditional Standing:** Assigned to a student who achieves a GPA of 2.1 or above for each year outlined in Program of Courses but has failed one or more courses.

A student who is assigned Conditional Standing will be placed on Academic Warning and must retake and pass all failed courses. Other courses are to be taken, up to a normal course load, as scheduling permits and as approved by the Faculty.

Students on Academic Warning as a result of acquiring Conditional Standing will clear their Academic Warning upon passing the repeated courses and will qualify for promotion if they achieve Satisfactory Standing on the basis of all courses taken during Fall, Winter, and Spring terms. Students who fail a course a second time will be required to withdraw from the program..

- Required to Withdraw:** Any student failing to obtain a minimum GPA of 2.1 in any academic year is required to withdraw from the program.

Such students are not normally readmitted to the program. Students who fail to provide satisfactory criminal record checks in connection with any practicum placement, or who fail to complete their degree requirements within the five calendar years, may be required to withdraw from the program.

- Probation:** Students who have been required to withdraw and who have successfully appealed that decision will be placed on Probation and required to repeat the program year.

To clear probation and qualify for promotion, the student must achieve Satisfactory Standing in the probationary year. Students who fail to do so will be required to withdraw. Any student in a probationary year who fails a course in Fall Term will be required to withdraw immediately and subsequent registration will be cancelled.

Only one year of probation is allowed while registered in the Faculty of Pharmacy and Pharmaceutical Sciences..

- Appeals and Grievances:** Decisions on academic standing are made by the Faculty Council. Appeals may be made to the Academic Appeals Committee. Certain academic standing decisions made by the Faculty Academic Appeals Committee may be appealed to the General Faculties Council Academic Appeals Committee. Enquiries concerning standing in individual courses should be made to the professor in charge of the course. If the issue is still not resolved, the student may report the matter to the Office of the Dean for enquiry. See Appeals and Grievances for further information.

The Faculty's regulations governing academic appeals and grade appeals may be obtained in the Dean's Office..

- Leave of Absence:** Unless enrolled in a combined degree program, students must register in the pharmacy program on a continuous basis to ensure a place in the program. The Faculty does, however, recognize that important life events do occur that may prompt a student to request a Leave of Absence. Students who desire a temporary discontinuation of their program must obtain prior approval for a Leave of Absence by submitting a request to the Student Services Office. A Leave of Absence will not be granted automatically and will be considered only for acceptable reasons (e.g. incapacitating illness, severe domestic affliction). Discontinuance without permission requires the student to seek readmission to the program, which is not guaranteed.

Normally, a Leave of Absence is granted only if all the following conditions are met:

- A minimum of one full term must be completed within the degree program before a Leave of Absence is considered
- The student has a cumulative GPA of 2.1 in the pharmacy program
- The reasons for the absence are considered by the Faculty to be acceptable
- No transferable courses are being completed at another institution during the Leave of Absence period
- The leave of absence does not by itself extend the duration of the program beyond the normal limit for completion of the program

Note: An approved Leave of Absence will be granted for a maximum 12-month period of time, and will be granted only once in a student's academic career within the Faculty.

Graduation

1. Time Limit for Completion of Degree:

Normally, all students must complete their degree requirements within five calendar years from the time of their initial admission. This time limit includes all time during which a student is not in attendance, either for personal reasons [see Leave of Absence] or as a result of suspension or requirement to withdraw. Students should be aware of the need to provide a criminal record check for placement in the Experiential courses that are required for completion of the degree in pharmacy. Failure to provide a clean check can lead to delays or even the inability to fulfill these course requirements. This may lead to an inability to complete the program within the specified five-year period. Any failure or inability to complete the program within five years may be cause for Requirement to Withdraw from the program.

2. Academic Performance for Graduation

Students must achieve Satisfactory Academic Standing in their final year of the program; present credit (CR or a minimum University of Alberta grade of D or equivalent) in all program requirements; and present a graduation average of at least 2.1. The graduation average is a cumulative measure of a student's grade points obtained while registered in the Faculty in all years and terms, including Spring/Summer. It is the quotient of (a) the total number of grade points earned by a student in courses credited to the degree and (b) the total weight of those courses.

3. Degree With Distinction

Degrees with Distinction shall be awarded to students who achieve a GPA of 3.5 or higher on the last ★64.5 that are taken in, or are approved specialization electives of, the Faculty and are included in the calculation of GP.

Doctor of Pharmacy (PharmD)

1. Grades

- The means of assessing a student's progress and determining a student's grades may vary from one course to another, according to the nature of the course. Factors other than examination results may be used to a variable extent by instructors in determining grades. Students are informed at the beginning of each course how grades are to be determined.
- Students must satisfactorily complete all components of all courses.

2. Reexaminations: See Reexaminations

- Students are advised that it is not possible to make a ruling regarding remediation or reexamination until all grades for a year are received and recorded.
- The reexamination mark will replace the original final exam mark. Reexamination results do not alter the student's class standing.
- Any student who, after reexamination and/or evaluation, fails to meet promotion/graduation requirements, is deemed to have failed the year.
- A student who does not take a reexamination within the time period prescribed by the Faculty will not be allowed to continue in the program.
- Reexamination procedure:
 - The Associate Dean (Student Affairs) will specify by course the reexamination required of a failed student for the purposes of meeting promotion/graduation requirements.
 - All students will take the reexamination as scheduled by June 30.

3. Promotion and/or Continuation

- Progression in the program is year by year and not by courses completed. Accordingly, all students in a particular year of the program normally should be registered in the same courses in each term (see Graduation.) Students will not normally register in any core (i.e., non-elective) courses from a particular year of the program until they have satisfactorily completed core courses from the previous year of the program. Students accepted into the MBA Combined Degrees program will be permitted to delay entrance into the fourth year by one year with no loss in standing. The duration of the total MBA Combined Degrees program must not exceed six consecutive calendar years from the time of admission to the Pharmacy program
- Academic standing is assessed on the basis of:
 - the pass or failure of individual courses and

- the GPA attained in a given year of the program. In computing the GPA, grades of W and CR/NC, and grades in courses accepted for transfer credit are not included.

Each student's academic standing will normally be assessed at the end of the regular academic year. Students who are on Academic Warning will be assessed at the end of each term. See Academic Warning.

- A student who is awarded First-Class Standing or Satisfactory Standing, as defined below, will normally qualify for promotion:

First-Class Standing: Typically awarded to an undergraduate student who obtains a GPA of 3.5 or above and passes all courses while enrolled in the minimum full academic course load in that year. Note: First-Class Standing is not awarded in Year 4 given the limited number of graded units taken in that year.

Satisfactory Standing: Students are in satisfactory standing when they have completed each required course with a minimum letter grade of B- or assigned a grade of CR in credit/no credit courses.

- Conditional Standing:** Assigned to a student who achieves a GPA of 2.1 or above but has failed one or more courses.

A student who is assigned Conditional Standing will be placed on Academic Warning and must retake and pass all failed courses. Other courses are to be taken, up to a normal course load, as scheduling permits and as approved by the Faculty.

Students on Academic Warning as a result of acquiring Conditional Standing will clear their Academic Warning upon passing the repeated courses and will qualify for promotion if they achieve Satisfactory Standing on the basis of all courses taken during the Year of Study. Students who fail a course a second time will be required to withdraw from the program.

- Required to Withdraw:** Any student failing to obtain a minimum GPA of 2.1 in any academic year is required to withdraw from the program. Such students are not normally readmitted to the program. Students who fail to provide satisfactory criminal record checks in connection with any practicum placement, or who fail to complete their degree requirements within the five calendar years, may be required to withdraw from the program.

- Probation:** Students who have been required to withdraw and who have successfully appealed that decision will be placed on Probation and required to repeat the program year.

To clear probation and qualify for promotion, the student must achieve Satisfactory Standing in the probationary year. Students who fail to do so will be required to withdraw. Any student in a probationary year who fails a course in Fall Term will be required to withdraw immediately and subsequent registration will be cancelled.

Only one year of probation is allowed while registered in the Faculty of Pharmacy and Pharmaceutical Sciences.

- Appeals and Grievances:** Decisions on academic standing are made by the Faculty Council. Appeals may be made to the Academic Appeals Committee. Certain academic standing decisions made by the Faculty Academic Appeals Committee may be appealed to the General Faculties Council Academic Appeals Committee. Enquiries concerning standing in individual courses should be made to the professor in charge of the course. If the issue is still not resolved, the student may report the matter to the Office of the Dean for enquiry. See Appeals and Grievances for further information.

The Faculty's regulations governing academic appeals and grade appeals may be obtained in the Dean's Office.

- Leave of Absence:** Unless enrolled in a combined degree program, students must register in the pharmacy program on a continuous basis to ensure a place in the program. The Faculty does, however, recognize that important life events do occur that may prompt a student to request a Leave of Absence. Students who desire a temporary discontinuation of their program must obtain prior approval for a Leave of Absence by submitting a request to the Student Services Office. A Leave of Absence will not be granted automatically and will be considered only for acceptable reasons (e.g. incapacitating illness, severe domestic affliction). Discontinuance without permission requires the student to seek readmission to the program, which is not guaranteed.

Normally, a Leave of Absence is granted only if all the following conditions are met:

- A minimum of one full term must be completed within the degree program before a Leave of Absence is considered
- The student has a cumulative GPA of 2.1 in the pharmacy program
- The reasons for the absence are considered by the Faculty to be acceptable

- d. No transferable courses are being completed at another institution during the Leave of Absence period
- e. The leave of absence does not by itself extend the duration of the program beyond the normal limit for completion of the program

Note: An approved Leave of Absence will be granted for a maximum 12-month period of time, and will be granted only once in a student's academic career within the Faculty.

Graduation

1. Time Limit for Completion of Degree:

Normally, all students must complete their degree requirements within five calendar years from the time of their initial admission. This time limit includes all time during which a student is not in attendance, either for personal reasons [see Leave of Absence] or as a result of suspension or requirement to withdraw. Students should be aware of the need to provide a criminal record check for placement in the Experiential courses that are required for completion of the degree in pharmacy. Failure to provide a clean check can lead to delays or even the inability to fulfill these course requirements. This may lead to an inability to complete the program within the specified five-year period. Any failure or inability to complete the program within five years may be cause for Requirement to Withdraw from the program.

2. Academic Performance for Graduation

Students must achieve Satisfactory Academic Standing in their final year of the program; present credit (CR or a minimum University of Alberta grade of D or equivalent) in all program requirements; and present a graduation average of at least 2.1. The graduation average is a cumulative measure of a student's grade points obtained while registered in the Faculty in all years and terms, including Spring/Summer. It is the quotient of (a) the total number of grade points earned by a student in courses credited to the degree and (b) the total weight of those courses.

3. Degree With Distinction

Degrees with Distinction shall be awarded to students who achieve a GPA of 3.5 or higher on all courses taken in the program.

Doctor of Pharmacy (PharmD) for Practicing Pharmacists

1. Grades

- a. The means of assessing a student's progress and determining a student's grades may vary from one course to another, according to the nature of the course. Factors other than examination results may be used to a variable extent by instructors in determining grades. Students are informed at the beginning of each course how grades are to be determined.
- b. Students must satisfactorily complete all components of all courses.

2. Reexaminations: See Reexaminations

3. Promotion and/or Continuation

- a. Academic standing is assessed on the basis of:
 - i. Performance in individual courses,
 - ii. CR in credit/no credit courses,
 - iii. A minimum letter grade of B- in all courses in which a letter grade is assigned, and
 - iv. Students must take a minimum of one course in each term unless prior approval is granted by the Director of the PharmD program or the Associate Dean (Student Affairs).
- a. Proof of current licensure as a pharmacist with the Alberta College of Pharmacists and authorization to administer drugs by injection must be provided prior to the first rotation commencing and annually.
- b. Satisfactory Standing: Students are in satisfactory standing when they have completed each required course with a minimum letter grade of B- or assigned a grade of CR in credit/no credit courses.
- c. Conditional Standing: Students are placed in this category and placed on Academic Warning when upon a first attempt at a course, the student has not achieved a minimum grade of B- or a grade of CR in credit/non-credit courses. In such cases the student must retake the course involved the next time it is offered. Such students will clear their Academic Warning upon achieving a grade of B- or CR on the second attempt in order to be placed in Satisfactory Standing.
- d. Required to Withdraw: Students who fail to achieve a minimum grade of B- or a grade of CR in credit/non-credit courses a second time will be required to withdraw from the program. Failure to provide documentation of current licensure and authorization to administer drugs by injection

with the Alberta College of Pharmacists will necessitate withdrawal from the program.

4. Appeals and Grievances: Decisions on academic standing are made by the Faculty Council. Appeals may be made to the Academic Appeals Committee. Certain academic standing decisions made by the Faculty Academic Appeals Committee may be appealed to the General Faculties Council Academic Appeals Committee. Enquiries concerning standing in individual courses should be made to the professor in charge of the course. If the issue is still not resolved, the student may report the matter to the Office of the Dean for enquiry. See Appeals and Grievances for further information.
5. The Faculty's regulations governing academic appeals and grade appeals may be obtained in the Dean's Office.
56. Leave of Absence: Students must register in one course per term. Students who desire a temporary discontinuation of their program must obtain prior approval for a Leave of Absence by submitting a request to the Student Services Office. A Leave of Absence will not be granted automatically. Note: An approved Leave of Absence will be granted for a maximum 12-month period of time.

Graduation

1. Time Limit for Completion of Degree:

Normally, all students must complete their degree requirements within five years from the time of their initial admission. This time limit includes all time during which a student is not in attendance, either by personal choice or as a result of suspension or requirement to withdraw. This time will not apply to leaves granted by the Faculty to the student for medical or other reasons. Contact the Faculty regarding options for part-time PharmD studies.

2. Academic Performance for Graduation

Students must attain a grade of B- or CR in all courses in the PharmD program, and must satisfactorily complete all components of all courses.

Practicum Intervention Policy

The Dean, or Supervisor acting on behalf of the Dean, may immediately deny assignment of a student to, withdraw a student from, or vary terms, conditions or site of a practicum/clinical placement if the Dean or Supervisor has reasonable grounds to believe that this is necessary in order to protect the Public Interest. Refer to Practicum Intervention Policy for additional information.

Practicum Policies and Requirements

1. Registration with Alberta College of Pharmacists The Health Professions Act requires that pharmacy students be registered as students (restricted practitioners) or if holding an undergraduate degree in pharmacy to be on the College's clinical register in order to practice in the exclusive scope areas of pharmacy to which they are exposed in a clinical placement. All fees and other costs associated with this registration are the responsibility of the student.

Police Information Check: Under The Protection for Persons in Care Act, all students going to any placement site in Alberta are required to complete a Police Information Check (also known as a Criminal Record Check, Security Clearance Check, or Police Clearance), which must include a Vulnerable Sector Check. The Faculty requires this check prior to the start of the first experiential learning course. The placement site will determine the criteria for acceptance/denial of a placement.

Police Information Checks will be collected at a designated time by the Experiential Education Office of the Faculty. Typically, one Police Information Check will be required for the duration of the program if continuously enrolled. However, students will be required to confirm annually that their Police Information Check remains clear. If there is a change in status, a new Police Information Check is required. The Police Information Check must be dated no earlier than 90 days prior to the date of collection as determined by the Faculty's Office of Experiential Education.

Students who have an unclear Police Information Check may be unable to complete required experiential activities and may be required to withdraw from the program.

Students who have concerns related to their ability to provide a clear Police Information Check should consult with the Faculty. The ultimate responsibility for ensuring that students meet the requirements of placement sites lies with the students. Other background checks may be required by a placement site, such as a child intervention record check. Students will be advised if any additional background checks are required by a placement site. See Requirement for Police Information Checks for more information on the general requirements concerning Police Information Checks and the fees associated with them.

CPR and First Aid Certification: Students in the Faculty must obtain certification in cardiopulmonary resuscitation (CPR) Level C and a certificate in First Aid

(Standard or Emergency First Aid) by the end of March (last business day) of first year for the BScPharm program or Doctor of Pharmacy (PharmD) program or prior to clinical placements for the Doctor of Pharmacy (PharmD) for Practicing Pharmacists program. Please note that CPR Level C with First Aid meets the requirements for providing injections. All fees and other costs for CPR/First Aid certification are the responsibility of the student. Students must maintain valid certification for both CPR Level C and First Aid until they graduate.

2. University Infectious Diseases Regulation :

See University Infectious Diseases Regulation.

N 95 Respirator Fit Testing

Students with potential exposure to airborne infectious agents during clinical placement are required to be fit tested for N 95 respirators, as required by the clinical placement facility. Check with the Faculty office for the procedure to schedule this fit testing.

3. Procedures: The procedures governing practicums and placement are binding and will be provided in a procedures manual.
4. Placement: All required practicums are undertaken at Faculty-approved sites. The Faculty of Pharmacy and Pharmaceutical Sciences is committed to a regional placement program in which students are normally required to undertake practicums in centres other than Edmonton. Access to transportation and accommodation is not considered in making practicum placements. Such access, and the associated costs, are the responsibility of the student.
5. Site protocols: Students on volunteer or practicum placements are required to follow the administrative procedures and regulations (including dress requirements) of the placement site.
6. Although special services are provided on campus to assist disabled students, these same services may not be available for off-campus placements.

Programs of Study

Graduate Study

Students may undertake graduate study leading to the degree of MPharm, MSc, or PhD. Any students contemplating such work should discuss their program with the Associate Dean (Research and Graduate Studies) of the Faculty of Pharmacy and Pharmaceutical Sciences. They should also familiarize themselves with the admission requirements, regulations, and procedures of the Faculty of Graduate Studies and Research. These may be found in Graduate Programs..

Courses

Faculty of Pharmacy and Pharmaceutical Sciences courses can be found in Course Listings, under Pharmacy (PHARM).

BSc in Pharmacy

General Information

The BSc in Pharmacy program is four years.

The courses to be taken in the first three years of the program are specified and are considered basic to the education of pharmacists. The fourth-year allows for some specialization through electives.

Program of Courses

Note: The following plan applies to students admitted to the BSc in Pharmacy program in 2014-2015 or later.

Year 1 (★31.5)

- PHARM 300 - Experiential Learning - Part 1
- PHARM 301 - Principles of Drug Action - Introduction to Medicinal

Chemistry

- PHARM 304 - Introduction to Core Skills Required of a Health Professional- Drug Information
- PHARM 305 - Experiential Learning - Part 2
- PHARM 306 - Introductory Biomedical Science
- PHARM 307 - Dermatology, Eye, Ear, Nose and Throat
- PHARM 314 - Introduction of Core Skills Required of a Health Prof- Communications-Part I
- PHARM 321 - Pharmacy Biotechnology and Immunology
- PHARM 322 - Role of the Pharmacist in the Canadian Health Care System
- PHARM 324 - Introduction to Core Skills Required of a Health Professional- Evidence Based Medicine
- PHARM 331 - Pharmaceutics 1
- PHARM 334 - Introduction to Core Skills Required of a Health Professional - Communications - Part 2
- PHARM 341 - Pharmacy Math
- PHARM 342 - Introduction to Drug Use Control Process and Patient Care

Year 2 (★34)

- PHARM 311 - Radiopharm and Diagnostic Imaging
- PHARM 316 - Experiential Learning Part 3
- PHARM 327 - Nutrition
- PHARM 330 - Comprehensive Patient Care and Assessment 1
- PHARM 347 - Hematology
- PHARM 351 - Biopharmaceutics and Pharmacokinetics
- PHARM 357 - Gastrointestinal
- PHARM 361 - Pharmaceutics 2
- PHARM 362 - Pharmacy Laws and Ethics
- PHARM 367 - Cardiology
- PHARM 377 - Immunotherapeutics and Transplant
- PHARM 392 - Pharmacoepidemiology and Pharmacy Practice Research
- PHARM 397 - Lab Values, Urology and Nephrology
- PHARM 427 - Pain
- INT D 410 - Interprofessional Health Team Development
- PHARM 487 - Pulmonary

Year 3 (★32.5)

- PHARM 372 - Pharmacy Management
- PHARM 382 - Provincial and Canadian Healthcare
- PHARM 387 - Pediatrics / Geriatrics
- PHARM 407 - Infectious Diseases 1
- PHARM 417 - Neurology
- PHARM 430 - Comprehensive Patient Care and Assessment 2
- PHARM 437 - Bone and Joint
- PHARM 447 - Psychiatry
- PHARM 467 - Oncology
- PHARM 477 - Infectious Diseases 2
- PHARM 497 - Endocrine
- PHARM 499 - Women's and Men's Health
- Option (★3)

Year 4 (★31)

- (Students will be off campus in one term: spring/summer, fall, or winter terms. Coursework will be completed in another term.
- PHARM 426 - Experiential Learning - Part 4
- PHARM 428 - Experiential Learning - Part 5
- Specialization electives (★9)
- Options (★6)

*Specialization Electives

Students wanting to further develop their intended pattern of specialization may want to select courses from the list of pattern-related electives identified by the Faculty of Pharmacy and Pharmaceutical Sciences. At least ★3 of the ★9 Specialization Electives must be taken as a PHARM course. A list of available Specialization Electives will be provided by the Faculty office. Specialization Electives must be University of Alberta courses and must be taken during year four of the program. Transfer credit is not accepted for Specialization Electives..

*Options

Options normally are selected from courses offered outside the Faculty of Pharmacy and Pharmaceutical Sciences. These courses allow students to pursue areas of personal interest and promote a liberal education.

Note: Only one junior course from each subject area is permitted. Junior courses are those numbered 199 or lower.

Doctor of Pharmacy (PharmD)

The Doctor of Pharmacy (PharmD) is a clinical doctorate leading to the PharmD degree. There are three routes to the degree (1) direct entry to the program, (2) students currently in the BSc in Pharmacy program, and (3) practicing pharmacists. Students should visit our website at www.pharm.ualberta.ca.

(1) Doctor of Pharmacy (PharmD)

The Doctor of Pharmacy (PharmD) for students entering the program is a four year program consisting of coursework (★101) and practice experience (★40). The courses are required for all students. The elective courses permit exploration of the field of pharmacy. The fourth-year focuses on practice experiences.

Year 1 (★36)

- PHARM 201 - Principles of Medical Chemistry
- PHARM 202 - Pharmaceutics 1
- PHARM 203 - Introduction to Pharmacology
- PHARM 204 - Physiology and Anatomy for Pharmacy 1
- PHARM 205 - Physiology and Anatomy for Pharmacy 2
- PHARM 212 - Behavioural, Administrative, Social and Evidence-based Pharmacy 1
- PHARM 213 - Behavioural, Administrative, Social and Evidence-based Pharmacy 2
- PHARM 220 - Patient Care Skills 1
- PHARM 223 - Patient Care Skills 2
- PHARM 243 - Pharmacotherapy 1
- PHARM 254 - Community Service Learning
- INT D 410 - Interprofessional Health Team Development

Year 2 (★34)

- PHARM 302 - Pharmaceutics 2
- PHARM 303 - Essentials of Pharmacokinetics
- PHARM 312 - Behavioural, Administrative, Social and Evidence-based Pharmacy 3
- PHARM 313 - Behavioural, Administrative, Social and Evidence-based Pharmacy 4
- PHARM 320 - Patient Care Skills 3
- PHARM 323 - Patient Care Skills 4
- PHARM 343 - Pharmacotherapy 2
- PHARM 344 - Pharmacotherapy 3
- PHARM 345 - Pharmacotherapy 4
- PHARM 346 - Pharmacotherapy 5
- PHARM 354 - Introduction Pharmacy Practice Experience 1 - Community Practice

Year 3 (★37)

- PHARM 401 - Toxicology and Pharmacogenomics
- PHARM 412 - Behavioural, Administrative, Social and Evidence-based Pharmacy 5
- PHARM 413 - Behavioural, Administrative, Social and Evidence-based Pharmacy 6
- PHARM 420 - Patient Care Skills 5
- PHARM 423 - Patient Care Skills 6
- PHARM 443 - Pharmacotherapy 6
- PHARM 444 - Pharmacotherapy 7
- PHARM 445 - Pharmacotherapy 8
- PHARM 446 - Pharmacotherapy 9
- PHARM 448 - Pharmacotherapy 10
- PHARM 454 - Introductory Pharmacy Practice Experience 2 - Acute Care Practice
- *Elective (★3)

Year 4 (★34)

- Students will be off campus in two terms: Spring/Summer, Fall, or Winter Terms
- PHARM 543 - PharmD Integrating Seminar
- PHARM 546 - PharmD Integrating Seminar
- PHARM 554 - Advanced Pharmacy Practice Experience 1 - Community Practice
- PHARM 555 - Advanced Pharmacy Practice Experience 2 - Acute Care Practice
- PHARM 556 - Advanced Pharmacy Practice Experience 3 - Selective Patient Care
- PHARM 557 - Advanced Pharmacy Practice Experience 4 - Elective

*Elective

A list of available electives will be provided by the Faculty office. The elective must be taken during year three of the program or with permission of the Faculty. Transfer credit is not accepted for the elective.

(2) Doctor of Pharmacy (PharmD) for BSc in Pharmacy Students

Doctor of Pharmacy (PharmD) for students currently enrolled in the BSc in Pharmacy program consists of coursework (★14) and practice experience (★32) following the completion of Year 3 in the University of Alberta BSc (Pharmacy) program.

Year 4 (★48)

- Year 4 consists of three terms over 12 months.
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- Students will be off campus in two terms: Spring/Summer, Fall, or Winter. Coursework will be completed on campus in another term.
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- PHARM 426 - Experiential Learning - Part 4
- PHARM 428 - Experiential Learning - Part 5
- PHARM 531 - Critical Analysis of Evidence
- PHARM 532 - Patient Assessment
- PHARM 536 - Advanced Pharmacy Practice Experience - Selective in Patient Care
- PHARM 537 - Advanced Pharmacy Practice Experience - Elective
- PHARM 538 - PharmD Seminars
- PHARM 539 - PharmD Seminars
- PHARM 547 - Advanced Therapeutics, Collaboration and Professional Learning
- *Elective (★3)

Note: *A list of approved electives will be provided by the Faculty office. The elective must be taken during year three or four of the program or with permission of the Faculty. Transfer credit is not accepted for the elective

(3) Doctor of Pharmacy (PharmD) for Practicing Pharmacists

The Doctor of Pharmacy (PharmD) for Practicing Pharmacists program consists of coursework (★18) and practice experience (★36) following the completion of a BSc (Pharmacy) degree.

Program of Courses – Full-time

- PHARM 501 - Critical Analysis of Evidence in Practice
- PHARM 502 - Advanced Patient Care Skills and Health Assessment
- PHARM 503 - Advanced Pharmacotherapy
- PHARM 504 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice
- PHARM 505 - PharmD Seminars
- PHARM 511 - PharmD Experiential Learning Part 1
- PHARM 512 - PharmD Experiential Learning Part 2
- PHARM 513 - PharmD Experiential Learning Part 3
- PHARM 514 - PharmD Elective Rotation
- PHARM 515 - PharmD Specialty Elective

Program of Courses – Part-time

- PHARM 511 - PharmD Experiential Learning Part 1
- PHARM 512 - PharmD Experiential Learning Part 2
- PHARM 513 - PharmD Experiential Learning Part 3
- PHARM 514 - PharmD Elective Rotation
- PHARM 515 - PharmD Specialty Elective
- PHARM 521 - Critical Analysis of Evidence in Practice
- PHARM 522 - Advanced Patient Care Skills and Health Assessment
- PHARM 523 - Advanced Pharmacotherapy - Part 1
- PHARM 524 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 1
- PHARM 525 - PharmD Seminars - Part 1
- PHARM 533 - Advanced Pharmacotherapy - Part 2
- PHARM 534 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 2
- PHARM 535 - PharmD Seminars - Part 2
- PHARM 544 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 3
- PHARM 545 - PharmD Seminars - Part 3