

Faculty of Pharmacy

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http://umanitoba.ca/faculties/pharmacy/staff/academic_staff.html

Pharmacists are specialists in drug therapy and provision of pharmaceutical care. This involves not only the traditional function of preparing and dispensing medications but includes designing and monitoring drug therapy plans to optimize patient care. The Faculty of Pharmacy has been educating pharmacists for over one hundred years. It has dynamic faculty members characterized by their teaching expertise, research programs and practice partnerships in the health sciences field. Members of the Faculty are internationally recognized through their participation in research and various committees and agencies. Their research is funded through a variety of sources including, CIHR, NSERC, CRC, various other government agencies, and the pharmaceutical industry.

The undergraduate pharmacy program is meant to prepare students for entry-level practice in the profession of pharmacy by providing them with a solid foundation in the basic, pharmaceutical and clinical sciences which is applied to the concept of pharmaceutical care. In addition, the program is designed to provide students with a broad experience in patient care through the nineteen weeks of practical experience in health orientated health care settings and hospital and community pharmacies. The experience is further enhanced with an open elective program in the final year of studies.

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SECTION 1: Degree Programs Offered

| Programs | | |
|----------------|--------------------|---------------------|
| Program/Degree | *Years to Complete | *Total Credit Hours |
| B.Sc. Pharmacy | 5 | 168 |

*This includes one year of study in University 1 (30 credit hours). The credit hours for this program are under review. Please check the Aurora Student Catalogue after July 1, 2010 for updated information.

1.2 Professional Designation

Manitoba Pharmaceutical Association

Students who are accepted for admission to the Faculty of Pharmacy and have commenced classes in the Faculty shall, before October 31 in the year in which they are admitted to the Faculty, file an application for registration as a student of the Manitoba Pharmaceutical Association. Application forms are obtainable from The Registrar, Manitoba Pharmaceutical Association, 200 Tache Ave., Winnipeg, Manitoba R2H 1A7; telephone, (204) 233-1411 and are also included in the Student Handbook. The necessary documents which must accompany the application are indicated on the form.

Full information on the requirements for licensure in the Province of Manitoba is available from the registrar of the Manitoba Pharmaceutical Association.

Pharmacy Examining Board of Canada

All applicants for licensure must pass the qualifying examinations of the Pharmacy Examining Board of Canada. The board requires proof of language proficiency. Applicants who did not attend primary and secondary educational institutions where English or French was the principal language of instruction must provide evidence of successful completion of designated language proficiency tests before sitting for the qualifying examinations.

SECTION 2: Admission Requirements

2.1 Course Requirements

(University of Manitoba)

Chemistry CHEM 1300 and CHEM 1310

Biology BIOL 1020 & BIOL 1030

Mathematics MATH 1500, or MATH 1510 or MATH 1520

6 credit hours of Arts electives (of which 3 hours satisfy the University Written English requirement): 0900 courses such as ENGL 0940 are NOT acceptable.

9 credit hours of open electives: 0900 courses such as ENGL 0930 are NOT acceptable.

All admission requirements, as well as application deadline dates and forms, are included in an applicant information bulletin that is available on the University website at: <http://www.umanitoba.ca/student/admissions/media/pharmacy.pdf>

2.2 Other Requirements

Other requirements

High school prerequisites: Math 40S (pre-calculus) with minimum grade of 60%, Chemistry 40S with minimum grade of 50%, Biology 40S with minimum grade of 50%.

Minimum GPA for consideration: 3.5. (Please refer to the Faculty of Pharmacy Applicant Info Bulletin for more details).

The admission process includes a written essay/problem solving exercise.

Selection criteria: 70% AGPA, 30% written essay/problem solving exercise. Only students with an essay score of five or more (out of a possible ten) will be ranked for admission.

Criminal Record Check/Child Abuse Registry Check

Many health care agencies where Pharmacy students are placed in a health care setting require a criminal record and/or child abuse registry check. As a result all successful applicants to the Faculty of Pharmacy are now required to provide a self-declaration of a Criminal Record and Child Abuse Registry listing following provisional admission, and subsequently a current, official Criminal Record Search and Child Abuse Registry Check. All documents must be submitted to the Faculty of Pharmacy Dean's Office by the first day of classes. Any applicant on the Child Abuse Registry will be denied admission. A criminal conviction will not necessarily result in denial of admission to the Faculty of Pharmacy. Criminal offences will be reviewed by a sub-committee of the Pharmacy Admissions Committee for the implications of the conviction in view of the professional mandate to protect the public. Failure to disclose any adult criminal record or listing on the Child Abuse Registry will invalidate an application and shall result in automatic expulsion from the Faculty of Pharmacy if the applicant has been admitted. In addition, the Manitoba Pharmaceutical Association requires that all graduates of the Faculty of Pharmacy who wish to obtain a license to practice pharmacy in this province, must disclose information about any conviction for an offence under the Criminal Code (Canada), the Controlled Drugs and Substances Act (Canada), or the Food and Drugs Act (Canada) in order to be considered for eligibility for registration with the Manitoba Pharmaceutical Association. The review process conducted by the Faculty of Pharmacy is independent of the review process conducted by the Manitoba Pharmaceutical Association.

Immunization

All students enrolled in the Faculty of Pharmacy must be immunized against the following diseases: diphtheria/tetanus, polio, rubella, measles, mumps, chickenpox, Mantoux/Tuberculosis and hepatitis B. The influenza vaccination is recommended but not required. Students admitted to first year Pharmacy will be provided with an Immunization package at the time of acceptance into the Faculty. Students have the option to complete their immunizations with their own healthcare provider or participate in the Bannatyne Immune Status Program on campus. Students will be required to complete their Immunization Record Form by the end of their first year. Students will not be able to attend clinical rotations until all immunization requirements are up-to-date. Students are responsible for updating their immunizations as needed. Completion of the immunization schedule is required for course progression in Pharmacy.

SECTION 3: Faculty Academic Regulations

The provisions of the chapter, General Academic Regulations and Requirements, and the chapter, University Policies, apply to all students. In addition, the Faculty of Pharmacy has regulations and requirements, published below, that apply specifically to its students.

3.1 Scholastic Progress

For course progression in the Faculty of Pharmacy students must achieve a minimum combined fall and winter term GPA of 2.0, and attain the minimum passing grade of "C" in each course.

A student in any of the first three years of the pharmacy program who records no more than two grades of "D" during the academic year, and who achieves a minimum combined fall and winter term GPA of 2.00, may at the discretion of the dean be permitted to apply for a supplementary examination in those courses.

A student in the fourth year of the pharmacy program who records no more than one grade of "D" during the academic year, and who achieves a minimum combined fall and winter term GPA of 2.00, may at the discretion of the dean be permitted to apply for a supplementary examination in that course.

Application forms for supplementary examinations are available in the Faculty of Pharmacy Dean's Office, and the examination is subject to a prescribed fee. Supplementary exams will normally take place in the following mid-summer examination session each year.

A student who has failed to record a minimum grade of "C" in more than two courses within years one to three of the pharmacy program, or in more than one course in the fourth year of the pharmacy program, or who records a grade of "F" during the academic year at any stage during their program may not be granted supplementary examinations unless the dean by reason of special circumstances applicable to the student's case otherwise decides.

A candidate who has been allowed to sit for a supplementary examination may not be awarded a grade higher than "C" in that course. Grade calculations for any course following supplementary examination will be inclusive of on-course assessment. Grades achieved following supplementary examination will replace those grades originally recorded on the student's academic record.

A student who fails to achieve a passing grade of "C" in one course, following supplementary examination if that option is offered, and who achieves a minimum combined fall and winter term GPA of 2.00, will be required to repeat that course and may at the discretion of the dean be required to repeat all, or a number of courses in that year.

A student whose combined fall and winter term GPA falls below 2.0, or who fails to achieve a minimum passing grade of "C" in two courses, following supplementary examination if that option is offered, and whose combined fall and winter term GPA remains above 1.75, will be considered to have failed that year, and will be required to repeat all subjects in the following academic year.

The records of all students who fail a year, and the disposition of the cases, shall be reported to Faculty Council for information, but not for debate. Students who have cause to disagree with the disposition may file an appeal against the decision.

A student who fails more than one year in the program, or who fails the same year twice, shall be required to withdraw from the Pharmacy program.

A student who fails to achieve a passing grade in more than two courses in the academic session, or whose combined fall and winter term GPA falls below 1.75, or who fails to achieve a passing grade in a repeated year, will be required to withdraw from the Pharmacy program.

3.2 Appeals Concerning Scholastic Progress

Should a student wish to appeal against any decision concerning scholastic progress, the following procedure should be followed:

The problem should be discussed with the Associate Dean (Academic) of Pharmacy, who will supply information about the appeals procedure, academic regulations and related matters.

Students who still wish to proceed with an appeal should consult the Student Advocate for advice and assistance, and a letter of appeal must be sent to the dean within 21 days of receiving notification of the decision. The letter should state the nature of the decision being appealed and the alternative that is being requested.

The Dean will respond in writing to notify the appellant of the date and time the student should attend a meeting of the Faculty Appeals Committee.

The Appeals Committee will comprise: the Dean of the Faculty (or designate) as chair; one senior support staff member as secretary; three members of the full-time faculty appointed by the full-time faculty; a representative of the profession appointed by the Manitoba Pharmaceutical Association; one student member of Faculty Council appointed by the Faculty Council. The chair and senior support staff member are non-voting members.

Appellants have the right to attend the hearing of their appeal and may have a representative to assist them at the appeal hearing. This representative may be the Student Advocate or a fellow student or other full-time member

of the university community not receiving payment for appearing, or working for Legal Aid. In addition, if the student wishes, one member of his or her immediate family, and also if desired a lawyer, may be present, but as observers who do not participate. The decision of the Appeals Committee will be conveyed to the student as soon as possible after the hearing.

If the appellant is still dissatisfied they may wish to discuss the issue further with the Student Advocate and/or the university Ombudsman. Student appellants should not expect a favourable decision when their appeal is based on grounds related to external factors such as employment, sports, or hobbies.

3.3 Transfer of Credit Earned Elsewhere

Pharmacy students transferring credit from any faculty or school in the University of Manitoba or from other universities or colleges will have each course acceptable for transfer purposes noted on the student record with the course classification of "TR" (transfer). The relevance of courses completed to the student's educational objective at the University of Manitoba and the quality of academic achievement as evidenced by the student's grades will be determining factors in assessing acceptability of credits earned elsewhere. No transfer of credit will be given for courses taken ten years or more prior to application date. No transfer of credit will be permitted for courses where a "D" grade (or its percentage equivalent) has been awarded.

3.4 Residence Requirements

A minimum of two years attendance at the university within the Faculty is required for the Bachelor of Science in Pharmacy, except with the permission of the Faculty.

3.5 Attendance at Class

Regular attendance is required of all students in all courses. Students who are absent from class for a period of three days or more due to illness must present a certificate from a physician to the Dean's Office upon their return. An instructor may initiate procedures to debar a student from attending classes and from final examinations where unexcused absences exceed three continuous sessions. Students must obtain prior approval from the Dean for an absence exceeding one day for reasons other than illness.

3.6 Voluntary Withdrawals

Any student seeking to withdraw from a portion of, or all of their courses must provide written notification to the Dean's Office of the reasons for this request. Re-entry to Pharmacy by students who voluntarily withdraw, will be dependent on the availability of space and external rotation facilities. Any student who has voluntarily withdrawn from a portion of, or all of their courses in Pharmacy on more than one occasion will not be permitted re-entry into the program. Withdrawals for medical or compassionate reasons will not contribute toward this maximum. Students who, for medical reasons, withdraw from the program may not re-register until they have established, through proper medical consultation, their fitness to resume studies.

3.7 Deferred Examinations

Students may file an application for a deferred final examination with the Dean for reasons of illness or other disability, or for compassionate reasons, setting out the reasons for the deferral. The application must be filed within seven working days of the end of the examination series in which the examination was scheduled to be written and must be accompanied by a medical certificate or otherwise appropriate documentation certifying the reason for the deferral, the inability of the student to write the examination at the regular scheduled time and, where possible, indicating the period of disability. Based on the evidence provided, the Dean shall decide whether the application is approved. Students who, for medical reasons receive deferred examination privileges for all final examination series may not re-register until they have established, through proper medical consultation, their fitness to resume studies. Any students requesting a deferred examination on the grounds that they are participating in an inter-university, provincial, inter-provincial, national or international scholastic or athletic event shall be granted said deferral, provided an application is filed with the Dean of the Faculty well in advance (normally 20 working days) of the scheduled examination; and that the Dean is satisfied, based on the evidence provided, that the application should be approved and that an appropriate time, and acceptable invigilator is not otherwise available to the

student. Any student requesting deferred examination(s) will be required to sign an undertaking that the student has not discussed, reviewed, had access to, or otherwise become aware of the contents of the deferred examination except as expressly authorized by the instructor or professor for the course in which the deferred examination is being undertaken.

3.8 Incompletes

A student who is unable to complete the term work prescribed in a course may apply to the instructor prior to the end of lectures for consideration of a grade classification of 'Incomplete.' Should an 'incomplete' be granted the student will still be required to write the final examination, if one is scheduled for the course, and a temporary grade of 'IF' will be submitted. In addition to the grade, the recommendation for an 'incomplete' should indicate the reason(s) for consideration being given, a description of the outstanding work to be completed, and the date by which the work must be submitted. If a final grade is not reported by the above maximum extension deadlines, the letter 'I' will be dropped and the grade of 'F' will remain as awarded, unless where specific circumstances warrant, the Associate Dean (Academic) extends the date by which an Incomplete must be cleared. Instructors must formally request such an extension prior to the elapse of the maximum deadline date. In addition, the Registrar's Office must be notified of the extension.

3.9 Eligibility for Medals, Scholarships, Awards and Prizes

Eligible students who achieve a combined fall and winter sessional GPA of 4.0 or higher will be placed on the Dean's Honour List. Eligible students must have completed a minimum of 12.5 credit hours in each of the fall and winter terms. The Dean's Honour List designation is not applied until the end of the winter term.

3.10 Academic Self-Declaration

All students accepted into the Faculty of Pharmacy will be required to complete a Self-Declaration of Records Form which declares current or previous academic suspensions and expulsions. The disclosure contained therein must be satisfactory to the Faculty of Pharmacy.

3.11 Experiential Training (Structured Practical Experiential Program [SPEP])

Approved Placement Sites are limited, and the University cannot warrant that it will be able to find sufficient suitable placement sites in convenient locations, in a timely manner or at all. Students are responsible for all costs associated with SPEP, including travel and living expenses where placements are outside Winnipeg.

3.12 Academic Honesty

Many courses in the Faculty of Pharmacy require group projects and students should be aware that these are subject to the same rules regarding academic honesty as individual projects. Because of the unique nature of group work, all members of the group should exercise special care to insure that work completed does not violate academic integrity. Should a violation occur, group members will be held jointly accountable unless the violation can be attributed to a specified individual, or group of individuals.

In the Faculty of Pharmacy all suspected cases of academic dishonesty will be passed to the Dean's Office for evaluation.

3.13 Professional Unsuitability By-Law

The Senate has approved a by-law granting authority to the Faculty to require a student to withdraw for reasons of professional unsuitability. Copies of this by-law may be obtained from the Faculty of Pharmacy Dean's Office.

3.14 Completion of the Bachelor Program

The maximum time allowable for completion of the Bachelor of Science, Pharmacy degree is seven years. Students must successfully complete all of the course work associated with a year in the program prior to being allowed to register for courses in the next year. In certain cases, the dean may grant exceptions to this requirement.

SECTION 4: Program and Graduation Requirements

4.1 Student Responsibility

Students are advised to carefully review the Faculty of Pharmacy chapter of the *Undergraduate Calendar* to ensure compliance with degree program requirements.

It is the student's responsibility to know all relevant regulations, policies and practices.

Final completion of degree requirements is the responsibility of the student.

The University of Manitoba Registration System is not a degree audit system and the onus is on students to make sure they are selecting courses appropriate to their academic program.

4.2 Registration Assistance

If you have questions or problems with your registration you can contact the Aurora Student Help Line at (204) 474-9420, or call the Faculty of Pharmacy Dean's Office at (204) 474-9306.

4.3 Course Information by Year

First Year Orientation

A mandatory orientation session will be held on Wednesday, September 8, 2010 for 1st Year Pharmacy Students. More information on the orientation session will be mailed out in August to all 1st year students.

First Year Students

It is important that you register at your initial access time to guarantee that you get space in the required Science courses. All Pharmacy reserved space in Science will only be held until mid August.

When registering for Chemistry & Microbiology please register in the correct lecture & lab sections that have been reserved for Pharmacy Students.

Fall Term classes commence on Thursday, September 9, 2010. Attend all lectures/laboratories scheduled for that day.

The courses in the first year of the program are as follows:

| Course No. | | Credit Hours |
|--------------------|------------------------------------------------------|--------------|
| First Year | | |
| CHEM 2210 | Organic Chemistry | 3 |
| CHEM 2360 | Intermediate Biochemistry | 3 |
| CHEM 2370 | Intermediate Biochemistry | 3 |
| PHRM 1000 | Introduction to Pharmacy | 1 |
| PHRM 1110 | Pharmacy Skills Laboratory (PSL-1) | 3 |
| PHRM 1300 | Fundamentals of Pharmaceutics | 2 |
| PHRM 1430 | Applied Pathophysiology for Pharmacy Students | 3 |
| PHRM 1700 | Structured Practical Experiential Program 1 (SPEP-1) | 1 |
| MBIO 2100 | General Microbiology (or equivalent MBIO 1010) | 3 |
| ANAT 1030 | Human Anatomy | 3 |
| PHGY 1030 | Fundamentals of Medical Physiology | 6 |
| Total credit hours | | 31 |

Second Year Students

It is important that you register at your initial access time to guarantee that you get space in the required Science courses. All Pharmacy reserved space in Science will only be held until mid August.

When registering for Microbiology please register in the correct lecture section that has been reserved for Pharmacy Students.

PHRM 2700 – This course falls under the Spring/Summer session guidelines. The Faculty of Pharmacy Dean's Office will register you for this course in March. Fees for PHRM 2700 will be assessed in March 2011.

Fall Term classes commence on Thursday, September 9, 2010. Attend all lectures/laboratories scheduled for that day.

Second year rotation will take place May 2 – May 13, 2011 with a debriefing session to be held on Monday, May 16, 2011.

The courses in the second year of the program are as follows:

Second Year

| | | |
|--------------------|---------------------------------------------|----|
| PHRM 2100 | Pharmacy Skills Lab 2 (PSL-2) | 3 |
| PHRM 2220 | Medicinal Chemistry 1 | 6 |
| PHRM 2270 | Pharmaceutics/Biopharmaceutics | 6 |
| PHRM 2280 | Pharmacokinetics | 3 |
| PHRM 2310 | Clinical Pharmacy 1 | 4 |
| PHRM 2420 | Applied Nutrition for Health Professionals | 3 |
| PHRM 2700 | Structured Practical Experiential Program 2 | 2 |
| MBIO 3010 | Microbiology | 3 |
| PHAC 2100 | Pharmacology | 6 |
| Total credit hours | | 36 |

Third Year Students

Register at your initial access time.

Fall Term classes commence on Thursday, September 9, 2010. Attend all lectures/laboratories scheduled for that day.

Third year rotation will take place April 4 – April 29, 2011 with a debriefing session to be held on Monday, May 2, 2011.

PHRM 3700 – This course falls under the Spring/Summer session guidelines. The Faculty of Pharmacy Dean's Office will register you for this course in March. Fees for PHRM 3700 will be assessed in March 2011.

The courses in the third year of the program are as follows:

Third year

| | | |
|--------------------|-------------------------------------------------|----|
| PHRM 3100 | Pharmacy Skills Lab 3 (PSL- 3) | 2 |
| PHRM 3210 | Principles of Professional Practice* | 3 |
| PHRM 3220 | Medicinal Chemistry 2 | 3 |
| PHRM 3310 | Clinical Pharmacy 2 | 10 |
| PHRM 3320 | Pharmaceutical Analysis Lab | 3 |
| PHRM 3430 | Natural Products | 3 |
| PHRM 3500 | Clinical Pharmacokinetics | 4 |
| PHRM 3510 | Principles of Scientific Literature Evaluation* | 2 |
| PHRM 3640 | Principles of Biotechnology | 3 |
| PHRM 3700 | Structured Practical Experiential Program 3 | 4 |
| Total credit hours | | 37 |

* **NOTE:** The credit hours for these two courses are under review. Please check the Aurora Student Catalogue after July 1, 2010 for updated information.

Fourth Year Students

Register at your initial access time.

Classes commence on Tuesday, September 7, 2010. Attend all lectures scheduled for that day. Note the following important dates.

| | |
|--------------|-------------------------------------------------------------------------------------------------------------------|
| Classes End: | Monday, November 1, 2010 |
| Exams: | November 2 - November 3, 2010 |
| SPEP: | Block 1 November 8 - December 17, Block 2 January 4 – February 11, 2011 Block 3 February 21 – April 1, 2011 |
| Electives: | Block 1 November 4 - December 22, Block 2 January 3 – February 18, 2011 Block 3 February 21 – April 8, 2011 |

The courses in the fourth year of the program are as follows:

Fourth Year

| | | |
|---------------------------------------|------------------------------|------|
| PHRM 4230 | Pharmacy Practice Management | 4 |
| PHRM 4310 | Clinical Pharmacy 3 | 4 |
| PHRM 4450 | Toxicology | 3 |
| PHRM 4470 | Current Topics | 3 |
| PHRM 4700 | SPEP - 4 | 10 |
| PHRM 4800 | Electives Program | 10 |
| Total Credit Hours | | 34 |
| Total credit hours in all four years: | | *138 |

NOTES:

*The total credit hours for this program are under review. Please check the Aurora Student Catalogue after July 1, 2010 for updated information.

Students may not obtain any grade lower than "C" in all required courses.

A decision will be made annually on whether these courses will be taught in first or second term, or both.

SECTION 5: Course Descriptions

PHRM 1000 Introduction to Pharmacy Cr.Hrs.1 (Formerly 046.100) This course provides an orientation to Pharmacy and to the application of medicines within the context of today's dynamic medical care system. It has been designed to highlight professionalism early in the Pharmacy curriculum and will provide the opportunity for students to interact with Pharmacy professionals "at the cutting edge" of pharmacy practice.

PHRM 1110 Pharmacy Skills Laboratory Cr.Hrs.3 This is a multifaceted course using an integrated skills laboratory format to develop essential skills that students require for pharmacy practice. These skills primarily involve communication, problem solving and critical thinking that form the foundation for life-long learning. Exploring ethical principles and professionalism are also essential components of this course.

PHRM 1300 Fundamentals of Pharmaceutics Cr.Hrs.2 (Formerly 046.130) In a classroom and laboratory setting, this course provides an introduction to the compounding of pharmaceutical products and the physicochemical basis of product formulation. Practical aspects of formulation and an introduction to the dispensing function are also explored.

PHRM 1430 Applied Pathophysiology for Pharmacy Students Cr.Hrs.3 (Formerly 046.143) A comprehensive theoretical foundation of the phenomena that produce alterations in human physiology function across the lifespan. Course content will prepare the student for subsequent courses related to diagnosis and management of disease processes associated with pathophysiological dysfunction/alterations.

PHRM 1700 Structured Practical Experiential Program 1 Cr.Hrs.1 (Formerly 046.170) This course is a service-learning experience, providing students the opportunity to work in community-based patient/client-centred settings. This course also includes two half day job shadowing experiential rotations in a variety of pharmacy practice settings (eg. community pharmacy practice, institutional pharmacy practice) under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. It serves to familiarize students with the health care setting and the pharmacist's role. Students will be graded on a pass/fail basis.

PHRM 2100 Pharmacy Skills Lab 2 Cr.Hrs.3 (Formerly 046.210) This course develops essential skills required for pharmacy practice. Focus is on drug distribution, pharmacy law, communication with "standardized patients" and drug information.

PHRM 2220 Medicinal Chemistry 1 Cr.Hrs.6 (Formerly 046.222) This course explores the physicochemical aspects of drug structure in absorption, distribution, metabolism, excretion and receptor interaction as they relate to the biochemical, pharmacological, and therapeutics actions of medicinal compounds.

PHRM 2270 Pharmaceutics/Biopharmaceutics Cr.Hrs.6 (Formerly 046.227) This course introduces principles of formulation and good pharmaceutical manufacturing practice, including aspects of product development and assessment, stability testing, and quality control. It also explores the application of dosage forms to clinical situations.

PHRM 2280 Pharmacokinetics Cr.Hrs.3 (Formerly 046.228) This course introduces principles of pharmacokinetics to predict how drugs will be absorbed, distributed, metabolized and excreted from the body. Practical application of concepts and calculations will be emphasized.

PHRM 2310 Clinical Pharmacy 1 Cr.Hrs.4 (Formerly 046.231) This course introduces principles of drug therapy to manage uncomplicated disease states. Aspects of drug therapy including efficacy, dosage requirements, adverse effects, compliance, drug interactions, and follow-up monitoring will be emphasized. The course also introduces principles of using "over the counter (OTC)" medications as therapeutic alternatives.

PHRM 2420 Applied Nutrition for Health Care Professionals Cr.Hrs.3 (Formerly 046.242) The application of the scientific principles underlying nutrient function and dietary requirements to questions of health.

PHRM 2700 Structured Practical Experiential Program 2 Cr.Hrs.2 (Formerly 046.270) This course offers experiential learning in a variety of pharmacy practice settings (eg. community pharmacy practice, institutional pharmacy practice) It consists of 2 one week rotations at the end of the second year of the program. This course builds on skills learned in SPEP 1 and focuses on the practice of drug preparation and distribution, non-prescription medication counseling, and jurisprudent under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. Students will be graded on a pass/fail basis.

PHRM 3100 Pharmacy Skills Lab 3 Cr.Hrs.2 (Formerly 046.310) The course develops essential skills required for pharmacy practice. The focus is on interaction with patients and other health care professionals and the application of essential knowledge, skills and values required for the provision of pharmaceutical care.

PHRM 3210 Principles of Professional Practice Cr.Hrs.3 (Formerly 046.321) This course offers the opportunity to explore professionalism, ethics and socio-economic aspects of the health care system.

PHRM 3220 Medicinal Chemistry 2 Cr.Hrs.3 (Formerly 046.322) This course builds on Medicinal Chemistry 1, exploring the detailed interactions between drugs and their receptors which give rise to specific biochemical and therapeutic responses.

PHRM 3310 Clinical Pharmacy 2 Cr.Hrs.10 (Formerly 046.331) This course builds on principles of drug therapy introduced in Clinical Pharmacy 1. Aspects of providing direct patient care are emphasized to identify, solve and prevent actual or potential drug-related problems. The course also expands knowledge of "Over the Counter (OTC)" medications as therapeutic alternatives and introduces home diagnostic testing.

PHRM 3320 Pharmaceutical Analysis Lab Cr.Hrs.3 (Formerly 046.332) This course offers the opportunity to prepare pharmaceutical dosage forms and perform analytical testing on the products. Qualitative and quantitative instrumental assay techniques are introduced.

PHRM 3430 Natural Products Cr.Hrs.3 (Formerly 046.343) Medicinal products of natural origin; introduction to systems of complementary medicine. Therapeutic aspects and products are emphasized.

PHRM 3500 Clinical Pharmacokinetics Cr.Hrs.4 (Formerly 046.350) This course explores the practical application of pharmacokinetic concepts, calculations, and patient factors which effect pharmacokinetics in the clinical setting. Emphasis is on selected medications that require closer monitoring to ensure efficacy and patient safety.

PHRM 3510 Principles of Scientific Literature Evaluation Cr.Hrs.2 (Formerly 046.351) Primary literature is critically analyzed. Discussion of how study results impact on treatment strategies are emphasized.

PHRM 3640 Principles of Biotechnology Cr.Hrs.3 (Formerly 046.364) Introduction of biotechnology in pharmaceutical science and pharmacy. Students will be introduced to concepts from molecular biology, immunology, biotechnology and pharmacogenomics.

PHRM 3700 Structural Practical Experiential Program 3 Cr.Hrs.4 (Formerly 046.370) This course offers experiential learning in a variety of pharmacy practice settings (e.g. community pharmacy practice, institutional pharmacy practice) It consists of 2 two week rotations at the end of the third year of the program. This course builds on skills learned in SPEP 1 and SPEP 2 and focuses on the introduction of applying pharmaceutical care to patients under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. Students will be graded on a pass/fail basis.

PHRM 4230 Pharmacy Practice Management Cr.Hrs.4 (Formerly 046.460) An Introduction to administrative and behavioural sciences as they relate to planning, organization and operation of pharmacy practice and to the control of human and financial resources.

PHRM 4310 Clinical Pharmacy 3 Cr.Hrs.4 (Formerly 046.444) A problem-based therapeutics course that builds on PHRM 3310. The emphasis is on the provision of pharmaceutical care to enhance students' ability to identify, resolve and prevent drug-related problems in given clinical scenarios.

PHRM 4450 Toxicology Cr.Hrs.3 (Formerly 046.445) Toxicology of prescription and non-prescription medications and drugs of abuse. The emphasis is on the study of emergency treatments of the overdosed patient. Forensic aspects of common poisonings and drug overdoses are also discussed.

PHRM 4470 Current Topics Cr.Hrs.3 (Formerly 046.447) A discussion of topics of immediate interest to the profession. Subject to satisfactory completion of required projects and presentations. Attendance of 80% is mandatory. Students will be graded pass/fail.

PHRM 4700 Structural Practical Experiential Program 4 Cr.Hrs.10 (Formerly 046.461) This course offers experiential learning in a variety of pharmacy practice settings (e.g. community pharmacy practice, institutional pharmacy practice) It consists of 2 six week rotations. This course builds on skills learned in SPEP 1, SPEP 2 and SPEP 3 and focuses on practicing advanced pharmaceutical care and further developing therapeutic and disease knowledge under the supervision of pharmacist preceptors consistent with the Manitoba Pharmacy Act. Students will be graded on a pass/fail basis.

PHRM 4800 Cr.Hrs.10 This program offers students the opportunity to explore areas in research and professional practice that are not part of the required undergraduate courses. Students have the option of applying to conduct projects at sites pre-approved by the Faculty or to propose alternative avenues for self-directed learning. All project proposals need to obtain final approval from the Faculty of Pharmacy which facilitates students' placement. Assessment will be based on written reports submitted by individual students to the Faculty of Pharmacy. Students will be graded on a pass/fail basis.