



# Advanced Patient Care Skills and Health Assessment

University of Alberta  
Calendar 2016-2017

## PHARM 502 - Advanced Patient Care Skills and Health Assessment

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★ 3 (*fi* 6) (first term, 3-0-1.5) Features health assessment, the patient care process, care planning, and documentation as fundamental elements of a framework for patient-centred care. Incorporates lab-based simulations and assignments to provide students with the opportunity to acquire the knowledge and skills required for practice. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.)

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# Advanced Pharmacotherapy

# University of Alberta Calendar 2016-2017

## PHARM 503 - Advanced Pharmacotherapy

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★ 6 (*fi 12*) (first term, 6-1s-0) Explores selected pharmacotherapy topics and provides an opportunity for students to integrate knowledge and skills. Topics will be explored using the primary literature to critically evaluate emerging controversies and therapeutic dilemmas and addresses advanced skills and knowledge required for monitoring outcomes of drug therapy including interpreting drug levels and adjusting therapy. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students or with Faculty consent.) Pre or corequisites: PHARM 501 and 502, or consent of the Faculty.

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# **Frameworks for Teams, Collaboration and Education in Pharmacy Practice**

## **University of Alberta Calendar 2016-2017**

### **PHARM 504 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice**

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★ 3 (*fi* 6) (first term, 3-0-0) Provides students with the theoretical foundations to prepare them for practice in an interprofessional team environment and the preparation of and ongoing learning of professionals, and education of patients and groups of patients. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.)

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# PharmD Seminars University of Alberta Calendar 2016-2017

## PHARM 505 - PharmD Seminars

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★ 1-3 (*variable*) (variable, variable) This capping course is designed to evaluate students' ability to integrate knowledge and skills in pharmacy practice. Provides a forum throughout the program for students to integrate experience gained through coursework with experiential learning. A conference style presentation, poster, paper and professional portfolio are required. Course may be repeated. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.)

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# PharmD Experiential Learning Part 1

University of Alberta Calendar  
2016-2017

## PHARM 511 - PharmD Experiential Learning Part 1

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★ 6 (*fi 12*) (either term or Spring/Summer, 240 Hours in 6 Weeks) The PharmD student will be expected to demonstrate professional competencies in the provision of patient care. Direct patient care activities will include health assessment, therapeutic drug monitoring, provision of drug information, and contributing to patient care as part of an interprofessional team. Prerequisites: PHARM 501, 502, 503, 504 or with Faculty consent. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students.)

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# PharmD Experiential Learning Part 2

University of Alberta Calendar  
2016-2017

## PHARM 512 - PharmD Experiential Learning Part 2

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★ 6 (*fi 12*) (either term or Spring/Summer, 240 Hours in 6 Weeks) The PharmD student will be expected to demonstrate professional competencies in the provision of patient care. Direct patient care activities will include health assessment, therapeutic drug monitoring, provision of drug information, and contributing to patient care in an acute care setting. Prerequisites: PHARM 501, 502, 503, 504 or with Faculty consent. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students.)

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# PharmD Experiential Learning Part 3

University of Alberta Calendar  
2016-2017

## PHARM 513 - PharmD Experiential Learning Part 3

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★ 6 (*fi 12*) (either term or Spring/Summer, 240 Hours in 6 Weeks) The PharmD student will be expected to demonstrate professional competencies in the provision of patient care. Direct patient care activities will include health assessment, therapeutic drug monitoring, provision of drug information, and contributing to patient care in an ambulatory or community practice setting. Prerequisites: PHARM 501, 502, 503, 504 or with Faculty consent. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students.)

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# PharmD Elective Rotation

# University of Alberta Calendar 2016- 2017

## PHARM 514 - PharmD Elective Rotation

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★ 6 (*fi 12*) (either term or Spring/Summer, 240 Hours in 6 Weeks) The PharmD student will complete an experiential learning rotation in a patient-care practice setting as outlined in PHARM 511, 512 or 513. Credit may be obtained more than once. Prerequisites: PHARM 501, 502, 503, 504 or with Faculty consent. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students.)

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# PharmD Specialty Elective Rotation

University of Alberta Calendar  
2016-2017

## PHARM 515 - PharmD Specialty Elective Rotation

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★ 6 (*fi 12*) (either term or Spring/Summer, 240 hours) PharmD students are required to design and complete a practice-based rotation including objectives, activities and an evaluation mechanism. The proposal is subject to approval by the preceptor and the Director of the PharmD Program. Travel and accommodation costs are the responsibility of the student. Credit may be obtained more than once. Prerequisites: PHARM 501, 502, 503, 504 or with Faculty consent. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students.)

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# Advanced Patient Care Skills and Health Assessment

University of Alberta  
Calendar 2016-2017

## PHARM 522 - Advanced Patient Care Skills and Health Assessment

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★ 3 (*fi* 6) (variable, variable) Features health assessment, the patient care process, care planning, and documentation as fundamental elements of a framework for patient-centred care. Incorporates lab-based simulations and assignments to provide students with the opportunity to acquire the knowledge and skills required for practice. This distance learning course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.)

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# Advanced Pharmacotherapy      University of Alberta Calendar

## - Part 1      2016-2017

### **PHARM 523 - Advanced Pharmacotherapy - Part 1**

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★ 3 (*fi* 6) (variable, variable) Explores selected pharmacotherapy topics and provides an opportunity for students to integrate knowledge and skills. Topics will be explored using the primary literature to critically evaluate emerging controversies and therapeutic dilemmas and addresses advanced skills and knowledge required for monitoring outcomes of drug therapy including interpreting drug levels and adjusting therapy. This distance learning course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students or with Faculty consent.) Prerequisites: PHARM 521 and 522, or consent of the Faculty. Corequisites: PHARM 524.

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# **Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 1**

**University of  
Alberta Calendar  
2016-2017**

## **PHARM 524 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 1**

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★ 1 (*fi 2*) (variable, variable) Provides students with the theoretical foundations to prepare them for collaborative practice in an interprofessional team environment. This distance learning course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent. Corequisites: PHARM 523.

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# PharmD Seminars - University of Alberta Calendar 2016- Part 1 2017

## PHARM 525 - PharmD Seminars - Part 1

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★ 1 (*fi 2*) (Spring/Summer, variable) This capping course is designed to evaluate students' ability to integrate knowledge and skills in pharmacy practice. Provides a forum for students to integrate experience gained through coursework taken to date with their professional practice. Sections offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.)

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# Advanced Pharmacotherapy      University of Alberta Calendar

## - Part 2      2016-2017

### **PHARM 533 - Advanced Pharmacotherapy - Part 2**

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★ 3 (*fi* 6) (variable, variable) Explores selected pharmacotherapy topics and provides an opportunity for students to integrate knowledge and skills. Topics will be explored using the primary literature to critically evaluate emerging controversies and therapeutic dilemmas and addresses advanced skills and knowledge required for monitoring outcomes of drug therapy including interpreting drug levels and adjusting therapy. This distance learning course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD students or with Faculty consent.) Prerequisites: PHARM 523, or consent of the Faculty. Corequisites: PHARM 534.

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# **Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 2**

**University of  
Alberta Calendar  
2016-2017**

## **PHARM 534 - Frameworks for Teams, Collaboration and Education in Pharmacy Practice - Part 2**

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★ 1 (*fi 2*) (variable, variable) Provides students with the theoretical foundations to prepare them for collaborative practice in an interprofessional team environment. This distance learning course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent. Corequisites: PHARM 533.)

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# PharmD Seminars - University of Alberta Calendar 2016- Part 2 2017

## PHARM 535 - PharmD Seminars - Part 2

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★ 1 (*fi 2*) (variable, variable) This capping course is designed to evaluate students' ability to integrate knowledge and skills in pharmacy practice. Provides a forum for students to integrate experience gained through coursework with their professional practice and experiential learning. This distance learning course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.) Corequisites: PHARM 511 or 512 or 513 or 514 or 515.

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**Frameworks for Teams, Collaboration  
and Education in Pharmacy Practice -  
Part 3**

**University of  
Alberta Calendar  
2016-2017**

**PHARM 544 - Frameworks for Teams, Collaboration and  
Education in Pharmacy Practice - Part 3**

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★ 1 (*fi 2*) (Spring/Summer, variable) Provides students with the theoretical foundations to prepare ongoing learning of professionals, and education of patients and groups of patients. This course is offered in a Cost Recovery format at an increased rate of fee assessment; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. (Restricted to PharmD Students or with Faculty consent.)

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# Toxicology of Pharmaceutical Agents and Related Xenobiotics

University of Alberta  
Calendar 2016-2017

## PHARM 564 - Toxicology of Pharmaceutical Agents and Related Xenobiotics

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★ 3 (*fi* 6) (either term, 3-1s-0) Biochemical and molecular mechanisms of drug-induced damage. Key concepts include toxicological principles, toxicokinetics, toxic responses, bioactivation of drugs to toxic metabolites, organ directed toxicity, immunotoxicology, and receptor-mediated toxicity. Specialized topics include clinical and medical toxicology, forensic toxicology, pharmacoepidemiology related to drug toxicity, safety assessment of pharmaceutical agents, and environmental toxicology. Prerequisite: Consent of Faculty.

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# Cellular Aspects of Drug Delivery and Targets

University of Alberta  
Calendar 2016-2017

## PHARM 566 - Cellular Aspects of Drug Delivery and Targets

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★ 3 (*fi* 6) (either term, 3-1s-0) The goals of this course are to discuss fundamental topics in cell and molecular biology and introduce students to important concepts in cellular structure and function as they relate to the design and development of novel drugs. Drug targets for macromolecules, including vaccines, proteins and genetic material will be emphasized. Prerequisite: Consent of Faculty.

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# Advanced Pharmaceutical Analysis - Spectroscopy

University of Alberta  
Calendar 2016-2017

## PHARM 570 - Advanced Pharmaceutical Analysis - Spectroscopy

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★ 3 (*fi* 6) (either term, 3-0-3) Applications of instrumental methods of analysis (ultraviolet and infrared spectroscopy; NMR; mass spectrometry; atomic absorption spectroscopy) to pharmaceutical compounds. Offered in odd-numbered years. Prerequisite: Consent of Faculty.

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# Analytical Techniques in Pharmaceutical Sciences

University of Alberta  
Calendar 2016-2017

## **PHARM 573 - Analytical Techniques in Pharmaceutical Sciences**

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★ 3 (*fi* 6) (either term, 3-0-3) The course emphasizes the key skills required to study and explore recent trends in pharmaceutical analysis and the latest analytical technologies. The core analytical techniques such as chromatography, LC-MS, ELISA, and, electrophoresis will be discussed in detail along with hands-on experience during laboratory sessions. Prerequisite: PHARM 570 or consent of the Faculty. Offered alternate years.

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# Introduction to Computer- Aided Drug Design

University of Alberta  
Calendar 2016-2017

## PHARM 580 - Introduction to Computer-Aided Drug Design

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★ 3 (*fi* 6) (either term, 3-0-2) An introductory course designed to provide students with the background and a hands-on understanding of techniques involved in computer-aided drug design, including bioinformatics, molecular modelling, molecular simulation, docking and QSAR. Prerequisite: consent of the Faculty.

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# Pharmacy in Neoplastic Disease

University of Alberta Calendar  
2016-2017

## PHARM 589 - Pharmacy in Neoplastic Disease

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★ 3 (*fi* 6) (either term, 3-0-0) Description of neoplastic disease, its prevalence and drug treatment with an emphasis on patient management. There is an emphasis on the pharmacists' role in preparing chemotherapy medication, minimizing toxic effects of cancer drugs, dosage considerations, concomitant use of medication for other diseases and psychosocial aspects of care. Students will also learn about newer forms of treatments and changes in the provision of treatment services. Restricted to Pharmacy graduate students.

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**Advanced  
Radiopharmaceutical Sciences  
II**

**University of Alberta  
Calendar 2016-2017**

**PHARM 593 - Advanced Radiopharmaceutical Sciences II**

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★ 3 (*fi* 6) (first term, 3-0-4) Application of radionuclides in medical diagnosis and treatment; control of radionuclides in the hospital. Laboratory: preparation, quality control and clinical utility of currently used radiopharmaceuticals in nuclear medicine. Prerequisite: PHARM 601 or consent of Faculty.

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# Clinical Rotations University of Alberta Calendar 2016-2017

## PHARM 595 - Clinical Rotations

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★ 6 (*fi 12*) (two term) A clinical experience which will provide the student with the opportunity to practice clinical pharmacy in several speciality areas. The student will be expected to demonstrate professional competence in patient counselling, obtaining medication histories, providing drug information, applied pharmacokinetics and related areas. Credit will be granted after the completion of 900 hours of approved clinical training.

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# Pharmaceutical Marketing

# University of Alberta Calendar 2016- 2017

## PHARM 596 - Pharmaceutical Marketing

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★ 3 (*fi* 6) (first term, 3-0-0) An examination of the process of marketing pharmaceuticals in Canada. Topics to be covered are: pre-marketing requirements, regulatory control over drugs, price and product competition, promotion and advertising of pharmaceuticals, channels of distribution, packaging, ethics, price, and group purchasing. The course stresses the unique factors to be considered in marketing pharmaceuticals. Prerequisite: PHARM 372.

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# Isotope Tracer Methodology I

University of Alberta Calendar  
2016-2017

## PHARM 601 - Isotope Tracer Methodology I

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★ 3 (*fi* 6) (first term, 3-0-3) Fundamental principles of radioactivity and health physics. The importance of radioisotopes in medicine, agriculture, industry, and research. Problems and limitations in the use of radioisotopes as tracers. Instrumentation and analysis methods. Experimental procedures, application of methods of analysis and criteria for evaluation of results. Laboratory: handling and preparation of radioisotopes for counting. Counting procedures. Tracer chemical and biochemical analyses.

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# Current Topics in Bionucleonics and Radiopharmacy

University of Alberta  
Calendar 2016-2017

## PHARM 606 - Current Topics in Bionucleonics and Radiopharmacy

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★ 3 (*fi* 6) (either term, 3-0-0) Assigned readings, tutorials and seminars in recent advances in the fields of bionucleonics and radiopharmacy, conducted under the direction of several faculty members. Prerequisites: PHARM 601, 603, 604 or consent of Faculty.

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# Advanced Drug Delivery Systems

University of Alberta Calendar  
2016-2017

## PHARM 610 - Advanced Drug Delivery Systems

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★ 3 (*fi* 6) (either term, 3-0-0) The focus of this course is on the design and development of novel delivery systems for various treatment and diagnostic applications. A particular attention will be paid to the physicochemical principles behind the development of different drug delivery systems, their biological application and significance. Emphasis is given to polymer based systems and assembled nano-carriers for the delivery of therapeutic drugs, proteins, vaccines and genes. Prerequisite: Consent of Faculty.

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# Pharmaceutical Formulation and Development

University of Alberta  
Calendar 2016-2017

## PHARM 611 - Pharmaceutical Formulation and Development

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★ 3 (*fi* 6) (either term, 0-3s-2) Theoretical considerations basic to the technology of pharmaceutical dosage forms to meet the requirements of therapeutic efficacy, stability, and safety. Laboratory: development and formulation of pharmaceutical products. Prerequisite: consent of Faculty.

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# Advanced Pharmacokinetics

University of Alberta Calendar  
2016-2017

## PHARM 615 - Advanced Pharmacokinetics

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★ 3 (*fi* 6) (either term, 3-0-0) This course deals with the theoretical aspects of pharmacokinetics. Compartmental and non-compartmental theories are treated in depth. The application of these theories is made in various areas where kinetics are involved. Prerequisite: PHARM 351 or equivalent or consent of Faculty. Note: Offered alternate years.

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**Application of Nuclear Magnetic Resonance  
Spectroscopy to Medicinal and  
Pharmaceutical Chemistry**

**University of  
Alberta Calendar  
2016-2017**

**PHARM 624 - Application of Nuclear Magnetic Resonance  
Spectroscopy to Medicinal and Pharmaceutical Chemistry**

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★ 3 (*fi* 6) (either term, 3-0-0) Basic interpretation and examples of use of NMR spectroscopy in problems of pharmaceutical synthesis and its studies of the mode of action of medicinally active compounds. Prerequisite: consent of Faculty. Note: Offered alternate years.

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# The Metabolism and Excretion of Drugs

University of Alberta Calendar  
2016-2017

## PHARM 630 - The Metabolism and Excretion of Drugs

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★ 3 (*fi* 6) (either term, 3-0-0) The chemistry, biochemistry and kinetics of drug metabolism together with the factors affecting metabolism; the practical aspects of in vitro and in vivo studies of drug metabolism; the excretion of drugs by various routes and factors affecting excretion, the kinetics of excretion. Note: Offered alternate years.

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# Advanced Seminar in Pharmacy and Pharmaceutical Sciences

University of Alberta  
Calendar 2016-2017

## PHARM 690 - Advanced Seminar in Pharmacy and Pharmaceutical Sciences

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★ 3 (*fi* 6) (either term, 3-0-0) Assigned readings, tutorials, and seminars on recent advances and methodological approaches in Pharmacy, conducted under the direction of academic staff members in the Faculty of Pharmacy and Pharmaceutical Sciences.

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# Directed Project      University of Alberta Calendar 2016-2017

## PHARM 694 - Directed Project

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★ 3 (*fi* 6) (either term, 0-0-3) Directed studies in pharmaceutical research, using one or more techniques of special interest to individual students. Prerequisites: consent of the Faculty and the supervising faculty member.

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# Graduate Seminar University of Alberta Calendar 2016-2017

## PHARM 697 - Graduate Seminar

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★ 0 (*fi 1*) (two term, 0-1s-0) Seminar training and short seminar presentations on topics related to the student's field of research. Normally, the seminar will be presented during the student's second or third term. Required of all MSc and PhD students.

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**Directed Research  
Project**

**University of Alberta Calendar 2016-  
2017**

**PHARM 900 - Directed Research Project**

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★ 6 (*fi 12*) (variable, unassigned)

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