ACP 508, Advanced Pharmacology

3 credits, one 3-hour classes per week

Course Description

The Advanced Pharmacology course will and principles of Prehospital teach paramedic students advanced concepts and principles of Prehospital drug administration. The student will come to realize the importance of pharmacology and drug therapy as a complex role that sets the advanced life support (ALS) provider.

The paramedic is always reassessing the patient in order to see if interventions are appropriate. The paramedic student will find that the cardiovascular and respiratory systems are always a priority in any patient care. The paramedic student will need to be aggressive in locating and treating the current medical or traumatic condition as they present anywhere, anytime and to any patient.

The Advanced Pharmacology course encompasses knowledge of drug actions, interactions, administration routes, and specific dosages applied to medical and traumatic situations. It will be up to the practitioner to decide if a certain medication is warranted and if the benefits outweigh the negative side effects.

The student will complete most activities through individual and group interaction, which will demonstrate the importance of teamwork. While working within groups the student will learn to create and evaluate algorithms. The algorithms will be designed to treat specific illnesses and injuries that can be used in the prehospital care industry.

Pre-requisites: ACP 501, ACP 502, ACP 503, ACP 505, ACP 507, ACP 516, ACP 509, and ACP 518

Co-requisites: ACP 506, ACP 510, and ACP 517

Instructors

Adam Hiscock ACP

Office: BL253

Instructor contact information:

Available via zoom, Microsoft teams, and email.

Email: adam.hiscock@keyano.ca

Office Hours

Weekdays from 0830 - 1630

Hours of Instruction

45

Required Resources

Lehne, R. A. (2019). *Pharmacology for nursing care* (10th ed.). Elsevier/Saunders.

Caroline, N. (2021). *Nancy Caroline's emergency care in the streets* (8th ed.). Jones & Bartlett Learning.

Course Outcomes

Upon completion of the Advanced Pharmacology course the ACP student will:

- Value the role of medication administration in providing advanced life support in the prehospital care setting.
- Be responsive and organized in their approach when in charge of medication administration in an advanced life support service.
- Use effective analytical skills in assessing drug therapy intervention options while maintaining a *'do no harm'* philosophy and assessing the '**5 rights of patient medication administration**' in all medication administration.
- Compare and analyze the routes and absorption rates of all emergency medications used in the when providing advanced life support.
- Analyze and apply pharmacology administration knowledge to treat all acute illnesses or injuries for all body systems.
- Be confident in treating toxicology and behavioral emergencies with the appropriate pharmacology as required.
- Provide accurate and precise drug calculations for any medication calculation on any occasion.
- Understand the ACP scope of practice, importance of updating pharmacology knowledge using evidence based practice and standard of care throughout your career.

Evaluation

- Students must achieve a minimum of **76%** (letter grade B) for total course grade to progress. See grading system for reference.
- Midterm and Final Exams require <u>mandatory attendance</u>. Absences will require approval
- Absence from exams and quizzes require informing the instructor prior to class and will be handled based on Policies and Procedures for Keyano College: https://www.keyano.ca/en/about-us/policies-and-procedures.aspx

Evaluation	Grade weight
Module Group Learning Activities • 10% content • 5% participation	15%
Thrombolytic Essay	10%
RSI Research Project	10%
Case studies (2) • 10% each	20%
Midterm Exam • Multiple choice (75 questions)	20%
Final Exam • Multiple choice (100 questions)	25%
Total Course Grade	**100%**

* Multiple-choice exam designed to introduce the student to the Alberta College of Paramedics' style of written examinations

Grading System

Descriptor	Alpha Scale	4.0 Numeric Scale	Percentage
Excellent	A+ A A-	4.0 4.0 3.7	96-100 90-95 85-89
Good	B+ B B-	3.3 3.0 2.7	80-84 76-79 72-75
Satisfactory	C+ C C-	2.3 2.0 1.7	68-71 64-67 60-63
Poor Minimum Pass	D+ D	1.3 1.0	55-59 50-54
Failure	F	0	0-49

Module Group Learning Activities

The content portion of this mark will be based on the group work completed. The participation mark will be evaluated on an individual student basis. It will be based on the instructor's perception of your participation in classroom discussions and group work. The instructor will be looking for evidence that you are 'participating' in the course learning activities.

Thrombolytic Protocol/Essay

This essay assignment is outlined as part of Module Three. This is a group assignment. The instructor will assign groups.

The students are expected to research and design a thrombolytic therapy protocol that meets the needs of Prehospital and in hospital care for the acute myocardial infarction patient. List the sequential steps that are required to administering thrombolytics.

The essay will describe the benefits and detrimental effects of the current thrombolytics on today's market. Describe the importance of administering the thrombolytic in a short time from the first onset of symptoms. Please show and describe the essential important lab, diagnostic measures, and follow-up and surgical consultation criteria requirements. This assignment requires a minimum of 3 references listed and attached with the final submission. Students are expected to use APA format. The APA format guidelines are provided on-line.

Rapid Sequence Induction (RSI) Research Project

This group project is outlined as part of Module Twelve. The instructor will assign groups. Students will work collaboratively to research and design a RSI Protocol that meets the needs of Prehospital and in hospital care.

The format for presentation of this project is open to the creativity of the group. Goups will be expected to list a minimum of 3 references and attach/link research articles or studies where applicable. Projects will be graded and then posted for the group to review.

Two Case Study Essays (Worth 10% each)

This is an essay assignment. The details of this assignment are outlined in Module Thirteen. Students are encouraged to read these well ahead of time in order to plan and research their approach to the case studies.

The length of these essays should be 1000-2000 words. Students are expected to use APA format. The APA format guidelines are provided on-line.

Learning Activities

Required Readings

Students are to read the identified readings for each Module and relate the content to the learning objectives and activities.

Optional Reading:

Students are encouraged to research the topics in the Modules, and seek other references, to expand their current knowledge.

Module Group Learning Activities

All group submissions will be organized and formatted for publication. Once the instructor has verified information for accuracy, the information posted to all student groups. It is suggested that each group assign a leader to observe the workload and to verify that assignments are completed by the due date. The quality of student work will allow the assignments to be a useable reference in the clinical setting. The intent is to develop the student's ability to research and validate current medical protocols.

Creating an Algorithm

The Advanced Pharmacology course will use algorithms as a training tool. The students will be responsible for the creation and evaluation of multiple algorithms throughout this course.

An algorithm is designed to give patient-care providers a direction to go when treating specific illnesses or injuries. It is important to remember that as the patient's condition changes, so does the algorithm. For example, one specific algorithm may be used when starting on scene treatment of a patient found asystole. If at anytime the patient converts to ventricular fibrillation, the algorithm will need to change to the ventricular fibrillation algorithm.

An algorithm can summarize all available options to avoid confusion and is a great approach to some patient care; however, an educated practitioner must also understand the importance of critical thinking when treating the sick and injured. Critical thinking will prevent tunnel vision and will assist in those situations where variables require the practitioner to move away from the recommended path.

Performance Requirements and Student Services

Student Responsibilities

As a student, it is your responsibility to contact the Office of the Registrar to complete the required forms, including the Withdraw Course or Program or a Change of Registration form. Please refer to the important dates listed in the Academic Schedule in the Keyano College credit calendar. The Keyano College credit calendar also has information about Student Rights and the Code of Conduct. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and the Code of Conduct Policies.

Student Attendance

Class attendance is helpful for two reasons: First, class attendance maximizes a student's learning experience. Second, attending class is an excellent way to keep informed of matters relating to the course administration (e.g., the timing of assignments and exams). Ultimately, you are responsible for your learning and performance in this course. It is the responsibility of each student to be prepared for all classes. Absent students are responsible for the material covered in those classes, and students must ensure they are ready for their next class, including completing any missed assignments and notes.

Academic Misconduct

Students are considered responsible adults and should adhere to the principles of intellectual integrity. Intellectual dishonesty takes many forms:

- Plagiarism or the submission of another person's work as their own,
- The use of unauthorized aids in assignments or examinations (cheating),
- Collusion or the unauthorized collaboration with others in preparing work,
- The deliberate misrepresentation of qualifications,
- The willful distortion of results or data,
- Substitution in an examination by another person,
- Submitting unchanged work for another assignment, and
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Code of Conduct Policies. To ensure your understanding of plagiarism, you may be required to complete the online Understanding Plagiarism tutorial and submit the certificate of completion.

Online Learning

Technology and internet connectivity will impact your online learning experience. You may be required to watch online videos, take online quizzes, or participate in live online classes. Live/virtual courses will be hosted in Microsoft Teams or Zoom. For all course delivery types, you will access your course resources on Keyano's learning management system: Moodle (iLearn). Login in using your Keyano username and password. Keyano College operates in a Windows-based environment and having access to the correct tools for online learning is essential. Here's a list of recommended system requirements.

Internet Speed

Minimum download and upload speeds of 10 Mbps. Recommended download speeds of 25 Mbps and upload speeds of 10 Mbps (if you are sharing your internet at home). You can check your internet speed with Speedtest by Ookla.

Computer System Requirements

Microsoft Windows	Apple (Mac)

Minimum Requirements:
 	
1. Windows 10 Operating System or above
 	
2. 4GB of RAM
 	
3. 10GB available hard drive storage space
 	
   a. Install the Microsoft Office 365 suite (~3GB) *
 	
4. Microphone, webcam, and speakers (All modern laptops have these three accessories built-in.)
 	
5. Windows has built-in anti-virus/malware software. It is essential to install system updates to keep your device secured regularly.
 	
*[Microsoft Office 365](#) is free to Keyano students.
	Minimum Requirements:
	
	1. Mac Operating System 10.14 (Monterey) or above
	
	2. 4GB of RAM
	
	3. 10GB available hard drive storage space
	
	   a. Install the Microsoft Office 365 suite (~3GB) *
	
	4. Microphone, webcam, and speakers (All modern laptops have these three accessories built-in.)
	
	5. Mac has built-in anti-virus/malware software. It is important to install system updates to keep your device secured regularly.
	
	*[Microsoft office 365](#) is free to Keyano students.

Recommended Upgrades • 8GB of RAM • Regularly back up or synchronize your files, locally or with a cloud-based storage option. OneDrive is the cloud-based storage option free to students after the setup of KeyanoMail and Microsoft 365.	**Recommended Upgrades** • 8GB of RAM • Regularly back up or synchronize your files locally or with a cloud-based storage option. OneDrive is the cloud-based storage option free to students after the setup of KeyanoMail and Microsoft 365.
Tablets, iPads, and Chromebooks are **not** recommended: they may not be compatible with the testing lockdown browsers and Microsoft Office 365.	

Specific Department Requirements

Business and OA programs require Windows 10.
Other programs may utilize Windows-based tools as well.

Computer Software

Students have access to Microsoft Office 365 and Read&Write for free using Keyano credentials.

Recording of Lectures and Intellectual Property

Students may only record a lecture if explicit permission is provided by the instructor or Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not share, distribute, or publish any of the lectures or course materials; this includes any recordings, slides, instructor notes, etc., on any platform. Thus, no student is allowed to share, distribute, publish or sell course-related content without permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property. The [Academic Integrity Policy](#) provides additional information on Keyano College's expectations from students as members of the intellectual community.

ITS Helpdesk

If you have issues with your student account, you can contact the ITS Helpdesk by emailing its.helpdesk@keyano.ca or calling 780-791-4965.

COVID-19 We are subject to provincial, and municipal bylaws, and policies. These decisions may change pending further direction from the Alberta Chief Medical Officer, Alberta Health Services, and other provincial guidelines. To protect yourself and others, get immunized, wash your hands, wear a mask, keep your distance (2m/6 ft) and remain home when feeling unwell. For the most recent COVID-19 information, please refer to albertahealthservices.ca/COVID.

Specialized Supports The Student Services Department is committed to Keyano students and their academic success. There is a variety of student support available at Keyano. All student services are available during Keyano business hours: Monday to Friday, 8:30 a.m. to 4:30 p.m. The College is closed on statutory holidays. If you require support outside of regular business hours, please inform the support service team, and they will do their best to accommodate your needs.

Accessibility Services provides accommodations for students living with disabilities. Students with documented disabilities or who suspect a disability can meet with an Access Strategist to discuss their current learning barriers and possible accommodations. Students who have accessed accommodations in the past are encouraged to contact the department to request accommodations for the following semester. Please note that requesting accommodations is a process and requires time to arrange. Contact the department as soon as you know you may require accommodations. For accessibility supports and disability-based funding, please book an appointment by emailing us at: accessibility.services@keyano.ca.

Accessibility Services also provides individual and group learning strategy instruction for all students and technology training and support to enhance learning. You can meet with an Access Strategist to learn studying and test-taking strategies. In addition, you can schedule an appointment with the Assistive Technology Specialist to explore technology tools for learning. Book an appointment today by emailing: accessibility.services@keyano.ca

Wellness Services offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges. Mental Health Coordinators provide a safe and confidential environment for you to seek help with personal concerns. Our Wellness Navigator offers support with basic needs such as housing, financial and nutritional support, and outside referrals when needed. Wellness Services welcomes students to participate in group sessions that address topics including mindfulness and test anxiety throughout the academic year. Individual appointments can be made by emailing wellness.services@keyano.ca.

Library Services: provides students with research, information, and education technology supports as they engage in their studies. Library staff are available to help you online and in person throughout the semester. Librarians offer individual and small group appointments booked using the online Book A Librarian calendar. The Library also provides research and subject guides to help you with your studies. To view a subject or course-specific guide, check out the complete list of online Subject Guides. To start your research and access citation guides (APA, MLA, Chicago, or IEEE), visit the Research Help page. The Library's collections (including print and online materials) are searchable using OneSearch. The Library offers a Loanable Technology collection to support students accessing and using technology. For an up-to-date list of technology available for borrowing, visit the Library's Loanable Technology webpage. For a detailed list of library resources and services, go to www.keyano.ca/library. For all inquiries, please email askthelibrary@keyano.ca or chat with us online.

Academic Success Centre: The Academic Success Centre at Keyano College (CC-119) provides **free** academic support services to registered students, such as tutoring, writing support, facilitated study

groups, workshops, and study space. Academic Content Specialists are available in Mathematics, Science, Trades, Power Engineering, Upgrading/College Prep, Human Services, English, Humanities, and more. Students are encouraged to visit the Academic Success Centre to discuss study strategies and academic concerns. For additional information, please email Academic.Success@keyano.ca.

Academic Success Coach: The Academic Success Coach is located in the Academic Success Centre and works with students to develop academic success plans, time management skills, study strategies, and homework plans. For additional information, please email Academic.Success@keyano.ca.

Authorization

This course outline has been reviewed and approved by the Program Chair.

[Adam, Hiscock], Instructor

[Candi, Muise], Chair   Date Authorized

[Arlene, Starkes], Dean   Date Authorized

Signed copies to be delivered to:
Instructor
Registrar's Office