



LOYOLA
UNIVERSITY CHICAGO

Stritch School of Medicine

Course name: Pharmacology and Therapeutics

Course number: PRECLERK 205

Academic year: 2026-2027

INSTRUCTOR INFORMATION

Course Director: Neil A. Clipstone, Ph.D.

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Responsiveness: We will respond to emails sent weekdays within 24 hours (often same day). For emails sent over the weekend we will respond ASAP. Students wanting to meet in person can request a meeting via email, which will be arranged at a mutually agreeable time.

ESSENTIAL COURSE INFORMATION

COURSE DESCRIPTION

The Pharmacology and Therapeutics course provides an introduction to the fundamental basic concepts of the pharmacology of drugs, including pharmacokinetics, pharmacodynamics, drug metabolism, pharmacogenetics and the variability of drug responses between individuals, drug toxicity, drug discovery and clinical trials. The course also introduces students to the major pharmacological drug classes used in clinical practice to treat the major diseases, with a focus on drug indications, mechanisms of action and major adverse effects.

The central goals of the Pharmacology and Therapeutics course are:

1. To provide students with a solid grounding in the basic concepts and scientific underpinnings of the pharmacological sciences
2. To provide students with a comprehensive introduction to the fundamental Pharmacology and uses of the major classes of clinically important drugs currently used in medical practice.

COURSE LEARNING OUTCOMES

At the end of the course students will be able to:

MEDICAL KNOWLEDGE

1. Explain how the fundamental pharmacological properties of pharmacokinetics and pharmacodynamics influence routes of administration; drug distribution and drug levels in the body; drug efficacy and potency; potential for drug-drug interactions; drug toxicity; and the appropriate choice of drug for pharmacotherapy in a given patient.
2. Explain how to use drug-specific and patient-specific pharmacokinetic parameters to calculate the physiochemical properties that influence rates of drug disposition and clearance in the body, and how these parameters can be used to monitor, design and modify appropriate dosing regimens of drugs in specific patient populations.
3. Describe the process by which new drugs are discovered, developed, tested and finally approved by the Federal Drug Administration for use in the clinic.
4. Discuss the fundamental principles of pharmacogenomics including how specific patient genotypes can influence the pharmacokinetic and pharmacodynamics properties of a drug, thereby affecting the clinical response to particular classes of medications.
5. Describe how pharmacogenomics approaches can be used to influence the drug discovery process and the choice of drugs in the treatment of specific diseases.
6. List the major drugs and drug classes currently used in medical practice and describe their pharmacology including their indications, contraindications, clinical use, mechanisms of action, physiological effects, pharmacokinetic properties, major adverse effects and clinically significant drug interactions.

7. Apply knowledge of the pharmacology of the major drugs and drug classes currently used in medical practice, together with both disease-specific and patient-specific factors to select the most appropriate medication(s) for the effective pharmacotherapy of a given disease or condition in a specific patient.
8. Demonstrate an understanding of the molecular, cellular and physiological mechanisms underlying the pathophysiological changes that occur in the etiology of the most common disease states and describe how targeting these mechanisms with the appropriate choice of drug(s) can act to effectively treat, cure, or mitigate the underlying disease causes and/or symptoms.
9. Discuss the theoretical considerations and principles that underlie the successful pharmacotherapy of the major diseases and conditions.
10. Recognize and explain the rationales behind the use of widely used, national organization-approved treatment algorithms for the management and treatment of common diseases and conditions, including identifying the currently accepted diagnostic criteria required to initiate drug therapy and the anticipated therapeutic goals likely to be achieved by therapeutic intervention.
11. Identify any clinical testing requirements for monitoring the effectiveness and potential toxicity of specific drugs used in the treatment of common diseases and conditions.
12. Explain the physiological, pharmacological, and psychological effects of acute and chronic exposure of individuals to drugs with abuse potential, and the consequences of sudden withdrawal of such a drug from a drug-dependent individual.
13. Describe the effective use of non-pharmacological therapeutic interventions in the treatment of specific diseases, conditions and symptoms.
14. Discuss the basic principles of toxicology; the mechanisms by which excess exposure to certain drugs, toxins, chemicals, heavy metals and poisons can lead to adverse toxicological effects; and the basic principles of clinically managing the poisoned patient.
15. Evaluate the relative advantages and disadvantages in the use of dietary supplements and herbal medications in the treatment of certain specific conditions or diseases, including their efficacy, potential for causing adverse effects and drug interactions.
16. Compare and contrast the major differences in the laws and regulations governing the approval, safety, efficacy and marketing of dietary supplements and herbal medications compared to conventional FDA-approved drugs.
17. Demonstrate an understanding of the design and conduct of basic scientific and clinical research and explain how these findings can be applied to both develop new therapeutic modalities and influence patient care.

INTERPERSONAL AND COMMUNICATION SKILLS

18. Demonstrate the ability to effectively communicate and work collaboratively together with peers in the small group setting to successfully address problems of pharmacological significance.
19. Contribute to the education of peers by actively engaging in small group sessions and other required group work within the course.
20. Demonstrate the ability to utilize effective oral and written communication skills to summarize and explain the clinical significance of pharmacologically relevant scientific studies to individuals of diverse educational backgrounds, including patients, using language appropriate to their level of understanding

PRACTICE-BASED LEARNING AND IMPROVEMENT

21. Critically evaluate one's performance in the course to identify strengths and personal limitations in either pharmacological knowledge or study methods; develop learning goals to address any deficiencies and actively seek out assistance from appropriate sources to successfully remediate these deficiencies.
22. Demonstrate an ability to use online resources to objectively identify and evaluate the primary basic scientific and clinical literature relevant to pre-clinical drug discovery and drug development.

PROFESSIONALISM

23. Demonstrate professional behavior by completing all course requirements, including course evaluations, in a timely manner
24. Demonstrate professionalism by behaving in a professional, courteous and respectful manner when engaged in course activities or interacting with course faculty and staff.
25. Demonstrate responsibility and accountability by attending and being punctual at all required course activities such as small groups, team-based learning exercises and exams.
26. Demonstrate professional behavior by requesting any excused absence from required course activities well ahead of the scheduled date.
27. Demonstrate professional behavior by responding to direct communication from the Course Director in a timely fashion, particularly in circumstances when a face-to face meeting is requested to discuss issues related to academic performance
28. Demonstrate professional and ethical behavior by honestly completing course examinations without attempting to seek an advantage by unfair means; and by reporting any unethical behavior of peers to the course administration.

COURSE ORGANIZATION

Pharmacology & Therapeutics content is delivered over the course of the entirety of the M2 year from August to February but is divided into two separate courses (Pharm I and Pharm II).

Pharm I: Monday, August 3rd, 2026 – Friday, October 2nd, 2026

Pharm II: Monday October 12th, 2026 – Friday March 5th, 2027

You will receive an **individual** grade for **both** Pharm I and Pharm II

Passing grades in both Pharm I and Pharm II are required to progress academically. A failing grade in either Pharm I or Pharm II will require remediation.

Pharm I:

There are five major areas of emphasis in Pharm I:

(i) Basic Principles –in this series of lectures you will be introduced to the fundamental concepts of Pharmacology including pharmacokinetics, pharmacodynamics, pharmacogenomics, drug metabolism, drug interactions, drug transporters and drug discovery

(ii) Antimicrobial Drugs—this section of the semester will provide an introduction to the pharmacology and clinical use of antibiotic drugs used to treat bacterial diseases.

(iii) Autonomic Pharmacology/ NSAID medications- this section of the course will introduce you to the pharmacology of the autonomic nervous system and the NSAID class of drugs.

(iv) Pharmacology of blood coagulation - in this section you will be introduced to the major drug classes involved in treating abnormalities in the blood coagulation cascade

(v) Cardiovascular Pharmacology – in this series of lectures you will be introduced to the major drug classes that are used to treat diseases of the cardiovascular system. These drug classes include those used to control hyperlipidemia, hypertension, angina, cardiac arrhythmias and congestive heart failure.

There will be a total of **FOUR** exams in Pharm I on the following dates:

August 17th, 2026; August 28th, 2026; September 11th, 2026; October 2nd, 2022.

Pharm II

There are six major areas of emphasis in Pharm II:

(i) Antiviral, Antifungal and anti-asthmatic drugs – this series of lectures will provide an introduction to the pharmacology and clinical use of drugs used to treat infections with HIV and viruses, drugs to treat fungal infections and drugs to treat asthma and allergy.

(ii) Neuropharmacology – this series of lectures will provide an introduction to the pharmacology and clinical use of the analgesics ; the anesthetics, antiepileptics and drugs used to treat neurodegenerative diseases

(iii) Psychopharmacology – this series of lectures will provide an introduction to the pharmacology of drugs used in the treatment of common psychiatric illnesses, including the antidepressants, mood stabilizers, anxiolytics, anti-psychotics and stimulants. There will also be lectures on sedative hypnotic drugs and drugs used to treat drug abuse.

(iv) Endocrine Pharmacology – this section of the course will discuss the pharmacology of drugs used to treat disorders of the endocrine system. Topics included are hypothalamic and pituitary hormones ; estrogens, progesterones and androgens ; Adrenocorticosteroids ; drugs used to treat thyroid disorders ; drugs to treat osteoporosis, and drugs to treat diabetes.

(v) Chemotherapy and drugs affecting the immune system– the final section of the semester will focus on the pharmacology of drugs used in chemotherapy and the treatment of cancer, as well as drugs used in transplantation and the treatment of autoimmune disease

(vi) Miscellaneous topics- Other lecture topics that will be introduced throughout the course include : Drugs to treat anemia ; Drug toxicology; Drugs used in the management of GI disorders; Herbal Medications and Drug Supplements.

There will be **FIVE** exams in Semester IV on the following dates:

October 23rd, 2026; **November 13th, 2026; December 7th, 2026; December 18th, 2026; January 22nd, 2027; February 12th, 2027; March 5th, 2026

**** - This exam will only cover content from a single Pharmacology lecture**

Integration with other courses

The Pharmacology and Therapeutics course will run concurrently with Mechanisms of Human Disease. You will find that the lecture topics in these have been integrated so that related topics are coordinated and will be taught in a contemporaneous fashion. This will ensure that you will first hear about the underlying scientific basis of a disease process, its associated pathologies, and symptoms, prior to being introduced to the Pharmacology of the drugs used to treat that specific disease process. The topic areas are further integrated in small group sessions within both the Mechanisms and Pharmacology courses that aim to dovetail knowledge gained from both courses into addressing specific clinical scenarios. It is hoped that by integrating the course material in this way, it will aid the overall educational experience and will greatly facilitate the learning process.

MODES OF INSTRUCTION AND TEACHING METHODS:

Lectures

All lectures will be pre-recorded using the Panopto software platform and delivered asynchronously to view at your convenience. All lectures will be accompanied by the following:

- a) A list of specific learning objectives.
- b) A list of the important drugs to be covered during the lecture.
- c) A PPS file of the PPT presentation
- d) A PDF containing copies of the PPT slides
- e) A URL to the Panopto Lecture video recording
- f) Charts illustrating key Pharmacological features of each drug covered in the lecture, and/or a brief review of key points made in the lecture.
- g) Miscellaneous materials e.g. handouts, optional reading, useful reviews and other documents

Small Group Case Studies

In addition to lectures, Pharm I also includes four small group sessions. These small group sessions are scheduled to last 90 min and will take place in person in assigned rooms within SSOM. They will be focused on basic pharmacological concepts such as pharmacokinetics, pharmacodynamics drug dosing, drug metabolism, and drug interactions. The case vignettes and associated study questions will be made available online. Individual small group assignments, room numbers, and the names of the group facilitators will be posted in Sakai. Note that in many cases, Pharmacological topics and the use of drugs in the treatment of specific diseases will be discussed in small group cases delivered within the Mechanisms of Human Disease course.

In addition to the small group cases there will also be two pharmacology demonstrations that will use clinical simulators and standardized patients to illustrate important aspects in the use of the autonomic & cardiovascular drugs, respectively. These demonstrations will take either in SSOM Rm 190 or 390. You will be expected to have reviewed the cases prior to the class and to come to these sessions ready to fully participate in the discussions.

In line with current school policy attendance at Small Groups is Mandatory. Failure to attend and participate in small groups will result in an evaluation of DOES NOT MEET EXPECTATIONS in your Professional competency component of the course. If, for whatever reason, you find that you have a legitimate reason for being unable to attend a particular small group session you should seek advance permission from the Office of Student Affairs. Please note that small group sessions will not be recorded.

Bench-to-Bedside Project

The Bench-to-Bedside project is a small group exercise in the Pharm II course in which you and your group will engage with the primary biomedical literature in order to both develop important lifelong learning skills and gain an understanding of the ways in which basic, clinical and translational research are performed, evaluated, and applied to patient care. Specifically, how new drugs are discovered, developed, and tested prior to regulatory approval.

Each group will be provided with the name of a drug that is either currently undergoing clinical trials, or that has been recently FDA-approved. In the first scheduled session of this project, you will work collaboratively together as a group to search the literature in order to identify the relevant published papers describing how the drug was initially discovered; its molecular mechanism of action; and the details of the clinical trial studies demonstrating the safety and efficacy of the drug used to support its application for FDA approval. You will then work collectively to summarize and organize your

findings into the form of a group presentation that describes the following:

- a) a brief review of the disease/condition the drug is designed to treat
- b) any unmet clinical need that the drug fills
- c) a brief description of how the drug was discovered
- d) a description of the key pharmacological properties of the drug including its mechanism of action
- e) a brief description of the key findings from the clinical trial showing efficacy of the drug to include:
 - the specific trial design
 - the patient population included in the study
 - the specific clinical end point being measured
 - the relevant control group used in the study
 - the clinical outcome/quantitative effects of the drug on the clinical endpoint that were the basis for the drug's approval, including a description of the statistical analyses being used that supported the study's findings
 - any major adverse effects associated with the drug

During the second scheduled session each group will then deliver their group presentation to peers from other small groups in the assigned room, as well as a faculty member who will be responsible for evaluating the presentation, asking the group questions related to their presentation and providing feedback.

This project is designed to achieve five major goals: (1) gain an understanding of the ways in which basic and clinical research are performed and evaluated; (2) develop and hone lifelong learning skills including identifying, critiquing and assessing the credibility of relevant biomedical research; (3) working collaboratively and effectively as a team; (4) developing and honing communication and presentation skills and (5) developing the skills of communicating complex biomedical and clinical concepts to peers, and ultimately patients.

Attendance and participation in this project and the group presentations are **expected**. Presentations will be evaluated by a faculty facilitator who will provide a report on student participation and an assessment of each group's performance to the Course Director. The project will be graded as a **Pass/Fail component** of the course. Only those members of the group that actively, and, satisfactorily, participate in the group presentations will receive a passing grade. Students that either do not participate, or fail to meet expectations, will be required to remediate their performance.

KEY COURSE INFORMATION

Tips on studying for the Pharmacology course

As indicated above, the first section of Pharm I will introduce you to the basic scientific principles of Pharmacology. By its very nature this section of the course is very conceptual and deals with very basic fundamental aspects of Pharmacology. However, the remainder of Pharm I and Pharm II will quickly become very specific and is organized in a stepwise fashion to introduce you to the different classes of currently available drugs that are used to treat specific diseases and clinical conditions. This will expose you to a very large amount of information. In order to facilitate your learning and understanding of this material it is helpful to consider the following specific pieces of information for each drug or class of drugs that is covered.

For each drug/drug class you should know the following:

- a) **INDICATIONS***** - under what circumstances is the drug used.
- b) **DRUG ACTION***** - what clinical effect does the drug have.
- c) **MECHANISM OF ACTION***** - how does the drug work at the molecular and physiological level.
- d) **ADVERSE EFFECTS***** - are there any major clinically relevant side effects of the drug.
- e) **CONTRAINDICATIONS***** - are there circumstances in which the drug should not be administered to certain patient populations e.g. the elderly, those with renal insufficiency, pregnant women etc.
- f) **PHARMACOKINETICS** - are there any factors such as absorption, metabolism, excretion or half-life that might significantly affect the drug action.
- g) **DRUG INTERACTIONS** - are there any interactions with other potentially concomitantly administered drugs that might significantly affect the clinical efficacy, bioavailability or toxicity of either drug.

***- indicates most relevant HIGH YIELD information that is essential to master in order to perform well on the USMLE Step 1 exam.

This information will be discussed for each drug and/or drug class discussed throughout the course. In many cases, the information will be summarized in the charts that will accompany your lecture handouts. By learning this information for each drug/drug class, you will gain a greater appreciation for both the uses and limitations of these drugs in the effective treatment of specific patient populations. Knowing, understanding and being able to apply this information will not only be critical for performing well in examinations both in the Pharmacology course and in the USMLE-step 1 exam, but will also be critical foundational knowledge for use in the clerkships next year.

Preparation for Pharmacology Exams

- A. With the exception of the first exam block, which is focused on basic pharmacology concepts, the vast majority of questions (>95%) in both Pharm I and Pharm II will focus on aspects of drugs related to their indications, mechanism of action and major adverse effects- your study efforts should ideally focus on these areas.
- B. As part of the handouts for each lecture you should also receive a chart(s) illustrating the major features of the drugs discussed during that lecture (i.e. indications, mechanism of action, adverse effects, contraindications, drug interactions). Alternatively, some lecturers may supply you with a list of key review points for the lecture. In either case, these materials should be invaluable resources in your preparations for each exam. We recommend that you utilize these resources in a spaced repetition learning format to enhance your learning and to promote long-term retention of information. Alternatively, you may study this material using pre-prepared ANKI decks, just ensure that any ANKI decks being used are congruent with material being presented in lecture.
- C. Many students have also found value in using certain 3rd part resources that review pharmacology content in a number of different ways, including visual form (e.g. Sketchy Pharm), however, recognize that these resources are designed to be memorization tools and not primary source material. They are designed to link key concepts with a visual trigger and

ideally used to aid in memory retention. Ideally, these resources are utilized after you have initially reviewed, understood, and learned lecture content. You should also ensure that any 3rd party resources used for studying are also congruent with material presented in lecture.

- D. USMLE type questions with explanations can be found at the end of each chapter in Katzung and Trevor's *Examination and Board Review (13th Edition)*.
- E. The BRS Pharmacology contains an extensive number of short format pharmacology-related questions complete with answers.
- F. An online student Resource Center accompanies the 15th edition of Katzung "*Basic & Clinical Pharmacology*". This includes chapter questions and answers with detailed rationales.
- G. The following represent Pharmacology-related exam questions that are available online:

URL <http://www.pharmacology2000.com/learning2.htm>

URL http://tmedweb.tulane.edu/pharmwiki/doku.php/all_pharmwiki_quizzes

Methods of Course Communication

Communications regarding the course and any changes to schedule will be via email using your SSOM @luc.edu account. Please check your email regularly, including the SPAM folder. Announcements relevant to the course will also be made via Sakai.

ATTENDANCE POLICY

The SSOM expects that its students will recognize that they have entered a profession in which commitment to full participation in the learning environment is an essential component of preparation for professional practice. Attendance is expected in all educational activities, including, but not limited to all classroom, lab, clinical and simulation experiences. If there are extenuating circumstances that will significantly interfere with your attendance, as soon as you are aware of the issue, you must first communicate with Tina Marino (tmarino@luc.edu) in Student Affairs to request an excused absence, then let the Course coordinator know.

REQUIRED COURSE MATERIALS

Textbooks

Recommended:

Katzung, B. G., Vanderah, T. Basic and Clinical Pharmacology 16th Edition. McGraw Hill: Norwalk, CT. 2023.

- Available through Access Medicine via the Health Sciences Library

This is a textbook that is used by many Pharmacology courses at other Medical Schools around the

country- it is the companion textbook to the Board Review book listed below. It offers an in-depth detailed discussion of each topic and can be used as a primary resource textbook. It contains excellent summary charts of points at the end of each chapter.

Additional Optional resources that may be of use:

Textbooks.

Goodman & Gilman's The Pharmacological Basis of Therapeutics 14th Edition. McGraw Hill: NY 2017.

- available from the library through Access Medicine

This voluminous textbook provides a very comprehensive and in-depth discussion of all areas of modern clinical pharmacology. It is considered as the "gold standard" of Pharmacology textbooks. However, it would probably be overkill for the course for all but the most interested students.

Whalen, K.. Lippincott's Illustrated Reviews, Pharmacology 8th Edition., Lippincott Williams &Wilkins, 2022.

- A "user friendly" textbook that provides a basic outline of each topic. Provides just about the right amount of detail for easy review of any given topic. Includes many excellent tables, charts and illustrations for easy review of the material.

Review Books

Katzung, B.G, Kruidering-Hall, M., Tuan, R.L., and Vanderah, T.W.. Katzung's Pharmacology: Examination and Board Review 14th Edition. McGraw Hill: Norwalk, CT., 2024.

This Board Review book has previously been recommended by past students of the course. It offers a user-friendly brief synopsis of most pharmacological topics with plenty of diagrams, figures and tables. It also includes a list of practice exam questions complete with annotated answers at the end of each section. However, you should be aware that this book provides only a brief review of each topic, not a comprehensive in-depth coverage.

Lerchenfeldt, S. BRS Pharmacology 8th Edition, Wolters Kluwer 2025

An excellent resource for exam preparation. Succinct description of each major topic area, pharmacological concept and major drug class. Each chapter concludes with a series of MCQ practice questions complete with answers.

E-Resources

Decker: Medicine

URL <https://online-statref-com.archer.luc.edu/document/FnbJkAT3F6oligCpxpyxli>

This Online Textbook is available through the library e-books collection. It contains a series of excellent up-to-date chapters on a variety of disease process, detailing the underlying biology and pathology of each disease. Most importantly, each chapter ends with a discussion of the available

therapeutic approaches to treat each disease, as well as a succinct review of the most important pharmacological aspects of each of the highlighted medications.

Up-to-Date

URL <http://www.utdol.com/application/search.asp>

This website is available through computers on campus and can be accessed via the library web site (under quick links). It provides access to an extensive searchable and clickable database of excellent articles and monographs on specific disease conditions and the medications used to treat them. Provides excellent discussion on all aspects of specific medications including indications, mechanism of action, side effects and drug interactions. An excellent resource of current up-to-date pharmacological information that is widely used on the clinical floors.

Medical Pharmacology- Online Pharmacology content & Practice questions

URL <http://www.pharmacology2000.com/learning2.htm>

This is a privately run web site that provides concise review notes on a comprehensive list of Pharmacological topics and specific medications. In addition, it offers the chance to take a number of different online practice exams for each topic. Although I cannot attest to the complete accuracy of the material, it seems that this site would be a good resource for exam preparation.

COMPETENCY EVALUATIONS

The following competencies are evaluated in the course:

- Medical Knowledge
- Interpersonal and Communication Skills
- Practice-Based Learning and Improvement
- Professionalism

ASSESSMENTS AND GRADING POLICY

EXAM FORMAT

- A. There will be a total of **ELEVEN** exams throughout the year that contain Pharmacology and Therapeutics questions: Four in Pharm I and 7 in Pharm II. NOTE: The Pharm II on November 13th will only cover material from a single pharmacology lecture.
- B. The total number of questions containing Pharmacology material will vary from exam to exam and will depend on the total number of Pharmacology lectures given during that section of the course (3 questions/lecture hour).
- C. The exams are **NOT** cumulative. Each exam will consist of **three questions per lecture hour and one questions per small group session that were delivered during the corresponding section of the course.** All questions will all be multi choice format in the style of the United States

Medical Licensing Exam (USMLE-Step 1). Total time allowed for each exam will vary depending on the number of exam question- the average time allotted to answer each question will be 1 min 30 sec (Note: Time allotted during USLME step 1 is 1 min 20/question).

- D. All questions will be in the USMLE-best answer format and will be directly linked to a specific learning objective.
- E. After each exam you will receive back a report including your exam score and a list of the learning objectives linked to the questions that you answered incorrectly. This list should serve as the basis for re-reviewing course content to ensure your full understanding of course concepts and content for the future.

EXAM SCHEDULING AND MISSED EXAM POLICY

All students are expected to sit for each exam at the date and time indicated in the course schedule, as documented in the SSOM Academic Policy Manual. If circumstances arise that may prevent you from taking a scheduled examination (e.g. serious illness or an emergency situation) you should immediately contact the Office of Student Affairs as soon as possible, so that a timely determination can be made regarding a potential excused absence. Students who are unable to sit for an exam for a legitimate reason, as adjudicated by the Office of Student Affairs, will have their exam rescheduled for a later date. The rescheduling of any exams will be determined by mutual agreement of the Office of Student Affairs, the Office of Educational Affairs, and the Course Director, as outlined in the SSOM Academic Policy Manual.

EXAM POLICY:

The penalty for failure to adhere to the following policy will be a score of zero on the exam.

- All exams will be administered by school computer at a randomly assigned desk in one of the the school small group rooms or lecture halls. An email announcement with seating assignments for the exam will be sent by the lead educational coordinator shortly before each exam.
- All exams will be proctored.
- Students are expected to arrive for their exam at least 15 minutes prior to the scheduled start time.
- All bags, coats, electronic devices are to be left at the front of the room besides each proctor.
- Exams cannot be started more than 15 minutes after the scheduled start time. If students arrive more than 15 minutes after the scheduled start time they are directed to meet with a Dean in the Office of Student Affairs so that a determination maybe made as to whether the student is able to start their exam (Note: The scheduled end time for the exam remains in affect). Alternatively, if there is a legitimate explanation for the late appearance, the exam maybe rescheduled.
- Unless the student receives appropriate accomodations, eating is not allowed during exams. If necessary, a CLEAR water bottle that has been inspected by the proctor may be kept on the students desk.
- Students are not allowed any notes, electronic devices, or any other unapproved items on their desk during the exam.
- Students are not allowed to wear hats or cover their head during an exam unless it is a religious head covering. Students are not allowed to wear sunglasses during the exam.
- Students are allowed two sheets of blank scrap paper that will be provided by the proctor to help with the exam. Students must leave their two sheets with the proctor before leaving. They cannot be taken out of the exam room.
- Students should remain quiet during the exam and not make any unnecessary noise that would interfere with other student's ability to concentrate. Should a student be found in violation of this

policy they will first be requested to desist by the proctor. Any failure to comply with the proctor's request will be reported to the Office of Student Affairs for potential further action.

- Should a student need to leave the exam space to use the restroom they are allowed to do so one at a time. Students must signal the proctor, note the time of leaving and the time of reentry in the comments section of the attendance sheet. The exam clock will remain during this time. Students are expected to travel to the nearest restroom and return in a timely manner. Proctors will note any suspicious pattern of leaving behavior and will report those students to the Office of Student Affairs. Students are expressly forbidden to view any notes, electronic devices or otherwise attempt to seek an unfair advantage whilst visiting the restroom. Any student found to be seeking any such unfair advantage during a restroom break will be guilty of academic dishonesty and will be immediately reported to the Office of Student Affairs for further action.
- Each exam is allotted a specific time based upon the total number of questions. The time limit for the exam is strictly adhered to and once the time limit is reached, the exam will automatically close.
- Should it be necessary (e.g. power outage, loss of internet connection, or other interruption), proctors will add additional time to the exam, at the discretion of the Course Director.
- Students that experience a problem with their exam computer should alert the proctor immediately. Should it be necessary (e.g. individual computer failure), students may be reassigned to another computer terminal in a different exam room.
- Leaving the exam room with notes related to the question on the exam is considered academic dishonesty with consequences as stated in the Undergraduate Student Handbook.
- Seeking or giving information related to questions on an exam that a student has not yet completed is also considered academic dishonesty.
- If students have a question regarding an exam question; after the exam the student may submit their concern in writing via email in a respectful manner to the course director. The course director will evaluate the concern and if necessary confer with the Assistant course director and relevant faculty. In cases, where there is a legitimate concern regarding the question, that question can be deleted from the exam prior to the exam being finalized and scores released. Alternatively, if it is determined that there is a legitimate alternative correct answer, credit may be given to those students that selected the alternative answer (in this case the points are credited at the end of the course prior to the release of final course grades).
- Once the exam is finalized, students will receive their score along with a list of learning objectives that are linked to each question that they answered incorrectly.

Please Note:

During online exams, all books, notes, book bags, other computer programs/browsers and other devices (smart phones, smart watches, tablets, etc.) cannot be used. All cell phones and other electronic devices must be turned off and left at the front of the exam room next to the proctor. Any student who has a cell phone or other electronic device or any information related to course content on or near them during an exam will receive a grade of zero for that exam. If a calculator is required for any exam, all of the exam computers have in built calculator functions that students can access.

EXAM GRADING POLICY

Students will receive an individual grade and competency evaluations for both Pharm I and Pharm II.

A. Pharm I Requirements, Grading and Competency Evaluation

The grade and competency evaluation for Pharm I will be determined solely on the aggregate performance in the individual medical knowledge assessment exams delivered during this portion of the course.

The final grade will be based on the overall total percent of correctly answered questions on all exam assessments delivered during the course (i.e. total number of correctly answered questions on all exams/total number of asked questions on all Pharm I course exams expressed as a percentage)

Grading will be on a Pass/Fail basis

Pass: an aggregate percentage score greater than or equal to **70%**

Fail: an aggregate percentage score of less than **70%**.

In addition, students will also receive an evaluation for the medical knowledge competency, which is a reflection of the extent to which they are meeting the expectations of the competency. These competency evaluations do not appear on the official transcript but do form part of a students' official SSOM academic record and are reviewed, and potentially acted upon, by the Academic Review and Intervention Committee (ARIC) and the Student Promotion and Advancement Committee (SPAC) when considering fulfillment of SSOM competencies for the purpose of determining student promotion and graduation decisions, as outlined in the SSOM Academic Policy Manual.

Medical knowledge competency evaluations are determined as follows:

“Does not meet” -students who receive a failing grade for the course

“Meets with concerns” - students who achieve a pass, but whose final aggregate percent score is less than 1.65 SD below the class mean (i.e. within the lower 5% of the class).

“Meets expectations” -students who achieve a pass and whose final aggregate percent score is > the class mean minus 1.65 SD.

B. Pharm II Requirements, Grading and Competency Evaluation

In order to pass the Pharm II course, students are required to achieve a passing score for medical knowledge based upon the aggregate performance in the individual medical knowledge assessment exams delivered during this portion of the course, as well as record a pass in the Bench-to-Bedside project prior to the completion of the course.

The final reported grade for Pharm II will be based upon overall performance in the medical knowledge assessments, as outlined below.

(i) Medical knowledge assessment.

The final grade for Pharm II will be based on the overall total percent of correctly answered questions on all exam assessments delivered during the course (i.e. total number of correctly answered questions on all exams/total number of asked questions on all Pharm II course exams expressed as a percentage).

Grading will be on a **Pass/Fail** basis

Pass: an aggregate percentage score greater than or equal to **70%**

Fail: an aggregate percentage score of less than **70%**.

In addition, students will also receive a medical knowledge competency evaluation for their Pharm II performance, as outlined above for Pharm I.

(ii) Bench-to-Bedside project assessment

The Bench-to-Bedside project will be graded on a **Pass/Fail** basis

Pass- students who fully contribute towards the background research and preparation for the presentation and actively participate in the group oral presentation at a level that meets expectations.

Fail- students that either fail to participate in the project and the oral presentation, or whose participation falls significantly below the expected level. Note: Students that receive a failing grade for the assignment will be directly informed by the course director and will be required to complete a designated make-up exercise to demonstrate a satisfactory level of performance prior to the completion of the course. Successful completion and passing of a designated make-up exercise will be required in order to successfully pass the course.

In addition, based upon their performance in the Bench-to-Bedside project, students will also receive competency evaluations for both the Practice-based learning and improvement and the Interpersonal communication competencies as follows:

Meets expectations - students who achieve a passing grade in both exercises and whose performance fully meets the expectations of both assignments.

Meets with concerns - students who achieve a passing grade in both exercises, but whose performance in one or another of the assignments exhibits significant deficiencies as related to expectations.

Does not meet - students who receive a failing grade in either assignment.

Note: Students who initially receive a failing grade, but then successfully complete a designated make-up exercise will have their competency evaluations for Practice-based learning and improvement and/or the Interpersonal communication competencies converted from a “Does not meet” to a “Meets with concerns”.

These competency evaluations do not appear on the official transcript but do form part of a students’ official SSOM academic record and are reviewed, and potentially acted upon, by the Academic

Review and Intervention Committee (ARIC) and the Student Promotion and Advancement Committee when considering fulfillment of SSOM competencies for the purpose of determining student promotion and graduation decisions, as outlined in the SSOM Academic Policy Manual.

(iii) Professionalism assessment (see below for details)

Students who exhibit behaviors within the course that fall below the standards expected of a Stritch student will receive either a “Does not meet” or a “Meets with concerns” for their professionalism competency, depending upon the extent and seriousness of the behavior. Students that receive either outcome in their Professionalism competency will be subject to the review and subsequent actions of the Academic Review and Intervention Committee (ARIC) and the Student Promotion and Advancement Committee (SPAC), as outlined in the SSOM Academic Policy Manual. Please note that any reported professionalism concerns could ultimately affect the content of your MSPE (Dean’s letter).

MEDICAL KNOWLEDGE EXAM REMEDIATION POLICY

Students who fail to achieve the minimum score required for a passing grade in the medical knowledge assessments for the course will receive a “Does not meet” for their medical knowledge competency, but may be allowed the opportunity to remediate the course by taking a remediation exam, as outlined in the SSOM Academic Policy Manual. The purpose of the remediation exam is for the student to demonstrate competence of the material presented in the course. The remediation exam will be a rigorous, yet fair assessment, to ensure that the student has achieved sufficient mastery of the course content to be allowed to progress to the next academic level. The composition of the exam will be determined by the course director, together with faculty input, and will consist of representative fair and validated questions that assess critical understanding of core course concepts and high yield course content that reflects the breadth of material presented throughout the course. Remediation exams will be administered at the end of the academic year and will be scheduled by the Office of Student Affairs and the Academic Center for Excellence in consultation with the Course Director and the Office of Educational Affairs. All students requiring remediation should meet with the Course Director well in advance of the scheduled date of the exam to discuss both the exact format of the exam and their proposed study approach. Those students achieving a score of greater or equal to 70% on the remediation exam will have their initial F grade converted to a P* and the “Does not Meet” for their Medical Knowledge competency altered to “Meets with Concerns”. Students who fail to successfully achieve the minimum passing score will be required either to repeat the course in its entirety during the subsequent academic year, or alternatively, may be subject to automatic administrative action by the Medical School, as outlined in the SSOM Academic Policy Manual.

Please note that students with a final aggregate course score of <60% may be denied the opportunity to remediate their course failure by an end-of-year remediation exam and may instead be required to repeat the course in its entirety. The decision to allow such students the opportunity to take a remediation exam will be made by the Student Promotions and Advancement Committee (SPAC).

ACADEMIC INTEGRITY AND PROFESSIONAL CONDUCT

Academic Integrity

It is expected that all students will maintain personal integrity and honesty during the examination

process.

Specifically, we do not expect you to participate in and/or enable any of the following:

- the unauthorized access and use of any materials, notes, sources of information, study aids or tools during the exam.
- the assistance of any individual to help answer a question.
- the use of any internet enabled device to search for answers during the exam.
- helping another student commit an act of academic dishonesty.
- engage in any activity aimed at compromising the integrity of course exams either in this or future academic years.

Any student that attempts to gain an unfair advantage over other students in an examination by any of these unauthorized means, passes on the details of exam questions to any other student, will be guilty of academic misconduct and will receive a “Does not meet” in their professionalism competency and be promptly reported to the Office of Student Affairs for subsequent action.

Any written work submitted as part of a course requirement should represent the students own work and should not be plagiarized from other sources. Specifically, use of any AI-enabled software (e.g. ChatGPT) to complete any required course written assignment is not permitted. Any student found to be engaging in such activities will be guilty of academic dishonesty and will receive a “Does not meet” in their professionalism competency and will be promptly reported to the Office of Student Affairs for subsequent action.

Read through [Loyola’s full statement on Academic Integrity](#) here.

Professional Conduct:

Student behavior in the virtual and/or in-person classroom should be such that it helps to maintain an environment conducive to learning without distractions. Examples of disruptive behaviors include, but are not limited to, the following:

- Entering a class late or leaving early
- Making distracting noises
- Talking with another student during class that is not part of a class discussion
- Any type of rudeness including verbal and/or written forms
- Sleeping during class
- Signing in for another student on the attendance sheet for any required educational sessions

Appropriate professional behavior includes:

- Adopting appropriate, professional, and respectful interactions with the course directors, lecturers, medical education coordinators, and other students, including when communicating via email.
- Responding to direct communication from the Course Director and Course Coordinator in a timely fashion (within 48 hours), particularly in circumstances when a face-to face meeting is requested to discuss issues related to academic performance.
- Attendance at all required course sessions (unless an official excused absence has been granted by the Office of Student Affairs)
- Completion and submission of any required course assignment by the designated submission date.
- Completion and submission of end of course evaluations in a professional and constructive manner.

- Honestly completing course examinations without attempting to seek an advantage by unfair means and without attempting to compromise the integrity of the exam process in any way.

Any lack in professional conduct during the course will be noted in the online Professionalism reporting tool and an appropriate designation and narrative comment made to the Professionalism competency evaluation within the student grading system. In such cases, students will be subject to the review and subsequent actions of the Academic Review and Intervention Committee (ARIC) and the Student Promotion and Advancement Committee (SPAC), as outlined in the SSOM Academic Policy Manual.

You are training to be physicians and both we and society expect you to hold yourself to the highest professional and ethical standards.

UNIVERSITY POLICIES

Student Code of Conduct

One important aspect of a Jesuit education is learning to respect the rights and opinions of others. Please respect others by (1) allowing all classmates the right to voice their opinions without fear of ridicule, and (2) not using profanity or making objectionable (gendered, racial or ethnic) comments, especially comments directed at a classmate.

University Privacy Statement

Assuring privacy among faculty and students engaged in online and in-person instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom.

As such, recordings of instructional activities occurring in online or in-person classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so **only** with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

Copyright

Copyright law was designed to give rights to the creators of written work, artistic work, computer programs, and other creative materials. The Copyright Act requires that people who use or make reference to the work of others must follow a set of guidelines designed to protect authors' rights. The complexities of copyright law in no way excuse users from following these rules. The safest practice is to remember (1) to refrain from distributing works used in class (whether distributed by the professor or used for research); they are likely copyright protected and (2) that any research or creative work should be cited according to *[please insert standards appropriate to your discipline, e.g., MLA guidelines]*. Read more about [LUC's copyright resources](https://luc.edu/copyright) online: luc.edu/copyright.

Intellectual Property

All lectures, notes, PowerPoints, and other instructional materials in this course are the intellectual property of the faculty. As a result, they may not be distributed or shared in any manner, either on paper or virtually without written permission. Lectures that are recorded in the classroom or those that are pre-recorded are to be used for review only and may not be distributed.

Statement of Diversity

We must treat every individual with respect. We are diverse in many ways, and this diversity is fundamental to building and maintaining an equitable and inclusive campus community. Diversity can refer to multiple ways that we identify ourselves, including but not limited to race, color, national origin, language, sex, disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Each of these diverse identities, along with many others not mentioned here, shape the perspectives our students, faculty, and staff bring to our campus. Each of us is responsible for creating a safer, more inclusive environment.

Students in this course are encouraged to participate freely and share personal opinions, perspectives, and stories. There may be diverse, and perhaps contradictory ideas shared, in class. This variety is a strength of the academic community. Students are asked to show respect and treat peers in a way that validates various experiences and opinions based on a range of identities, including ability, economic class, ethnicity, faith tradition or no faith, gender identity and expression, nationality, religion, sexual orientation, veteran status, and their intersections.

Acts of bias, harassment, abuse, discrimination, relationship violence, sexual violence (i.e., sexual assault, sexual harassment, etc.), gender harassment, and stalking are not tolerated at Loyola. If you or someone you care about has experienced any one of these crimes and/or violations of LUC Community Standards, please know that you have rights, reporting options, and other support services available to you.

Addressing one another at all times by using appropriate names and gender pronouns honors and affirms individuals of all gender identities and gender expressions. Misgendering and heteronormative language excludes the experiences of individuals whose identities may not fit the gender binary, and/or who may not identify with the sex they were assigned at birth. In this course, we strive to provide an affirming environment for all students with regard to their names and gender pronouns.

If you do not wish to be called by the name that appears on the class roster or attendance sheet, please let me know. My goal is to create an affirming environment for all students with regard to their names and gender pronouns.

Notice of Reporting Obligations for Responsible Campus Partners

As an instructor, we are considered a Responsible Campus Partner (“RCP”) under Loyola’s [Comprehensive Policy and Procedures for Addressing Discrimination, Sexual Misconduct, and Retaliation](#) (located at [luc.edu/equity](#)). As a RCP we are required to report certain disclosures of sexual misconduct (such as sexual assault, sexual harassment, intimate partner and/or domestic violence, and/or stalking) to the University’s [Title IX](#) Coordinator.

As an instructor, we also have a mandatory obligation under [Illinois law to report disclosures of or suspected instances of child abuse or neglect](#).

The purpose of these reporting requirements is for the University to inform students who have experienced sexual/gender-based violence of available resources and support. Such a report will not generate a report to law enforcement (no student will ever be forced to file a report with the police). Furthermore, the University’s resources and supports are available to all students even if a student chooses that they do not want any other action taken. Please note that in certain situations, based on the nature of the disclosure, the University may need to take additional action to ensure the safety of the University community. If you have any questions about this policy, you may contact the [Office for Equity & Compliance](#) at [equity@luc.edu](#) or 773-508-7766.

If you wish to speak with a confidential resource regarding gender-based violence, we encourage you to call [The Line](#) at 773-494-3810. [The Line](#) is staffed by confidential advocates from 8:30am-5pm M-F and 24 hours on the weekend when school is in session. Advocates can provide support, talk through your options (medical, legal, LUC reporting, safety planning, etc.), and connect you with additional resources as needed. More information can be found at [luc.edu/coalition](#) or [luc.edu/wellness](#).

Statement of Intent

By remaining in this course, you are agreeing to accept this syllabus as a contract and to abide by the guidelines outlined in the document. Students will be consulted should there be a necessary change to the syllabus.

Observation of Religious Holidays

As a Jesuit, Catholic university, Loyola University Chicago invites people of all faiths and traditions to be a part of our community and we are committed to supporting students to grow in their faith traditions. At Loyola, faculty members will make efforts to accommodate students if the observance of a major religious holiday interferes with a student's academic work. If a student is unable to participate in a test or quiz, be present for a presentation, or complete an assignment on a specific day because of the [observance of a religious holiday](#), the student will be excused and provided the opportunity to make up the work. Students will continue to be responsible for all assigned work and should notify their professors in advance through Loyola email of the religious observance(s) that conflict with their classes. The HSC Ministry has compiled a list of religious holidays likely to affect SSOM students and is available at <https://www.luc.edu/hsc/ministry/>.

STUDENT SUPPORT AND RESOURCES

Requests for Accommodation

Students seeking academic accommodations for a disability must meet with the Student Accessibility Center (SAC) <https://www.luc.edu/sac/applywithsac/stritchschoolofmedicine/>. The SAC will verify the disability and establish eligibility for accommodations.

Students should schedule an appointment with their instructor to discuss any academic concerns and/or accommodations. Students are encouraged to contact SAC as early in the semester as possible.

Technology Privacy and Support Information

The ITS Service Desk provides the University with a single point of access for technology support. They are committed to providing excellent, professional customer service in tracking and resolving support requests. To request assistance, please contact the ITS Service Desk at 773.508.4ITS or via email at ITS Service Desk ITSServiceDesk@luc.edu. ITS Service Desk [Support Hours](#).

Links to Resources

These resources may be of use to you in this course and throughout your education at Loyola University. These services are offered to help you achieve the best education possible.

- [SSOM Academic Policy Manual](#)
- [Office of Student Affairs](#)
- [Academic Center for Excellence and Accessibility \(ACE\)](#)
- [Financial Aid](#)
- [Student Wellness Center](#)
- [Students Advising Students](#)
- [Advising Program](#)
- [Medical Student Union](#)
- [Faculty and Staff Directory](#)
- [myLumen](#)
- [LUMEN](#)
- [Health Sciences Library](#)
- [Sakai](#)
- [Reporting a Professionalism Concern](#)

- [HSD Care Referral](#)
- [Ethics Hotline](#)
 - Phone: 855.603.6988
- [Resource Rundown](#)