



LOYOLA
UNIVERSITY CHICAGO

Stritch School of Medicine

Course name: Molecular, Cell Biology & Genetics (MCBG)

Course number: PRECLERK 109

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 Molecular, Cell Biology and Genetics course aims to provide students with a solid background in the molecular biological sciences fundamental to medicine, providing them with the scientific underpinnings that will allow them to understand normal cellular function at the molecular level, as well as the contributions that altered molecular functions play in the pathophysiological processes leading to disease and the molecular basis underlying the effective treatment of those diseases.

The central goals of the Molecular Cell Biology and Genetics course are:

1. To provide students with a strong foundation in the principles of molecular and cellular biology, biochemistry, and genetics along with their connections to medicine
2. To develop team-based problem solving and analytical skills that are applicable to the health sciences and the future practice of medicine.
3. To provide students with solid grounding in the basic concepts of appraising the medical literature and electronic resources for validity, applicability, and limitations.

COURSE LEARNING OUTCOMES

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

MEDICAL KNOWLEDGE COMPETENCY

1. Utilize the principles of evidence-based medicine to search electronic resources, identify, and appraise medical literature relevant to the pathogenesis or treatment of a disease of your choosing, and provide a written report of your findings to MCBG faculty members for feedback.
2. Discuss the structure and function of proteins including the roles of individual amino acids in protein folding, charge, acid/base properties, and protein-protein interactions, using hemoglobin as one example.
3. Explain the principles of enzyme kinetics and how enzyme activity can be altered by drugs that act as competitive, non-competitive or irreversible inhibitors.
4. Analyze and interpret data and graphs related to protein expression and function, enzyme kinetics, and malfunctions of these processes in disease
5. Discuss chromatin structure and how it can be modified to affect gene expression.
6. Explain the mechanisms of DNA replication and repair, RNA synthesis and processing and protein synthesis in eukaryotic cells.
7. Describe how gene expression is regulated at the transcriptional and post-transcriptional level.
8. Analyze and interpret data and graphs generated from common laboratory techniques used to manipulate and amplify DNA, measure RNA expression, detect alterations and mutations in DNA

including their role in the diagnosis of disease.

9. Apply the principles of genetics to produce a family pedigree from a family history and distinguish different patterns of inheritance for single gene disorders linked to autosomes, sex chromosomes and mitochondrial genes.
10. Describe methods used to determine the relative contribution of genes and environment to common disorders with complex inheritance, and to provide genetic counseling based on empirically derived risk tables.
11. Demonstrate an understanding of population genetics including allelic frequency, genotypic frequency, and the Hardy-Weinberg equation.
12. Perform a literature search on a specific genetic disease and inform other students of the findings in a written abstract and an oral presentation.
13. Demonstrate an understanding of cell structure and the functions of organelles.
14. Describe the mechanisms of vesicular and protein transport to various subcellular sites.
15. Discuss the mechanisms of cell to cell signaling, including intracellular second messenger pathways.
16. Analyze and interpret data and graphs related to cell biology and its malfunction in disease.
17. Explain the cell cycle and its regulation, including the mechanism of mitosis.
18. Demonstrate an understanding of molecular pathways that are altered in cancers including oncogenes, tumor suppressors, apoptosis, angiogenesis, and DNA repair.
19. Analyze and interpret data and graphs related to targeted cancer drug therapy involving cultured cells, animal models, and human clinical trials.

INTERPERSONAL AND COMMUNICATION SKILLS COMPETENCY

1. Demonstrate the ability to effectively communicate and work collaboratively with peers in the small group setting to successfully address problem sets in molecular cell biology and genetics.
2. Contribute to the education of peers by actively engaging in small group sessions and by clearly communicating information in an oral presentation based on a personal literature search on a specific genetic disease.

PRACTICE-BASED LEARNING AND IMPROVEMENT COMPETENCY

1. Critically evaluate one's performance in the course to identify strengths and personal limitations in either knowledge or study methods; develop learning goals to address any deficiencies and actively seek out assistance from appropriate sources to successfully remediate those deficiencies.

2. Demonstrate an ability to use online resources to objectively identify and evaluate the primary basic scientific and clinical literature relevant to the molecular basis and treatment of disease.

PROFESSIONALISM COMPETENCY

1. Demonstrate professional behavior by completing all course requirements, including course evaluations, in a timely manner
2. Demonstrate professionalism by behaving in a professional, courteous, and respectful manner when engaged in course activities or interacting with course faculty and staff.
3. Demonstrate responsibility and accountability by attending and being punctual at all required course activities such as small groups, team-based learning exercises, and exams.
4. Demonstrate professional behavior by requesting any excused absence from required course activities well ahead of the scheduled date.
5. 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
6. 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

The emphasis of the course will be on student-centered learning. Students will learn course content and concepts from asynchronously delivered lecture material and will then apply those concepts by working collaboratively with peers in small group problem solving sessions that will meet daily throughout the course.

The course is divided into three blocks of approximately 2 weeks duration.

Block one: Protein structure and function, enzyme kinetics, DNA structure and organization, DNA replication, DNA repair and recombination and Tools for Molecular Biology.

Block two: Genes and gene transcription, RNA and Protein processing and synthesis; Genetics

Block three: Cell biology, cell signaling, cell growth, apoptosis and cancer biology

Each block will culminate with an exam assessing material covered during the block that will each count towards the final course grade.

MODES OF INSTRUCTION AND TEACHING METHODS:

(i) Lectures

All lectures will be pre-recorded using the Panopto software platform and delivered asynchronously to view at your convenience prior to the related small group session. Lecture links are posted on both the MCBG Sakai site (found under Session Materials) and on LUMEN (under course activities). Course materials are also available through links on the UME calendar.

For each lecture you will find:

- 1) A list of lecture-specific learning objectives and key concepts, including an optional reading assignment link to one of the relevant course textbooks
- 2) A PowerPoint file containing copies of slides from the lecture presentation
- 3) A handout containing figures and explanations from the lecture.
- 4) A link to the lecture video recording

Please Note: Lecturers are given the professional freedom to prepare their handouts based on how they feel the material can best be conveyed. Some professors have not provided a separate handout. They have elected to either utilize the notes section on the PowerPoint file to provide text that would have been on a handout or to add explanations directly to their slides.

Each day, a lecture will be assigned for viewing. Because the lectures are asynchronous, the time listed on the LUMEN calendar is a place holder for administrative purposes but does not reflect when lectures are available for viewing. All course materials will be posted in advance of the assignment date to provide students with the maximum flexibility for viewing.

In addition to the scheduled lectures delivering course content, you will also be responsible for viewing the **Library Lecture**. This lecture recorded by librarians from the Health Sciences library will introduce you to online resources that will help you with your two research projects (details are below). This lecture can be viewed at your convenience, but it is meant to guide you through your preliminary search related to your topic for the MCBG Independent Research Project and the Genetics Project. The library staff is available to provide one-on-one help for any student who desires more information. Contact information will be provided in the lecture or visit their website (<http://library.luhs.org/hslibrary/index.htm>).

(ii) Small group problem solving sessions

Small group problem solving sessions (SGPSS) are an integral component of the MCBG course. They are scheduled daily give you the opportunity to work collaboratively with peers in order to integrate information delivered in the lecture and apply that knowledge to analyzing and solving clinically-related problems. The problem sets do not simply focus on simple recall of lecture information, but instead require you to apply the information learned in lecture to address clinical and experimental scenarios that can challenge you to go beyond the boundaries of the lecture material.

Small group sessions are scheduled the day following the posted lecture assignment, each small group is scheduled for **1-hour 45-minute beginning at 9:00 a.m.**

A problem set related to the previous day's lecture will be provided in Sakai for you to download to your tablet or personal computer approximately 15 minutes prior to the start of small group. The

problem set can be found in the Sakai site for MCBG under Resources in a folder with the name of the corresponding lecture. Each group will have a white board and markers to review concepts, summarize problem-set data, brainstorm, etc. Using the white board as a visual aid can greatly enhance learning in the small group sessions. It helps the group to focus on a common concept or an idea posited by a group member.

Lecture material should be reviewed prior to the SGPDD. It is your professional obligation to come to each small group session on time and prepared to contribute intellectually to the discussion and problem solving session.

Preparation will be considered when evaluating your competency in professionalism.

At least one faculty facilitator will be available in each room during every small group session. Consistent with the student-centered philosophy of the course, **the faculty facilitators will monitor the groups and assist them in the discussion process but will not function as content experts**. Facilitators will not lecture. They may answer questions at their discretion but are instructed to help guide students in the right direction or to direct students to raise the issue during the “recap session”. If the group has a question that can’t be answered by its members, the question can be written down on a note card that is provided daily. Students can hand the notecard to the lecturer (or place it on the podium) prior to the beginning of the recap session.

Halfway through the course, students will have a one-on-one meeting with one or more of their facilitation team. The goal of the meetings is to:

1. Allow the student to talk to the facilitator in a private setting where any concerns regarding their group dynamics or performance can be raised.
2. Allow the faculty member to provide feedback on the student’s performance in small group in the areas of communication, professionalism, and their approach to problem solving.

A successful small group has members who have a combination of interpersonal skills including the ability to listen, to pose questions, and to communicate ideas effectively. **Importantly, they have respect for one another and the desire to include everyone in the discussion.**

In line with current school policy, **attendance at Small Groups is required**. If, for whatever reason, you find that you have a legitimate reason for being unable to attend a particular small group session, you need to seek advance permission from the Office of Student Affairs. Small group sessions are not recorded.

Failure to attend and participate in small groups will result in an entry of **DOES NOT MEET EXPECTATIONS** in your Professionalism and Practice-Based Learning and Improvement competencies component of the course.

Additionally, at the end of the course, the **faculty facilitators will provide a narrative evaluation of** your competency in Interpersonal and Communication Skills, Practice-Based Learning and Improvement, and Professionalism based on your performance in the small group sessions.

(iii) Recap and Q & A Sessions

The SGPSS is followed by a 15-minute break and at **11:00 a.m. the Recap and Q & A Session**

begins. Recap is a 1-hour session where the faculty member responsible for the lecture material and the small group problem set explains the answers to the small group questions and answers any other questions students have about the problem set or lecture material. These sessions are recorded using the lecture hall recording system and are available through the LUMEN calendar.

In addition to this live session, answer keys (called facilitator guides) and Recap PowerPoint slide sets will be released to students later on the same day. The answer key and slide set can be found in Sakai under Resources in the folder corresponding to the associated lecture.

(iv) Review Sessions

Faculty who lectured Monday – Thursday (and the previous Friday) will usually hold **review sessions on Friday afternoons**, although dates and times will vary as the course moves forward. The dates, times, and locations of review sessions are listed on the LUMEN calendar and will be announced through Sakai Announcements as a reminder.

Each lecture is given 30 minutes for review. Interested students should come prepared with questions as there is a limited time allotted for each lecture. Students should be prepared to ask questions about specific material when relevant slides are available to aid in explanations. We will adhere strictly to the 30-minute time limit to be respectful of both student and faculty time.

KEY COURSE INFORMATION

(i) Independent Research Project

The Independent Research Project is an independent exercise designed to help you further develop your ability to search for, identify, and critically evaluate relevant biomedical literature. The medical school accrediting body – the Liaison Committee on Medical Education (LCME), has identified lifelong, self-directed learning as an essential component of a medical education. Practicing these skills now is an important part of preparing you for clerkships and clinical practice, where you will be required to search and review the literature regularly.

The project is **due prior to August 21, 2026, at 5:00 p.m.**

It is recommended that you **review the Library lecture prior to starting this project.** There are a vast array of powerful technologies and databases specific for medicine and basic medical sciences. These resources require practice to use efficiently.

Students will each select a disease or condition that interests them and then search the primary literature to identify **published studies regarding either the molecular pathogenesis of the disease or the treatment of the disease.** Students need to focus on recently published, peer-reviewed literature directly addressing their question through clinical or basic science studies. Inclusion of studies using well established animal models of the disease are acceptable. Two recent, high-quality publications need to be selected for completion of the project i.e. publications from 2020 – 2026. Narrative review articles, case reports, and case series are not considered high-quality resources (more information below).

Each student needs to create a report containing the following information.

- 1) Your name
- 2) Name of selected disease or condition
- 3) Search strategy including databases searched, filters used (if any), and search terms entered
- 4) Full citation and abstract of the two most relevant studies identified to address your question.
- 5) For each selected paper:
 - a. Provide a brief rationale (2 or 3 statements) for why you selected the article as high-quality research
 - b. Provide a brief summary (1 - 3 sentences) stating the key conclusions of the selected paper. Be brief. There is no need to list all findings or conclusions.

It is not necessary to prepare long rationales or summaries.

The project can be completed at your convenience and submitted as a **PDF document** through Sakai. Feedback will be provided via Sakai. Sakai does not notify faculty when items are uploaded, and you may or may not be notified that feedback has been posted. If you have any concerns, please contact the Course Director.

The assignment will be assessed based the following criteria:

- Selected publications must be recent (2020 - 2026). Rare diseases may be problematic due to an overall scarcity of literature, particularly high-quality recent publications.
- Selected publications must be from reputable medical journals.
- Selected publications must directly support the molecular pathogenesis or treatment of the selected disease
- Selected publications must be from “high-quality” resources.

Assignments will be graded on a **PASS/FAIL** basis. Passing this assignment is required to pass the course.

If a student fails to meet expectations for the assignment, they will be provided with feedback regarding the issues identified, and they will need to successfully remediate the project to pass the course and have their competency evaluations for the **Practice-Based Learning and Improvement competency** converted from a “Does not meet” to a “Meets with concerns”.

(ii) The Medical Genetics Project

The Medical Genetics Project is a small group exercise designed to give students additional exposure to searching the biomedical literature as well as identifying and critically evaluating how relevant research is performed and analyzed. The Medical Genetics Project is distinct from the Independent Research Project, as students work together as a team to create an organized presentation to educate their peers and small group faculty facilitator(s) about their selected genetic disease. Each student must also submit an abstract and bibliography summarizing their findings in a clear and logical manner. The project is a graded component of the course.

The assignments for the Genetics Projects are spread throughout the course. During the first two weeks of class, your small group will select a **genetic disease** to study. If you need ideas, you can find many diseases in human genetics textbooks or on the Health Sciences Library’s toolkit. You might choose a disease with a known genetic risk factor (e.g., a particular type of cancer) or choose from the list of possible diseases provided in the Genetics Project Resources available on MCBG

Sakai. Feel free to select any genetic disease you and your group want to learn about and share with your peers. **As you will be presenting to three other groups, each group in your assigned small group room must select a different disease. Submit your disease selection through Sakai to reserve that topic.** Topics will be accepted on a first come, first serve basis. If your group duplicates a topic within your small group cluster, you will be asked to select a different disease.

Your selections should be submitted through Sakai Discussions in the folder labeled Genetic Projects Topics. Your selection needs to be submitted by **no later than Friday, August 14th at 5:00 p.m.** Only one member of your small group needs to submit the disease topic.

Each member of your small group must then select a different subtopic to focus on for their part of the research, abstract, and presentation. Although not all subtopics apply to all diseases, make sure that your group covers several of the following topics (which overlap somewhat): **disease phenotype** (observable morphological, biochemical, and physiological characteristics of the individual, determined by a combination of genotype and environment), **genetics & inheritance risk** (what are the underlying genetic defects/mutations responsible for the disease and how is disease inherited), **pathogenesis** (the mechanisms involved in disease development), **natural history** (how the characteristics of the disease develop over time without treatment), **management** (activities aimed at improving the health and clinical outcomes of a patient with the disease, if available), future treatments (i.e. how disease might be treated if current treatments are not available) and **family, social, legal, and ethical issues** that relate to the specific disorder. While you will divide up the subtopics among group members, **everyone should have a clear understanding of the disease etiology and mode of inheritance.** A Genetics Presentation Template is provided in Sakai under Resources in the folder Genetics Project Resources. The template includes ideas for organizing and approaching different subtopics.

Your group should prepare a unified PowerPoint presentation for the scheduled day of presentation. Presentations are informal but should be professional. Your PowerPoint slides do not need to be fancy or flashy; they need to convey the appropriate information clearly. Each group should present for approximately 20 - 25 minutes with each group member participating in the presentation. There will be 5 - 10 minutes for questions from your peers and facilitators before the next group will begin their presentation.

Each student must submit via MCBG Sakai Assignments

- 1. A written abstract of your subtopic (approximately one-half page). Each student submits a unique abstract based on their research for the subtopic they will be presenting.**
- 2. A bibliography of your most important 3-4 references. All references need to come from reliable peer-reviewed primary literature.**
- 3. A copy of your small group's PowerPoint presentation**

The format of the abstract and bibliography should follow the example posted in Sakai under Resources in the folder Genetics Project Resources. **The abstract with a bibliography (PDF format only), and PowerPoint presentation must be submitted by 5:00 p.m. September 9th 2026.**

Attendance is mandatory for the Genetics Project Presentations. It is not possible to make-up the in-person presentation, or the learning opportunity provided by listening to your peer's presentations. Those students that experience an emergency situation or that require an excused

absence should contact the course director in advance. Those with an approved excused absence will still be required to (1) participate in the group presentation by pre-recording their part of the talk in Panopto, which will be played during the presentation and (2) submit the required abstract, bibliography, and PowerPoint files as stated above.

The Genetics Project will be worth **4% towards your final course grade**. Facilitators may recommend a lower grade for students who did not adequately prepare or did not participate sufficiently in the presentation or discussion. Satisfactory completion of the Medical Genetics Project will also be considered in the facilitator's written narrative at the end of the course. This assignment will also be considered when determining your competency in Medical Knowledge, Interpersonal and Communication Skills, and Practice-Based Learning and Improvement.

(iii) Faculty and course evaluations

Medical student feedback is essential to continuous quality improvement, and all **students are required to complete an evaluation of the course, lecturers, and their small group facilitators**. Evaluations of facilitators and lecturing faculty can be completed at any time throughout the course. Course content evaluations can be completed during the two weeks before and after the final exam. Students are expected to complete the evaluations in a professional and constructive manner. Students that fail to complete the evaluations by the deadline will have a notice entered under their professionalism competency.

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.

Sakai will be used as the primary mechanism for providing course materials, collecting student assignments, and communicating with the class. It also hosts an online discussion forum for student questions and faculty responses. Sakai can be accessed using the menu at the bottom of the LUMEN homepage or through the MCBG Homepage under Educational Resources or through this link: <https://sakai.luc.edu/>. Login using your Loyola username and password is required.

The MCBG Sakai site is organized into the following sections:

Overview: landing page for MCBG

Course Information: contains general course information including the Course Description, MCBG Goals and Objectives, and resources for the Genetics Project and the Independent Research Project.

Course Description: this document

Announcements: a chronological listing of all course announcements. As all announcements to the M1 class will be made through Sakai, **we strongly urge all students to review each announcement as it is released**.

Small Groups: Each folder contains all small group related materials, and any supplemental materials provided by the lecturer to enhance your understanding. Unless specifically stated otherwise by the lecturer, any supplemental materials are not tested. Note that the folders may look empty until the small group problem set is released 15 minutes prior to the small group problem solving session. Later that afternoon, the facilitator guide and any recap slides will also be added to the folder. These resources are automatically released on a timer making them invisible until their scheduled release.

Session Materials contains a chronological list of lectures, small groups and recap sessions. Icons will be shown when a lecture slide set, or handout is available for download. The Panopto video is available in the last column where it says Uploaded Video: View. Regardless of the time listed on the Lumen calendar, if the video has been uploaded, it is available for you to watch.

Discussions: an online discussion tool. Inside Discussions, you will find a folder for Genetics Project Topics where one student from each group will indicate the disease topic their group will present for the Genetics Project. The other folders are either general discussions or the name of each lecture. Students are encouraged to post their questions on the corresponding lecture, which will be answered by a faculty member. Students are welcome to add their thoughts to the discussion as well.

The Discussions Forum is the preferred method of asking a question as the question and answer can benefit all students. If you have a question, at least 10 other students in the class likely have the same question. Initiating a vibrant discussion between students and faculty is a win-win situation. Faculty on the Health Sciences Campus only use Sakai for their teaching in the medical school. This means they are only using the system a few times a year and are not used to looking at it regularly. If your question is not answered in 24 hours, either email the lecturer to tell them a question is waiting or email the Course Director or Medical cCoordinator, and we will email the lecturer. A reminder is welcome and appreciated.

Assignments: contains information related to the Independent Research Project and the Medical Genetics Project. When submission is required, you will be provided with a place to upload your PDF documents.

SSOM Calendar: Is the official calendar for the medical school. Please check the calendar regularly, or if you download the information to a different calendar you prefer to use, confirm that your calendar is updating as changes are made to the SSOM calendar.

If you click on a particular MCBG lecture in the SSOM calendar, you can download the associated lecture slide set, the handout and/or view the pre-recorded video. If you click on a recap or review session, a box will open on the right containing the in-house recording of that event in half-hour increments. The SSOM Calendar is the only location where you can access in-house lecture room recordings.

The 7th edition of Alberts Molecular Biology of the Cell textbook was published through Norton Publishers. They have required us to place a link in the MCBG Sakai website so that students can go directly to Norton to purchase their copy of the text. This requirement allows us to utilize the figures from the text in our lectures and handouts for the class. If you plan on purchasing the text, there is absolutely no pressure to purchase through Norton. We are simply required to provide the option in order to have permission to re-produce figures from the text.

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.

In line with current school policy, **attendance at Small Groups is required**. If, for whatever reason, you find that you have a legitimate reason for being unable to attend a particular small group session, you need to seek advance permission from the Office of Student Affairs. Small group sessions are not recorded. Failure to attend and participate in small groups will result in an entry of **DOES NOT MEET EXPECTATIONS** in your Professionalism and Practice-Based Learning and Improvement competencies component of the course.

REQUIRED MATERIALS

Recommended: These texts are used for reading assignments.

Alberts, B. et al. (2022). **Molecular Biology of the Cell, 7th ed.** Garland Science, ISBN 978-0-8153-4432-2. Hardcover copies are available in the library and the Academic Center for Excellence.

Devlin, T. (2011). **Textbook of Biochemistry with Clinical Correlations**, 7th ed. Wiley Publications. ISBN 978-0-470-28173-4. Reserve copies available in the library.

Nussbaum, R., McInnes, R.R., Willard, H.F. (2016). **Thompson and Thompson Genetics in Medicine, 8th ed.** Elsevier. ISBN 978-1-4377-0696-3. E-Book available for 7th and 8th editions through the library website.

Alternative texts include:

Alberts, B. et. al. (2015) **Molecular Biology of the Cell, 6th ed.** Garland Science, ISBN 978-0815341055 For many, but not all chapters, the 6th edition is similar to the 7th edition.

Meisenberg, G. & Simmons, W.H. (2017). **Principles of Medical Biochemistry**. 4th ed. Elsevier. ISBN 978-0-323-29616-8.

Available as an E-Book through the library website.

Schaaf, C.P., Zschocke, J., Potocki, L. (2012). **Human Genetics: from Molecules to Medicine**. Lippincott. ISBN 10-1-6083-1671-8.

Available as E-Book through the library website.

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 three exams given in this course. Each exam covers approximately two weeks of material.

August 17 – Exam 1

August 31 – Exam 2

September 22 – Exam 3

- B. The total number of questions on each exam will vary, but the number is roughly calculated as 4-5 multiple choice questions per scheduled lecture hour for new material and 1-2 questions per lecture from prior material.

- C. Exams will be cumulative, but material will be re-tested only once. Thus, Exam 1 material will be re-tested on Exam 2, but not Exam 3. Exam 2 material will be re-tested on Exam 3. You are strongly encouraged to routinely review previous material throughout the course to aid in your retention of the material for the next exam and for the United States Medical Licensing Exam (USMLE-Step 1).

- D. All exam questions will be multiple choice format in the single best answer style of the USMLE-Step 1. Total time allowed for each exam will vary depending on the number of exam questions - the average time allotted to answer each question will be 1 minute 45 seconds. The total time is then rounded up to the next convenient 15 mins. Note: time allotted during USMLE-Step 1 is 1 minute 30 second / question.

- E. All questions will be directly linked to a specific learning objective.

- F. MCBG Policy for disputing exam questions is as follows:

1. Email the Course Director ASAP after you have finished your exam. We will not release exam grades until any disputes have been identified, investigated, and finalized.
2. Clearly describe the question and your concerns. Please provide enough detail for the question to be identified. The number of the question is not helpful because the questions are randomized on each computer. Usually, a few key details are enough to find the right question. When describing your concerns, be professional.
3. All disputes will be answered in writing.
4. Concerning questions will be discussed with the involved Lecturer and the Assistant

Course Director. Course Director decisions are final.

- G. After each exam is finalized, 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 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

(i) Medical Knowledge Grading and Competency

Medical Knowledge will be assessed and graded through the three multiple choice examinations, and successful completion of the Medical Genetics Project. The final grade will be based on the number of correctly answered questions on all exam assessments delivered during the course divided by total number of questions on all exams, which will count 96% towards the final grade, plus a total possible of 4% Genetic Project with the result 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 reflects 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 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

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.

(ii) The Interpersonal and Communications Skills competency

The Interpersonal and Communications Skills competency will be assessed by your facilitators based on your participation in the Small Group Problem Solving Sessions and the Genetics Project presentation. The evaluations are determined as follows:

“Does not meet” - students who do not participate in Small Group Problem Solving Session due to recurrent unexcused absences or lack of active participation in discussions as determined by their Small Group facilitation team. Unexcused absences from the Genetics Projects presentation will also be taken into consideration.

“Meets with concerns” – students who show a lack of active participation in small group problem solving sessions that is concerning to the facilitation team.

“Meets expectations” – students who are active participants in the small group learning process including the Genetics Project presentation.

(iii) Practice-based Learning and Improvement competency

The Practice-based Learning and Improvement competency will be assessed through the abstract and bibliography portion on the Genetics Project, and the Independent Research Project. Positive responses to concerning feedback from the facilitator will be considered as evidence of student actively addressing deficiencies in a productive manner.

“Meets with concerns” – students who fail to turn in assignments on time, or whose work demonstrates lack of care and concern toward accomplishing the goals of the project. Ignoring facilitator feedback regarding deficiencies noted by the facilitation team and brought to the attention of the student.

“Meets expectations” – students who strive to perform solid work through thoughtful completion of assignments, on time submissions, and attempt to improve deficiencies identified by and brought to their attention by their facilitation team.

Note: Students who initially receive a failing grade, but then successfully remediate will have their competency evaluations for the **Practice-Based Learning and Improvement competency** converted from “Does not meet” to “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 Student Promotions 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.

(iv) 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).

DETERMINATION OF FINAL COURSE GRADE

The final grade will be based on the number of correctly answered questions on all exam assessments delivered during the course divided by total number of questions on all exams, which will count 96% towards the final grade, plus a total possible of 4% from the Genetic Project assessment with the result 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%**.

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:

Personal responsibility and professionalism are two key areas in the development of a physician. It is expected that professionalism will be extended in all aspects of your conduct in this course.

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 Student Promotions Committee (SPC), 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/stitcheschoolofmedicine/>. 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](#)

COURSE FACULTY

LECTURERS

Generally speaking, e-mail is the best way to contact faculty.

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