

MCBG-2009 At-a-Glance Course Schedule

Month	Monday	Tuesday	Wednesday	Thursday	Friday
August	3 8:30-9:00 Intro to MCBG Simmons/Frankfater 9:00-1:00 Amino acids, peptides, & polypeptides. Schultz (90 min) SGPSS	4 8:00-12:00 3-D structure of proteins. Schultz (90 min) SGPSS	5 1:30-5:30 Protein function. Schultz (90 min) SGPSS	6 8:30 – 12:30 Enzyme Kinetics Schultz (90 min) SGPSS	7 9:30-1:30 Recombinant DNA techniques, including a brief introduction to DNA structure and replication. Foreman (90 min) SGPSS 2:30-3:30 (optional) Weekly Q & A – Rm. 360
August	10 8:30-12:30 Organization & packaging of chromosomes. Zeleznik-Le (90 min) SGPSS	11 8:00-12:00 DNA replication. Introduction to mitosis. Zeleznik-Le (90 min) SGPSS	12 1:30-5:30 DNA repair & recombination. Introduction to meiosis. Dingwall (90 min) SGPSS	13 8:30-12:30 RNA synthesis & processing. Foreman (90 min) SGPSS	14 9:30-1:30 Protein synthesis Foreman. SGPSS 2:30-3:30 (optional) Weekly Q & A – Rm. 360
August	17 8:30-12:30 Transcription Regulation I. Schultz SGPSS	18 8:00-12:00 Transcription Regulation II. Schultz (90 min) SGPSS	19 1:30-5:30 Posttranscriptional Gene Regulation. Frankfater (90 min) SGPSS	20 8:30-12:30 * Cytogenetics I- Principles Jones SGPSS	21 9:30-1:30 * Cytogenetics II- disorders of autosomes and sex chromosomes Jones SGPSS (Alternate rooms) 2:30-3:30 (optional) Weekly Q & A – Rm. 360
August	24 8:30-12:30 Exam 1	25 8:00-12:00 Patterns of single gene inheritance. Frankfater SGPSS	26 1:30-5:30 Genetic variations in individuals and populations. Le Poole (90 min) SGPSS	27 8:30-12:30 Genetics of complex diseases. Jones (90 min) SGPSS	28 9:30-1:30 Membranes I & II. Cukierman (120 min) SGPSS (Alternate rooms) 2:30-3:30 (optional) Weekly Q & A – Rm. 460
August/ September	31 8:30-12:30 Electrical properties of membranes. Cukierman SGPSS	1 8:00-12:00 Mitochondrial ATP synthesis. Cukierman SGPSS	2 11:30-12:30 (390) Required Genetics Project Meeting. 1:30-5:30 Intracellular compartments I&II Frankfater (120 min) SGPSS	3 8:30-12:30 Vesicular trafficking. Frankfater SGPSS 12:30-1:30 (optional) Weekly Q & A – Rm. 360	4 9:30-1:30 Lysosomal biogenesis, endocytosis & secretion. Frankfater SGPSS (Alternate rooms)
September	7 Labor Day	8 8:00-9:00 Cell signaling I. Simmons 9:00-12:00 SG—Genetics project: planning, literature search.	9 1:30-5:30 Cell signaling II. Simmons SGPSS	10 8:30-12:30 **Introduction to Histology/Microscopic views of organelles. Clancy/Kovacs (120 min) LAB	11 9:30-1:30 **Cell junctions & Extracellular matrix Manteuffel (120 min) SGPSS 2:30-3:30 (optional) Weekly Q & A – Rm. 360
September	14 8:30-12:30 Exam 2	15 8:00-12:00 Cytoskeleton I & II. Denning (120 min) LAB	16 1:30-5:30 The epithelium. Clancy LAB	17 8:30-12:30 Extracellular matrix; Connective Tissue. Clancy LAB	18 9:30-1:30 Bone and Cartilage. Callaci (120 min) LAB 2:30-3:30 (optional) Weekly Q & A – Rm. 360
September	21 8:30-12:30 Skin & oral cavity/Skin disorders. Clancy (120 min) LAB	22 8:00-12:00 Cell Cycle I. Schultz SGPSS	23 12:30-5:00 Student Genetics Presentations	24 8:30-12:30 Cell Cycle II- Mitosis. Schultz SGPSS	25 9:30-1:30 Cell Cycle III- Apoptosis Schultz (90 min) SGPSS 2:30-3:30 (optional) Weekly Q & A –Rm. 460
September /October	28 (Yom Kippur)	29 8:00-12:00 Cancer Molecular Genetics I. Schultz SGPSS 1:30-4:30 Histology Review	30 1:30-5:30 Cancer Molecular Genetics II. Schultz SGPSS	1 8:30-10:30 Pre-Exam Review	2 8:00-12:00 Exam 3 Written and Practical

Bold = lectures longer than 60 minutes.

*This material covered on Exam 2; **This material covered on Exam 3.

MOLECULAR CELL BIOLOGY & GENETICS – 2009

Course Description

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1. COMPETENCY-BASED GOALS AND OUTCOME OBJECTIVES

The first semester Molecular Cell Biology and Genetics course (MCBG) will help you to learn the fundamental molecular, cellular, and genetic processes common to all mammalian cells, with an emphasis on clinical relevance. The course will also involve you in three of Loyola's educational projects: the Vertical Genetics Curriculum, the competency-based curriculum, and the outcomes approach to assessment. (Go to <http://www.lumen.luc.edu/lumen/goals.htm> to see the complete Loyola University Chicago SSOM Competency Goals and Outcomes.)

In MCBG, you will be evaluated in four of the six competency goals. When you successfully achieve the specific MCBG objectives for competency in 1) **Medical Knowledge** and 2) **Lifelong Learning, Problem-solving and Personal Growth**, you will have the necessary skills and attitudes to build a personal framework for understanding the scientific basis of medicine. You will also be prepared to master key principles and concepts taught in subsequent medical school courses. When you achieve the specific MCBG objectives for competency in 3) **Interpersonal and Communication Skills** and 4) **Professionalism**, you will be prepared to work effectively with your peers in other medical school courses as well as in collaborative health care provider groups in a clinical setting. (See Section 10.)

2. OUTCOMES-BASED SELF-ASSESSMENT PLAN

To become a successful independent learner, it is important that you evaluate your current strengths and weaknesses and set goals for improving your knowledge and skills. This activity creates a learning cycle of

Plan→Do→Assess.



We have provided forms at the end of this Introduction to assist you in this process. The first one is the Precourse Self-Assessment and Goal-Setting Form (**Form 1**). You should complete this form during orientation week and bring a copy to the first Small Group session for your faculty facilitator. In addition to self-assessment, this form will provide the faculty with information on your background knowledge, skills, and attitudes in the four core competencies related to the course. It will be used at your one-on-one meeting with your faculty facilitator(s) during Week 2.

You should reassess your goals at the end of Week 4 using the Midcourse Self Assessment Form (**Form 2**). You can discuss these goals or any issues related to Small Group with your facilitator(s) or with the course director, Dr. Simmons, at any time.

3. COURSE ORGANIZATION

The emphasis of the course will be on **student-centered** learning. The class will meet 4 hours daily, five days a week. You will be assigned daily readings from the textbooks or occasionally from a journal article. You will also be provided with a CD that contains lecture notes. These files have a list of key concepts and learning objectives to guide your reading and studying, as well as important figures and explanations from the lecture. You may find it useful to print these files and bring them to class for note-taking. These files, as well as lecture slides and video recordings of the lectures, will also be posted to the course schedule on the LUMEN website.

Most class meetings will begin with a 60, 90, or 120 minute lecture in room 190 to reinforce and/or supplement the reading. The lecture will be followed by a small group problem-solving session (SGPSS). These sessions will give you an opportunity to integrate information and to apply your knowledge to analyze and solve problems. Finally, you will return to the lecture hall for a “recap” session, where a faculty member will go over the problem set and answer questions. The course also includes six histology lab sessions.

To maximize your learning during lectures, SGPSS and labs, you should review the lecture notes and read related information from the textbook assignment prior to each class meeting. By reviewing the notes and reading the textbooks, you will be able to anticipate topics to be covered in lecture. Consequently, you can pay particular attention to difficult concepts and ask specific questions. In addition, it is your professional obligation to come to the small group sessions prepared so that you can contribute intelligently to the conversation, and to the problem-solving process. Preparedness will be considered when evaluating your competency in professionalism.

Weekly Q&A Sessions are scheduled on Friday afternoons. These informal sessions will give you the opportunity for individualized interactions with faculty who have lectured during the previous week (Fri.-Thurs.). You can also address questions to faculty and to other students through a computer-based webforum that can be accessed through the MCBG website (see Section 12). Finally, you will participate in an independent research/learning activity called the Medical Genetics Project (see

Section 9). This project will culminate in a group oral presentation at a conference session to be held on Sept. 23.

The course topics are organized into modules, beginning with Protein Structure and Function (8/3-6/09), followed by Molecular Biology (8/7-19/09), Medical Genetics (8/20-27/09), Cell Biology (8/28/09-9/11/09), Histology (9/10-21/09), Advanced Molecular and Cell Biology (9/22-30/09), and the Medical Genetics Conferences (9/23/09).

There will be three exams in the course. The first two exams will consist of USMLE-type multiple choice questions, and are scheduled for a Monday. Exam 1 (Aug. 24) will cover content through Wed., Aug. 19. Exam 2 (Sept. 14) will cover content from Aug. 20 through Sept. 9. Exam 3 (Oct. 2) will consist of two parts. One part will be a laboratory practical that covers the six histology lab sessions and uses the virtual microscope (computer). The other part will be a standard multiple-choice exam that will cover lecture content (including histology) from Thurs., Sept. 10, to the end of the course, as well as information presented in the Medical Genetics Conferences. Both Exam 2 and Exam 3 will also contain some questions on material covered in previous exams. Two parts of the Medical Genetics Project, the presentation and the annotated bibliography, will also be graded.

4. COURSE GRADING

The final course grade will be based on assessment of both the **Medical Knowledge Competency** and the **Lifelong Learning Competency**.

Exams will be cumulative *in lieu* of a comprehensive final. The maximum number of possible points will be approximately 330, and divided as follows:

<u>Exam 1:</u>	
~6 one-point multiple choice questions for each daily session from Aug. 3-19:	≈ 80 pts.
<u>Exam 2:</u>	
a) ~5-6 one-point multiple choice questions for each daily session from Aug. 20- Sept. 9;	
b) 1-2 one-point multiple choice questions for each session, Aug. 3-19:	≈ 90 pts
<u>Exam 3 (written part):</u>	
a) ~5-6 one-point multiple choice questions for each session, Sept. 10-30;	
b) 1 one-point multiple choice question for each session, Aug. 3-Sept. 9;	
c) 2 one-point multiple choice questions for each disease covered in the Medical Genetics student presentations (12 pts):	≈ 100 pts
<u>Exam 3 (histology practical, virtual microscope):</u>	40 pts
<u>Medical Genetics Project:</u>	
a) Presentation (slides/oral delivery):	10 pts
b) Written annotated bibliography:	10 pts

Final grades will be determined from the percentage of the total points achieved:

Honors:	$\geq 91.5\%$
High Pass:	$\geq 81.5\%$ and $< 91.5\%$
Pass:	$\geq 69.5\%$ and $< 81.5\%$
Fail:	$< 69.5\%$

Students who fail will be assigned a “Does Not Meet Expectations” for the **Medical Knowledge Competency** in the End-of-Course Competency Assessment Form (Form 7). Students who pass but score less than 75% can be assigned a “Meets Expectations with Concern.” (See Section 10.)

The evaluation of the **Interpersonal and Communication Skills Competency** and the **Professional, Moral Reasoning, and Ethical Judgment Competency** will be entered into the End-of-Course Competency Assessment Form (Form 7) by the course directors in consultation with faculty facilitators as discussed in more detail in Section 10.

5. IMPORTANT DATES

Aug. 3:	First day of class. Bring a copy of completed Form 1 to Small Group.
Aug. 7:	Sign up for required individual meetings with Small Group facilitators.
Aug. 24:	Exam 1
Aug. 31:	Bring completed Form 2 to Small Group. Sign up for optional individual meetings with Small Group facilitators.
Sept. 2:	Required Medical Genetics Project meeting (Leischner Hall-390, 11:30-12:30).
Sept. 8:	Small Group Medical Genetics Project planning session.
Sept. 14:	Exam 2
Sept. 18:	E-mail Medical Genetics Project abstract (Word or pdf file) to Dr. Frankfater.
Sept. 21:	Post the Medical Genetics Project abstract and slides to the Webforum.
Sept. 23:	Student Presentations, Medical Genetics Project.
Sept. 25:	Submit written materials for the Medical Genetics Project to course directors.
Oct. 2:	Exam 3: Part 1: Written; Part 2: Histology Practical (virtual microscope)

6. TEXTBOOKS AND LECTURE NOTES

The following textbooks will be used in this course and in subsequent SSOM courses:

Molecular Biology of the Cell, 5th edition (2008), by Alberts, *et. al.*

Textbook of Biochemistry With Clinical Correlations, 6th edition (2006), ed. by Devlin

Thompson and Thompson's Genetics in Medicine: With STUDENT CONSULT Online Access, 7th edition, (2007), by Nussbaum, McInnes and Willard

Basic Histology, 11th edition (2005), by Junqueira and Carneiro.

Wheater's Functional Histology: A Text and Colour Atlas (with CD), 5th edition (2006), by Young and Heath

The course lecture notes (on CD and LUMEN) for each day's session consist of a list of Key Concepts and Learning Objectives as well as copies of most slides used in lecture. The lecture notes may also contain brief discussions of material inadequately covered in the text. However, you should take notes on the assigned readings and in lecture using the learning objectives as a guide. You will be expected to demonstrate understanding of all Key Concepts at the level indicated by the Learning Objectives. Note that the **Learning Objectives can be covered in one or more of the following: reading assignment or lecture/class discussion or small group work.**

The library subscribes to a lecture series called the “Henry Stewart Talks” (accessible from the Library homepage). The series includes slide-containing lectures by scientists who are experts on several of the topics covered in this course; these can provide additional information for the interested student.

7. ATTENDANCE

You are expected to attend all lectures, small group meetings, recap sessions, and labs. This is especially important since Learning Objectives (and exam questions) may be covered in the reading or in ANY of these sessions. Student evaluations for the **Interpersonal and Communication Skills** and **Professionalism** competencies are based primarily on observations made by facilitators during SG PSS and lab sessions, and frequent absences lead to assessments based on less data. A pattern of unexcused absences will result in an unsatisfactory rating for **Professionalism**.

Make-up written/practical examinations will be given only in cases of excused absence as outlined in Part I of the Academic Policy Manual. Attendance at the Medical Genetics Presentations is expected since it is a part of your professional obligation to the course. Individuals unable to be present on their scheduled day may receive partial credit for the project by preparing an extensive written report. Such absences are expected to be rare and due to emergency only. Petition for partial credit must be made in writing and will be considered on a case-by-case basis.

8. LEARNING IN SMALL GROUPS

You will spend part of each day working on problems in a small group of 6-7 students. Your group will meet along with two other groups and an assigned facilitator (see Section 14) in a specific Learning Cluster room:

Groups 1,2,3	Room 340	Groups 13,14,15	Room 440
Groups 4,5,6	Room 350	Groups 16,17,18	Room 450
Groups 7,8,9	Room 370	Groups 19,20,21	Room 470
Groups 10,11,12	Room 380	Groups 22,23,24	Room 480

You should report to your room after each lecture, assemble into your group, and receive a problem set from the faculty facilitator. Consistent with the student-centered philosophy of this course, the 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 normally asked to respond to a question with another question, or to direct students to raise the issue during the “recap session” that follows. A combination of good communication and problem-solving skills, a lively curiosity, and preparation (by reading the textbook and actively listening to lectures) will assure that one of the goals of small group sessions is met, namely that you achieve a deeper understanding of concepts by applying your knowledge in a novel context. 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 both orally and in writing (e.g., at the flipchart). Importantly, they have respect for one another and the desire to include everyone in the discussion. Group members and facilitators will use the Small Group Assessment Forms (Forms 3 and 4) regularly to provide feedback to individuals and the group to assist in developing these skills and behaviors (Sections 18). Following the small group session, the class will reassemble in the lecture room for a “recap session” where faculty will discuss the problems and answer student questions.

At the end of the course, the course directors, in consultation with the faculty facilitators, will provide a summative evaluation of your competency in **Interpersonal and Communication Skills** and in **Professionalism (Form 7, End-Of-Course Competency Assessment Form)**, based both on your performance in Small Group and on the Medical Genetics Project (Section 9).

9. MEDICAL GENETICS PROJECT

Overview

The Medical Genetics Project is a small group exercise. You and your group will research information about a specific genetic disease and teach your findings to your classmates and faculty in a formal oral presentation. This project has several goals. It will give you an opportunity to further develop your ability to search for, and critically evaluate, scientific evidence for the principles and concepts covered in the course. This goal is important since there is now a vast array of powerful technologies and databases that are specific for medicine and basic medical sciences. These resources require significant practice to locate and use. The project will also add to your knowledge about a subset of Genetics Disorders that were selected by the Loyola Genetics Subcommittee as illustrating important principles in human genetics, patient care, and societal issues. Finally, this project will give you the opportunity to practice teaching difficult medical concepts to your peers, and ultimately to patients.

Assignments and Schedule

Location	Time	Presenting Groups	Topic
Room 345	12:30 – 1:05	Group 1 (Room 340)	Cystic fibrosis
	1:10 – 1:45	Group 2 "	Familial breast cancer
	1:50 – 2:25	Group 3 "	Fragile X syndrome
	2:30 – 3:05	Break	
	3:10 – 3:45	Group 4 (Room 350)	MEERF
	3:50 – 4:25	Group 5 "	Familial hypercholesterolemia
	4:30 – 5:05	Group 6 "	Hereditary hemochromatosis
Room 375	12:30 – 1:05	Group 7 (Room 370)	Cystic fibrosis
	1:10 – 1:45	Group 8 "	Familial breast cancer
	1:50 – 2:25	Group 9 "	Fragile X syndrome
	2:30 – 3:05	Break	
	3:10 – 3:45	Group 10 (Room 380)	MEERF
	3:50 – 4:25	Group 11 "	Familial hypercholesterolemia
	4:30 – 5:05	Group 12 "	Hereditary hemochromatosis
Room 445	12:30 – 1:05	Group 13 (Room 440)	Cystic fibrosis
	1:10 – 1:45	Group 14 "	Familial breast cancer
	1:50 – 2:25	Group 15 "	Fragile X syndrome
	2:30 – 3:05	Break	
	3:10 – 3:45	Group 16 (Room 450)	MEERF
	3:50 – 4:25	Group 17 "	Familial hypercholesterolemia
	4:30 – 5:05	Group 18 "	Hereditary hemochromatosis
Room 460	12:30 – 1:05	Group 19 (Room 470)	Cystic fibrosis
	1:10 – 1:45	Group 20 "	Familial breast cancer
	1:50 – 2:25	Group 21 "	Fragile X syndrome
	2:30 – 3:05	Break	
	3:10 – 3:45	Group 22 (Room 480)	MEERF
	3:50 – 4:25	Group 23 "	Familial hypercholesterolemia
	4:30 – 5:05	Group 24 "	Hereditary hemochromatosis

A required class meeting is scheduled for Wednesday, Sept. 2, from 11:30-12:30 PM in Leischner Hall (Room 390) to discuss the genetics project requirements and to answer your questions. Your group should meet as often as necessary to complete the project (including the Sept. 8 Small Group session). Student presentations are scheduled in different rooms on Sept. 23, 12:30-5:00. You should plan to attend all student presentations in your room, in part because there will be questions on Exam 3 on the content of these talks.

Project Details

Grading: The Medical Genetics Project contributes 32 points to the total of about 330 points (~10%) that make up the final course grade (see Section 4). There will be 2 multiple-choice questions for each of the six diseases (12 points) on Exam 3. There will also be 10 points designated for evaluation of your presentation (slides/oral delivery) and 10 points for evaluation of your written documentation of your literature research (see below).

Literature Search: Your small group should do a literature search on your assigned disease. Among the topics that you can research are disease etiology, pathogenesis, phenotype and natural history, management, inheritance risk, and family, social, legal, and ethical issues that relate to the specific disorder. It is not necessary or even desirable to research and present all possible topics. The nature and amount of current medical knowledge about each disorder varies, so it should become apparent from your research which issues are most important to stress for your assigned disease.

It is important for your group to work together to teach each other information and then to incorporate this information into an organized and non-redundant oral presentation. **However, each member of the group should initially do their own literature search. You should document your search strategy since you are being asked to submit an annotated bibliography to the course directors** (see below). The process of developing a good search strategy is a learning experience that will take time and involve some failure.

Acceptable sources of information are textbooks, review articles, online resources (e.g. NIH, scholarly societies, patient advocate groups, etc.), evidence-based medicine reviews, and original research articles. You can get help in finding reliable information from the LUMC Library Website link “Resources for Medical Students,” which contains catalogs, online textbooks, databases, etc.

For resources specific to the assigned genetic diseases, see

http://library.luhs.org/hslibrary/resources_for/MCBG_guides.html. **As one of your strategies, you must do a search of the current primary research literature in Medline, using either OVID or PubMed as the search engine. You should not rely solely on secondary sources (reviews).** Use the tab “Training/Education” on the Library Website and click on “Guides and Tutorials” to get detailed instructions on 1) how to use databases, 2) how to conduct a literature search, and 3) how to evaluate the reliability of the information you find. You and your group can get personal help by contacting Ms. Jeanne Sadlik (Coordinator for References & Education Services, Health Science Library) (X6-5304; jsadlik@lumc.edu) or a member of her staff.

The following are some useful websites that specifically reference genetic diseases:

www.meddean.luc.edu/lumen/MedEd/genetics: This is Loyola’s LUMEN Genetic Task Force webpage. Click on “Core Disorders” to get a brief description of each disease.

www.geneclinics.org: presents detailed scientific reviews of specific genetic disorders, as well as labs and clinics that test for and treat specific disorders by locality (state).

www.ncbi.nlm.nih.gov/sites/entrez/?db=OMIM: Online Mendelian Genetics in Man (OMIM) website and database. “Search morbid map” (listed on left side of page) generates an alphabetical list of diseases, the affected genes, and their chromosomal locations

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=gnd> : Genes and Diseases website. The navigation tool on the left side of the page links viewers to specific classes of diseases. Clicking on a specific chromosome at the top identifies known diseases, associated genes, and their locations on that chromosome. Clicking on the disease gene gives some basic information about the disease.

List of genetics sites: <http://library.luhs.org> : “E-Resources,” “Resources by Subject,” “Genetics.” PubMed, Medical Genetics Search: From the LUHS library webpage (<http://library.luhs.org/>), select PubMed under the heading ‘Quick Links’. From the PubMed page select Clinical Queries under the heading ‘PubMed Services’. At the Clinical Queries page you can carry out a ‘Medical Genetics Search’ near the bottom of the page. Enter the disease in the search window and select a category such as ‘Diagnosis’, ‘Clinical Description’, ‘Management’, ‘Genetic Counseling’, etc. You can also search the same disease under the heading “Search by Clinical Study Category” near the top of the page. The search categories here are ‘Etiology’, ‘Diagnosis’, ‘Therapy’, ‘Prognosis’, etc. Finally, you can search for a systematic review of a genetic disorder under the heading ‘Find Systematic Reviews’ in the middle of the page. Each search produces a list of papers with the opportunity to view abstracts, if available. One can also click on an author’s name and retrieve a list of related publications by that author.

Abstract Submission: Your group should prepare a clear and concise abstract (less than two-thirds of a page single-spaced), which summarizes your research findings and the content of your presentation. Make sure that the abstract contains your group number. Send it as a Word (please not as docx.) or pdf file by e-mail to Dr. Frankfater (afrankf@lumc.edu) by Sept. 18. The abstracts from all groups in your presentation room will be collated and distributed at the session.

Posting abstract/slides: Post your abstract and your group’s PowerPoint slides to the Webforum by Sept. 21 (see Section 12). This information will then be available to your classmates for studying for the 12 questions that will appear on Exam 3.

Presentation: Your group’s presentation should be 30 minutes long, and will be followed by a 5-minute audience question period. Although each member can discuss a specific aspect of the genetic disease, make sure that the individual talks are well integrated. Your group should practice aloud ahead of time to make sure that there is no unnecessary duplication of material, and that the talk fits into the 30-minute time frame. Groups that go significantly overtime will have points deducted. You should carefully read the **Tips for preparing slides**, and **Tips for giving your presentation** sections below for additional information.

Documentation of the literature search: Each student will be evaluated on his or her ability to conduct an effective literature search and to critically evaluate scientific and medical literature (see **Form 6**). Therefore, you should submit to the course directors an annotated bibliography that documents these abilities. The bibliography should include 8-10 items from a variety of sources. At least two of these should come from an OVID or PubMed search of current research literature. In a few sentences, provide the following information for each reference:

- a) The type of reference (e.g., textbook, a journal literature review article, primary research article, clinical trial data, meta-analysis, evidence-based practice recommendations, web-based scientific society or patient advocacy information).
- b) A statement of the key information provided in the reference.

- c) How you found the reference. For OVID or PubMed references, indicate the search terms used and how you manipulated the terms.
- d) The reliability of the information. Document that the information is current. If you suspect that the authors may have biases or conflicts of interest, so indicate.

You should prepare your own materials as a separate file identified by name and group. However, the course directors would appreciate it if the files of all members of a group were submitted to them in a single e-mail or on a single CD. These files are due no later than 5 PM on Friday, Sept. 25. Failure to submit the abstract (Sept. 18), post the abstract and slides on the Webforum (Sept. 21), or submit the annotated bibliographies (Sept. 25) by the indicated deadlines will result in the deduction of points from either the Presentation grade or the Research and Analysis grade, and may result in a 'Meets with Concerns' for the Professionalism Competency.

Evaluation: The Medical Genetics Project will be evaluated in three different ways. You will be tested on your knowledge of the six genetic diseases through 12 multiple choice questions on Exam 3. Your presentation will be evaluated by the faculty members who attend your session (see **Form 5**). The course directors will collate these evaluations and assign up to 10 points toward your final grade (see **Form 6**). (Some students who are at the session will also be asked to evaluate your group presentation, but these evaluations will not be used systematically to determine your grade.) Finally, the ***Documentation of the literature search*** materials will be evaluated by the course directors who will assign up to 10 points toward your final grade using **Form 6**. (We will read these!)

Satisfactory completion of the Medical Genetics Project will result in a "Meets Expectations" in the **Lifelong Learning Competency** in the End-of-Course Competency Assessment Form (Form 7). This project will also contribute to the evaluation of the other core competencies (**Medical Knowledge; Interpersonal and Communication Skills; and Professionalism**).

Tips for preparing slides:

- a. Use a simple, consistent background for each slide
- b. Use large letters for text (16 font or above).
- c. Identify a single main idea for each slide and use it as a title.
- d. The title and other text should consist of key words or short phrases, not long sentences. (Fill in the information with your narrative.) Each slide should contain no more than 6 key words/phrases. Limit the number of slides that have just bullet points.
- e. Enhance your message with pictures, graphics, etc. (The best slides may have little or no added text. "A picture is worth a thousand words!") Keep figures relatively simple and easy to understand.
- f. Incorporate features such as color, animation, transitions, arrows, etc., that focus attention and emphasize concepts, but don't overdo it.
- g. Limit the total number of slides to 3-4 per group member.

Tips for giving your presentation:

Each presenter should begin by identifying herself/himself by name. This is particularly important because some faculty members who will be evaluating the presentations may not know each presenter personally. The first presenter should provide an overview of the genetic disorder and a description of the topics that will be discussed by the group. Each presenter should begin by stating their topic and end with a "take-home" message(s). The last presenter should end by briefly summarizing the major "take-home" messages of all previous presenters.

Some general guidelines are:

- a. *Devise strategies that elicit audience interest and aid recall (e.g, involving the audience in active learning such as asking questions, eliciting responses, etc.)*
- b. *Tell the audience what you are going to say, say it, and then tell them what you have just said. (tell-say-tell)*
- c. *Explain the features of each slide. Relate the content to previous and subsequent slides.*
- d. *Use a pointer to keep the audience focused.*
- e. *Speak loudly enough to be easily heard in the back of the room. Make your voice expressive and interesting. Speak slowly and distinctly so that you can be easily understood.*
- f. *Whenever possible, maintain eye contact with all sections of the audience.*
- g. *Exhibit a relaxed appearance and display a suitable enthusiasm for your topic.*

Project a professional image:

- a. *Dress and groom in a manner appropriate for a professional conference.*
- b. *Demonstrate respect for the audience and respect for the content of each presentation.*
- c. *Attribute sources where appropriate.*

10. EXAMS AND EVALUATION FORMS: Assessment of Competency-based Goals and Objective.

Medical knowledge will be evaluated by USMLE- type multiple-choice questions. **The testing procedures resemble those of the USMLE and have been adopted by all courses at the medical school.** Examinations will be administered by computer. Students are not permitted to ask questions during exams. Students who are suspected of cheating at any time during an exam will be asked to leave the examination room and will receive a failure on that exam. Such matters will be handled in accordance with procedures established by the Medical School Council. The final course grade (Honors, High Pass, Pass, Fail) will be based on these exams of medical knowledge as well as on the Lifelong Learning component of the Medical Genetics Project as discussed above. Course failures will be treated in accordance with Part I of the Academic Policy Manual.

The evaluation of the four core competencies covered in this course will be reported on **Form 7**. The level of competency will be designated by “Meets Expectations”, “Meets Expectations with Concerns”, or “Does Not Meet Expectations”. Any grade of “Does Not Meet Expectations” or “Meets Expectations with Concerns” will be accompanied by a comment specifying what generated the concern and what needs improvement. **These competency grades will be part of your record at Loyola, and will be reported to a Council of Competency Directors, which tracks the progress of individual students throughout all four years of the curriculum.** A “Student Progress Committee,” in consultation with the appropriate course and competency directors, will assist students who fail to meet expectations in a particular competency to develop a remediation plan. Students who do not remediate a “Does Not Meet Expectations” or who have accumulated multiple “Meets with Concerns” in a given competency by the end of the year 2 can be prevented from proceeding to year 3. The evaluation of competency outcomes has become a feature of undergraduate and graduate (residency) medical education throughout the United States, and is not unique to MCBG or Loyola.

11. TUTORING, LEARNING ASSISTANCE, AND COMPUTER LAB

It is the faculty’s goal that all students successfully complete this course. To this end, the faculty will provide assistance to any student requesting it. Consult sections 13-15 for faculty office locations and telephone numbers.

Learning assistance is available from Beth A. Sonntag, M.Ad.Ed., Director of the Teaching and Learning Center. Her office location and phone number are: Room 255, 216-5447. She can provide help in such areas as test-taking skills, note-taking and study skills, managing stress, and managing time. Many of your classmates will take advantage of these resources, so you should not hesitate to seek assistance. Her office can also provide tutors for students who need additional help. ALL students are urged to consult the Teaching and Learning Center website, www.meddean.luc.edu/tlc, for a listing of services and scheduled workshops that are offered to students.

12. WEBFORUM

The student and faculty participants in this course have been placed into a computer Webforum group to facilitate online discussion of learning issues. The Webforum is accessed through LUMEN (Loyola University Medical Education Network) at www.meddean.luc.edu/lumen/meded/cellbio/index.htm. Students may post questions via the forum at any time, using their personal computers and modems from home or the networked computers in the computer lab (CALL). Faculty will check this online discussion daily and will post responses the same or next day. In addition, faculty may post additional information, practice questions, short videos, animations, etc., that will enhance student understanding of lecture concepts. Student response to questions and faculty postings is encouraged and expected. We hope this discussion will bring the faculty and students together into an interactive learning community to enhance the quality of our collective understanding of the Key Concepts in this course.

13. FACULTY: COURSE LECTURERS

John Clancy, Ph.D., Research Bldg. 102, room 5653, X63352

John Callaci, Ph.D., EMS Bldg. 110, room 4249, X72461

Samuel Cukierman, M.D., Ph.D., Research Bldg. 102, room 4626, X69471

Mitchell Denning, Ph.D., Cancer Ctr., room 304, X73358

Andrew Dingwall, Ph.D., Cancer Ctr., room 334, X73141

Kimberly Foreman, Ph.D., Cancer Ctr., room 235, X73320

Allen Frankfater, Ph.D., **ASST. COURSE DIRECTOR**, Research Bldg. 102, room 6661, X68109

Carolyn Jones, M.D, Ph.D., EMS Bldg. 110, room 2216, X79132

Elizabeth Kovacs, Ph.D., EMS Bldg. 110, room 4232, X72477

Caroline Le Poole, Ph.D., Cancer Ctr., room 203, X72032

Mary Manteuffel, Ph.D., Research Bldg. 102, room 6635, X63370

Richard Schultz, Ph.D., Research Bldg. 102, room 6653, X69378

William Simmons, **COURSE DIRECTOR**, Ph.D., Research Bldg. 101, room 2724, X63362

Nancy Zeleznik-Le, Ph.D., Cancer Ctr., room 337, X73368

14. FACULTY: SMALL GROUP FACILITATORS

Mauruzio Bocchetta, Ph.D., Cancer Ctr., room 204, X73362

Michael Collins, Ph.D., Research Bldg. 101, room 2276, X64560

Samuel Cukierman, M.D., Ph.D., Research Bldg. 102, room 4626, X69471

Kimberly Foreman, Ph.D., Cancer Ctr., room 235, X73320

Allen Frankfater, Ph.D., Research Bldg. 102, room 6661, X68109

Earle Holmes, Ph.D., LUH McGaw Entrance, room 0121, X63292

Caroline LePoole, Ph.D., Cancer Ctr., room 203, X72032

Mary Manteuffel, Ph.D., Research Bldg. 102, room 6635, X63370

Gregory Mignery, Ph.D., Research Bldg. 102, room 5603, X61181

Clodia Osipo, Ph.D., Cancer Ctr., room 238, 72372

Margaret Prechel, Ph.D., EMS Bldg. 110, room 5225, X72754

Richard Schultz, Ph.D., Research Bldg. 102, room 6648, X63360

William Simmons, Ph.D., Research Bldg. 101, room 2724, X63362

Karen Visick, Ph.D., Maguire Ctr., room 3860A, X60869

15. FACULTY: LAB FACILITATORS

Melanie Bollnow, Hines VA, room D400L, 202-7496

Lee Cera, D.V.M., Ph.D., Bldg. 101, room 0745, X66746

John Clancy, Ph.D., Research Bldg. 102, room 5653, X63353

John Callaci, Ph.D., EMS Bldg. 110, room 4249, X72461

Elizabeth Kovacs, Ph.D., Bldg. 110, room 4232, X72477

Phong Le, Ph.D., Research Bldg. 102, room 5644, X63603

Fletcher White, Ph.D., Research Bldg. 102, room 0747, X66728

Pamela Witte, Ph.D., Research Bldg., room 5679, X63358

16. COURSE STAFF

Maureen Locklund, Course Coordinator, SSOM, room 320, X7989

17. SMALL GROUP PROBLEM-SOLVING SESSIONS: ROOMS AND FACILITATORS

Room 340 – Richard Schultz, Ph.D.
Groups 1, 2, 3

Room 350 – William Simmons, Ph.D.; Mary Manteuffel, Ph.D.
Groups 4, 5, 6

Room 370 – Caroline Le Poole, Ph.D.; Earle Holmes, Ph.D.
Groups 7, 8, 9

Room 380 – Margaret Prechel, Ph.D.; Karen Visick, Ph.D.
Groups 10, 11, 12

Room 440 – Allen Frankfater, Ph.D.; Samuel Cukierman, M.D., Ph.D.
Groups 13, 14, 15

Room 450 – Clodia Osipo, Ph.D.; Jiwang Zhang, M.D., Ph.D.
Groups 16, 17, 18

Room 470 – Michael Collins, Ph.D.; Gregory Mignery, Ph.D.
Groups 19, 20, 21

Room 480 – Kimberly Foreman, Ph.D.; Maurizio Bocchetta, Ph.D.
Groups 22, 23, 24

18. SUMMARY OF ASSESSMENT FORMS (following this Course Description, or online in LUMEN)

Form 1: Precourse Self-assessment and Goal Setting : to be completed by each student and turned in to the faculty facilitator at the first Small Group Problem Solving Session on Aug. 3. This form will be discussed at the one-on-one meeting with your facilitators during weeks 2-4.

Form 2: Midcourse Self-assessment: to be completed by each student and turned in to the faculty facilitators by the end of week 4 (August 31). This form may be discussed at your optional one-on-one meetings with your facilitators during week 5.

Form 3: Small Group Assessment, Student Version:

Form 4: Small Group Assessment, Facilitator Version:

There are two Small Group Assessment Forms, a student version and a facilitator version. Both forms assess interpersonal and communication skills, and professionalism. The student version describes the specific behaviors that individual members of a successful small group are likely to display. Individual students will use this form to self-assess, and to assess their groups and their peers. The facilitator version Part 4A will be used to identify specific problems that interfere with good group dynamics. It is expected that these problems will disappear as the course progresses. Facilitators will use Part 4B to communicate to the course directors that students have met expectations for the core-competencies of 1) interpersonal and communication skills, and 2) professionalism.

Facilitators will meet individually with each student from their small groups during Week 2-4 and, optionally, during Week 5 of the course to give formative feedback.

Form 5: Medical Genetics Presentation Assessment: to be completed by lecturers, facilitators and selected students in attendance at the genetic presentations. (However, the presentation grade will be determined solely by faculty members.)

Form 6: Course Directors' Grade Sheet, Medical Genetics Project: Part A indicates the grade point distribution for evaluation of the Genetics Project *Presentation*. The number of points given will be determined by faculty evaluations (Form 5). **Part B** indicates the grade point distribution for the *Research and Analysis* portion of the Genetics Project. The number of points given will be based on evaluation of the annotated bibliography that you submit to the course directors.

Form 7: End-Of-Course Competency Assessment: to be completed by the course directors with input from facilitators and staff members. The form reports an overall summative assessment of outcomes in the four core competency areas evaluated in this course. Data to be used include examinations, observations during SG PSS, and performance on the Genetics Project. Students are encouraged (but not required) to use the forms to self assess.