MCBG-2011 At-a-Glance Course Schedule

Month	Monday	Tuesday	Wednesday	Thursday	Friday
August	1 8:30-9:00 **Intro to MCBG** Simmons/Frankfater 9:00-1:00 **Amino acids, peptides, & polypeptides.** Schultz **(90 min)** SGPSS	2 8:00-12:00 **3-D structure of proteins.** Schultz **(90 min)** SGPSS	3 1:30-5:30 **Protein function.** Schultz **(90 min)** SGPSS	4 9:00 – 1:00 **Enzyme Kinetics** Schultz **(90 min)** SGPSS	5 8:00-12:00 **Organization & packaging of chromosomes.** Zeleznik-Le **(90 min)** SGPSS 12:00-1:00 (optional) Weekly Q & A – Rm. 360
August	8 9:00-1:00 **DNA replication. Introduction to mitosis.** Zeleznik-Le **(90 min)** SGPSS	9 8:00-12:00 **Recombinant DNA Techniques.** Foreman **(90 min**) SGPSS	10 1:30-5:30 **DNA repair & recombination. Introduction to meiosis.** Dingwall **(90 min)** SGPSS	11 9:00-1:00 **RNA synthesis & processing.** Foreman **(90 min)** SGPSS	12 9:30-1:00 **Protein synthesis.** Foreman. SGPSS 1:00-2:00 (optional) Weekly Q & A – Rm. 360
August	15 9:00-12:30 **Transcription Regulation I.** Schultz SGPSS	16 8:00-12:00 **Transcription Regulation II.** Schultz **(90 min)** SGPSS	17 1:30-5:30 **Posttranscriptional Gene Regulation.** Frankfater **(90 min)** SGPSS	18 8:30-12:00 * **Cytogenetics Principles.** Frankfater **(90 min)** SGPSS	19 9:30-10:30 **Clinical Cytogenetics.** Jones 10:30-12:00 (optional) Weekly Q & A – Rm. 360
August	22 8:30-12:30 **Exam 1**	23 8:00-11:30 **Patterns of single gene inheritance.** Le Poole SGPSS	24 1:30-5:30 **Genetic variations in individuals and populations.** Le Poole **(90 min)** SGPSS	25 8:30-12:30 **Genetics of complex diseases.** Frankfater **(90 min)** SGPSS	26 9:30-1:30 **Membranes I & II.** Cukierman **(120 min)** SGPSS 2:00-3:00 (optional) Weekly Q & A – Rm. 460
August/ September	29 8:30-12:00 **Electrical properties of membranes.** Cukierman SGPSS	30 8:00-11:30 **Mitochondrial ATP synthesis.** Cukierman SGPSS	31 11:30-12:30 **Required Genetics Project Meeting** (Room 390). 1:30-5:30 **Intracellular compartments I&II** Frankfater **(120 min)** SGPSS	1 9:00-12:30 **Vesicular trafficking.** Frankfater SGPSS	2 9:00-12:30 **Lysosomal biogenesis, endocytosis & secretion.** Frankfater SGPSS 12:30-1:30 (optional) Weekly Q & A – Rm. 360
September	5 **Labor Day**	6 8:00-12:00 **Introduction to Histology/Micro-scopic views of organelles.** Campbell/Kovacs **(120 min)** **LAB	7 1:30-5:30 ***Cell junctions & Extracellular matrix** Manteuffel **(120 min)** SGPSS	8 8:30-12:30 ***Cytoskeleton I&II.** Denning **(120 min)** **LAB	9 9:30-12:00 ** **Histology: The epithelium.** Clancy **LAB 12:00-1:00 (optional) Weekly Q & A – Rm. 360
September	12 8:30-12:30 **Exam 2**	13 8:00-11:00 **Histo: Extracellular matrix; Connective Tissue.** Clancy LAB	14 1:30-5:30 **Cell signaling I.** Simmons SG: Genetics project planning.	15 8:30-12:30 **Cell signaling II.** Simmons SGPSS	16 9:30-1:30 **Histo: Bone & cartilage.** Callaci **(120 min)** LAB
September	19 8:30-12:00 **Cell Cycle I.** Schultz SGPSS	20 8:00-11:30 **Cell Cycle II-Mitosis.** Schultz SGPSS	21 11:30-1:15 and 2:00-3:45 (assigned rooms) **Student Genetics Presentations**	22 8:30-12:30 **Histo: Skin & oral cavity** **Clinical: Skin disorders.** Clancy **(120 min)** LAB	23 9:30-1:30 **Cell Cycle III-Apoptosis** Schultz **(90 min)** SGPSS 2:30-3:30 (optional) Weekly Q & A –Rm. 360
September	26 8:30-12:00 **Cancer Molecular Genetics I.** Schultz **(90 min)** SGPSS	27 1:30-5:00 **Cancer Molecular Genetics II.** Schultz **(90 min)** SGPSS	28 1:30-5:30 Pre-Exam Review Histology Review (optional)	29 Study Day	30 8:00-12:00 **Exam 3** **Written and Histology Practical**

Lectures are 60 minutes unless otherwise noted in bold times.
*This material covered on Exam 2; **This material covered on Exam 3.

MOLECULAR CELL BIOLOGY & GENETICS – 2011
Course Description

CONTENTS

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.stritch.luc.edu/lumen/goals.pdf to see the complete Loyola University Chicago SSOM Competency Goals and Outcomes.) MCBG specific goals and outcome objectives can be found through the course website or at http://www.stritch.luc.edu/lumen/MedEd/cellbio/MCBG11/GoalsandObjectives.PDF.

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 Weeks 2-4.

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 3½-4 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 the reading assignment and a list of key concepts and learning objectives to guide your reading and studying, as well as important figures and explanations from the lecture. The learning objectives tell you what you need to know, and will be especially useful for testing yourself in preparation for the exam. 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 calendar 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 Question and Answer (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 the computer-based Moodle 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. 21.

The course topics are organized into modules: Protein Structure and Function (Aug. 1-4), Molecular Biology (Aug. 5-17), Medical Genetics (Aug. 18-25), and Cell Biology interspersed with Histology (Aug. 26-Sept. 27).

There will be three exams in the course. The first two exams, scheduled for a Monday, will consist of USMLE-type multiple choice questions. Exam 1 (Aug. 22) will cover content through Wed., Aug. 17. Exam 2 (Sept. 12) will cover content from Aug. 18 through Sept. 8 (but not Aug. 19 or Sept. 6). Exam 3 (Sept. 30) 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 Sept. 6 and Sept. 9-27, as well as information on the six genetic diseases 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 oral 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:

Exam 1:
~6 one-point multiple choice questions for each daily session from Aug. 1-17: ≈ 80 pts.

Exam 2:
a) ~5-6 one-point multiple choice questions for each daily session from Aug. 18- Sept. 8 (but not Aug. 19 or Sept. 6);
b) 1-2 one-point multiple choice questions for each session, Aug. 1-17: ≈ 90 pts

Exam 3 (standard multiple choice part):
a) ~5-6 one-point multiple choice questions for each session, Sept. 6 and 9-27;
b) 1 one-point multiple choice question for each session covered on exams 1 and 2;
c) 2 one-point multiple choice questions for each disease covered in the Medical Genetics student presentations (12 pts): ≈ 100 pts

Exam 3 (histology practical, virtual microscope): 40 pts

Medical Genetics Project:
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:	≥ 91.5%
High Pass:	≥ 83.0% and < 91.5%
Pass:	≥ 69.5% and < 83.0%
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. 1:	First day of class. Bring a copy of completed **Form 1** to Small Group.
Aug. 5:	Sign up for required individual meetings with Small Group facilitators.
Aug. 8:	Special lecture on biomedical literature searches by the librarians (2:30).
Aug. 16:	Turn in the Genetics Project preliminary literature search to the librarians.
Aug. 22:	Exam 1
Aug. 26:	Bring completed **Form 2** to Small Group. Sign up for optional individual meetings with Small Group facilitators.
Aug. 31:	Required Medical Genetics Project meeting (Leischner Hall-390, 11:30-12:30).
Sept. 12:	Exam 2
Sept. 14:	Small Group Medical Genetics Project planning session.
Sept. 16:	E-mail Medical Genetics Project abstract (Word or pdf file) to Dr. Frankfater.
Sept. 19:	Post the Medical Genetics Project abstract and slides to Moodle.
Sept. 21:	Student Presentations, Medical Genetics Project.
Sept. 23:	Submit written materials for the Medical Genetics Project to course directors.
Sept. 30:	Exam 3: Part 1: Standard multiple choice questions; 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, 7th edition (2010), 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 the 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.***

7. ATTENDANCE

You are expected to attend all lectures, small group meetings, recap sessions, and labs. (You will be asked to sign an attendance sheet in labs.) This is especially important since Learning Objectives (and exam questions) may be covered in ANY of these sessions. During small group sessions, students work collaboratively to assist each other in learning. Therefore, attendance is viewed as a professional obligation. Excused absences based on reasonable grounds are permitted, provided students inform their fellow group members and their facilitator in advance whenever possible. 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 all of 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 through the handouts and related textbook material, 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 piers, and ultimately to patients.

The different assignments for the Genetics Projects are spread throughout the course. Your first responsibility is to attend **a special lecture by the librarians at 2:30 on Aug. 8 in Tobin Hall** (190). The librarians will show you how to do a search of the National Library of Medicine "Medline" database using the Ovid search engine. You will then be asked to do a preliminary search for publications related to a particular aspect of your assigned genetic disease (see ***Literature Search*** below). The following steps should be used:

1. Select the appropriate database and timeframe.
2. Analyze the specific question that you are trying to answer in your search by writing it down on a sheet of paper and then listing the key concepts that will be used in your search.
3. Choose the appropriate MeSH subject heading for each concept.
4. Use the Explode option if appropriate.
5. Effectively narrow the results as needed:
    a. Select subheadings
    b. Use the correct Boolean logic to combine concepts
    c. Apply appropriate limits (i.e., age groups, language)
    d. Use Focus
    e. Add additional MeSH headings
    f. Search efficiency (i.e., did not limit every search statement, did not use unnecessary search terms)
6. Identify relevant citations in your search that will help to answer your question.

Turn in a copy of your search strategy along with 3-5 references to the librarians by Aug. 16 for their analysis and comments. You can drop it off in the library or e-mail it to ResearchServices@lumc.edu.

A required class meeting is scheduled for Wed,, Aug. 31, from 11:30-12:30 in Leischner Hall (Room 390) to discuss additional Genetics Project requirements and to answer your questions. Your group should meet as often as necessary to complete the project (including the Sept. 14 Small Group session). Student presentations are scheduled in different rooms on Sept. 21 from 11:30-3:40, with a lunch break in the middle. You should plan on attending all student presentations in your room, in part because there will be questions on Exam 3 on the content of these talks. See the table below for the genetic disease assignments for each small group and a detailed schedule. Each talk is scheduled for 25 minutes followed by a 5-minute question and answer period.

Assignments and Schedule

Location	Time	Presenting Groups	Topic
Room 345	11:30 – 12:00	Group 1 (Room 340)	Cystic fibrosis
	12:05 – 12:35	Group 2 "	Familial breast cancer
	12:40 – 1:10	Group 3 "	Familial hypercholesterolemia
	1:15 – 1:55	Lunch Break	
	2:00 – 2:30	Group 4 (Room 350)	Fragile X syndrome
	2:35 – 3:05	Group 5 "	MERRF
	3:10 – 3:40	Group 6 "	Acute intermittent porphyria
Room 375	11:30 – 12:00	Group 7 (Room 370)	Cystic fibrosis
	12:05 – 12:35	Group 8 "	Familial breast cancer
	12:40 –1:10	Group 9 "	Familial hypercholesterolemia
	1:15 – 1:55	Lunch Break	
	2:00 – 2:30	Group 10 (Room 380)	Fragile X syndrome
	2:35 – 3:05	Group 11 "	MERRF
	3:10 – 3:40	Group 12 "	Acute intermittent porphyria
Room 445	11:30 – 12:00	Group 13 (Room 440)	Cystic fibrosis
	12:05 – 12:35	Group 14 "	Familial breast cancer
	12:40 – 1:10	Group 15 "	Familial hypercholesterolemia
	1:15 – 1:55	Lunch Break	
	2:00 – 2:30	Group 16 (Room 450)	Fragile X syndrome
	2:35 – 3:05	Group 17 "	MERRF
	3:10 – 3:40	Group 18 "	Acute intermittent porphyria
Room 460	11:30 – 12:00	Group 19 (Room 470)	Cystic fibrosis
	12:05 – 12:35	Group 20 "	Familial breast cancer
	12:40 – 1:10	Group 21 "	Familial hypercholesterolemia
	1:15 –1:55	Lunch Break	
	2:00 – 2:30	Group 22 (Room 480)	Fragile X syndrome
	2:35 – 3:05	Group 23 "	MERRF
	3:10 – 3:40	Group 24 "	Acute intermittent porphyria

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: In addition to the preliminary Ovid search described above, your small group should do a more detailed 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. **Each student in the group should be responsible for one aspect of the disease. Your group should make these assignments before doing the preliminary Ovid search.** 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 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 advocacy 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 "MCBG Search Guides" (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 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 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.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/bookshelf/br.fcgi?book=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 Tools". At the Clinical Queries page you can carry out a "Medical Genetics Search" at the top right 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 "Clinical Study Category" at the top right 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 top 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 or pdf file by e-mail to Dr. Frankfater (afrankf@lumc.edu) by Sept. 16. 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 Moodle by Sept. 19 (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 25 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 25-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. Groups 1-12 should send their files to Dr. Simmons. Groups 13-24 should send them to Dr. Frankfater. These files are due no later than 5 PM on Friday, Sept. 23. Failure to submit the abstract (Sept. 16), post the abstract and slides on the Webforum (Sept. 19), or submit the annotated bibliographies (Sept. 23) 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 oral 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.*
h. ***Put your name in small print at the bottom right-hand corner of each slice so that the course directors can identify the author for grading purposes.***

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 guildlines 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. For figures, put a small abbreviated citation nearby.*

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. In addition to the weekly Question and Answer sessions, the faculty will provide individual assistance to any student requesting it. Consult sections 13-15 for faculty office locations, telephone numbers, and e-mail addresses. Current lecturing faculty will also maintain office hours in SSOM in room 242, with the schedule to be announced.

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. MOODLE

The student and faculty participants in this course have been placed into a computer Moodle group to facilitate online discussion of learning issues. Moodle is accessed through LUMEN (Loyola University Medical Education Network) at www.meddean.luc.edu/lumen/meded/cellbio/index.htm. Students may post questions at any time. 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. Moodle is preferred over direct e-mails to faculty since the questions and answers are available to all students. If your question is not being answered, it is appropriate to send an e-mail notice to the faculty member to check Moodle.

13. FACULTY: COURSE LECTURERS

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14. FACULTY: SMALL GROUP FACILITATORS

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15. FACULTY: LAB FACILITATORS

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John McNulty, Ph.D., Loyola Hospital North Entrance, room 0617, X6-5161, jmcnulty@lumc.edu

Frederick Wezeman, Ph.D., Maguire Center, room 2882, X6-1165, fwezema@lumc.edu

Pamela Witte, Ph.D., Loyola Hospital North Entrance, room 5679, X6-3358, pwitte@lumc.edu

16. COURSE STAFF

Maureen Locklund, Course Coordinator, SSOM, room 320, X6-7989, mlocklund@lumc.edu

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.; Karen Visick, Ph.D.
Groups 7, 8, 9

Room 380 – Margaret Prechel, Ph.D.; Earle Holmes, Ph.D.
Groups 10, 11, 12

Room 440 – Allen Frankfater, Ph.D.
Groups 13, 14, 15

Room 450 – Andrew Dingwall, Ph.D.; Clodia Osipo, 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 (which follow this Course Description, or are available 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. 1. 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 (Aug. 26). This form may be discussed at your optional one-on-one meetings with your facilitators during week 4-5.

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 Weeks 4-5 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 SGPSS, and performance on the Genetics Project. Students are encouraged (but not required) to use the forms to self assess.

FORM 1 PRECOURSE SELF-ASSESSMENT AND GOAL SETTING

After completing this page, make a copy and give it to your small group facilitator on August 1, 2011.

Your Name: _____

Undergraduate College: _____

Year of Graduation: _____ Major(s): _____

A. **Self Assessment:** Using the definitions below, indicate your current level of understanding (proficiency) for each of the 5 broad Medical Knowledge topics covered in MCBG (see Course Description) by placing an "X" in the appropriate box.

Definitions:
Novice - little or no exposure to terminology or content knowledge in this area;
Advanced Beginner - knowledge of terminology and basic concepts; can solve problems with help from source books; beginning to search for underlying reasons; uncertain when explaining basic concepts to others;
Competent - significant experience applying knowledge to solve common problems and analyze data without help from source books; requires consultation for complicated problems; generally able to explain basic concepts to others;
Proficient - able to apply knowledge to solve problems and analyze data in unfamiliar contexts; acts as consultant to others.

Level	Protein Structure & Function	Molecular Biology	Medical Genetics	Cell Biology	Basic Histology
Novice					
Adv. Beg.					
Competent					
Proficient					

B. Please describe your past learning and experience related to these content areas.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

C. Please describe any training and/or significant experience related to Interpersonal and Communication Skills, Professionalism, and Lifelong Learning/Problem Solving you have had.

D. Please describe **YOUR goals and expectations at this time** for each of the **4 Competency Goals** for this course.

1. Medical Knowledge:

2. Interpersonal and Communication Skills

3. Professionalism, Moral Reasoning, and Ethical Judgment

4. Lifelong Learning, Problem-solving, and Personal Growth

FORM 2 **MIDCOURSE SELF-ASSESSMENT**

After completing this page, make a copy and give it to your small group faculty facilitator by August 26, 2011. Optional feedback sessions will take place August 29 – Sept. 2, 2011.

STUDENT:_____

Write a short paragraph addressing the following questions:

1. Please review the goals and expectations you wrote in the precourse self-assessment for the 4 competencies that are evaluated for this course. What have you done to achieve your goals and expectations for this course? Are you achieving your goals and expectations for this course? Why or why not?

2. If you wish to revise your goals and/or expectations, please describe them in a short paragraph.

3. What do you plan to do in order to better meet your goals and expectations for this course?

FORM 3 **SMALL GROUP ASSESSMENT** ***STUDENT VERSION***

STUDENT (and GROUP #) being assessed: _____

DATE: _____ **ASSESSOR:** _____

Instructions:
Ongoing feedback: **Evaluate yourself**, **another group member, or your group as a whole** by using the criteria listed in the table. This form can be used for daily or weekly feedback on group dynamics. This student version of the form differs from that used by faculty facilitators in that it attempts to make explicit the kinds of behaviors that individual members of a successful small group are likely to display. Part I of the form identifies activities that are likely to promote a successful solution to the problem that the group is addressing. They are listed in the approximate order in which the activities should occur. Part II identifies non-verbal communication skills and behaviors that contribute to a successful small group and that are likely to maximize the satisfaction of individual group members. Circle the number to the right of each outcome objective that best represents your judgment for the activity described.

3 = Observed to a significant extent; at or above expected level (corresponds to 'meets expectations').
2 = Observed to a moderate extent; expected behavior inconsistently demonstrated (corresponds to 'meets expectations with concerns').
1 = Observed to a small extent; needs improvement (corresponds to 'does not meet expectations').

Part 1. Communication and Problem Solving

COMMUNICATION (Opening)	
Greeting:	
• *Acknowledges each group member at the beginning of the session in a positive manner*	1 2 3
Calibration:	
• *Brief chat with other group members to assess potential barriers to communication (e.g., no sleep, illness, not prepared, etc.)*	1 2 3
COMMUNICATION (Gathering information)	
Goal Setting:	
• *Reads problem before beginning*	1 2 3
• *Discusses problem-solving goals and priorities*	1 2 3
Questioning:	
• *Starts with open-ended question to review relevant information (e.g., Can we review topic A because it seems relevant to this problem?)*	1 2 3
• *Progresses to focused questions to request specific information pertaining to the problem (e.g., Can anyone define the term --------- in this problem? or How do we interpret this figure?*	1 2 3
COMMUNICATION (Achieving a solution)	
Problem Content:	
• *Explicitly assures that everyone has the same understanding of terms and concepts*	1 2 3
• *Identifies pertinent data to be analyzed*	1 2 3
Knowledge:	
• *Acknowledges opinion versus fact*	1 2 3
Process:	
• *Attempts to obtain information/opinions from all group members*	1 2 3
• *Restates others' comments to clarify and/or indicate understanding*	1 2 3
• *Uses flip chart for diagrams, lists, etc., to keep process group-centered*	1 2 3
• *Avoids side discussions with other group members*	1 2 3
• *Encourages group to reach agreement by consensus*	1 2 3

Part 2. Skills and Behaviors

COMMUNICATION SKILLS (Non-verbal)	
Eye Contact:	
• *Uses eye contact to convey interest and attentiveness*	1 2 3
Body Language:	
• *Uses posture (upright), gestures (e.g. nodding) and sounds (e.g. "mmhmm) to convey interest, understanding, and encouragement*	1 2 3
Silences:	
• *Pauses (three or more seconds) to give others a chance to speak*	1 2 3
• *Refrains from interrupting others*	1 2 3
RELATIONSHIP SKILLS:	
Respect:	
• *Open and honest about own strengths and weaknesses (knowledge, skills, attitudes)*	1 2 3
• *Values others by acknowledging their efforts and contributions*	1 2 3
• *Respectful of others' opinions and point of view*	1 2 3
Partnership:	
• *Willingness to be helpful and work together*	1 2 3
GROUP SKILLS	
Ground Rules:	
• *Refers to ground rules to guide individual and group behavior*	1 2 3
Evaluation:	
• *Promotes and participates in regular group evaluation. ("How effective was our problem-solving process.?" "Did we address all the issues relevant to the problems?" "Where can we improve?"* NOT *"Were the problems solved?")*	1 2 3
• *Participates in the evaluation of individual group members in a constructive and respectful manner*	1 2 3
Conflict Resolution:	
• *Identifies areas of conflict and initiates strategies (discussion, resources, etc.) for resolving disputes in a timely manner*	1 2 3
PROFESSIONALISM	
Demeanor:	
• *Conduct and dress is appropriate for the learning situation and does not distract from the group work*	1 2 3
Conduct:	
• *Punctuality (arrives promptly, avoids keeping group waiting); explains lateness or absence; informs group of known future absences*	1 2 3
• *Honesty (admits errors, acknowledges any weaknesses or lack of preparation)*	1 2 3
Preparation:	
• *Prepares for SGPSS by reading, attending lectures, and preparing learning objectives*	1 2 3
PERSONAL DEVELOPMENT	
• *Evaluates own performance in small group*	1 2 3
• *Evaluates own performance in MCBG, sets goals, and devises strategies to achieve them*	1 2 3

COMMENTS: STUDENTS: If using this form to self-assess, write what you think you do well and what you'd like to improve. Share this with your group members. If assessing another group member, write what you think that person does well and what they could improve (be specific). Share this assessment with the other group members.

FORM 4A **SMALL GROUP ASSESSMENT** ***FACILITATOR VERSION***

STUDENT:_____ **GROUP #:**_____

FACILITATORS: _____

Instructions:
If you observe any of the following problems, please indicate this with a checkmark. Follow the student's behavior throughout the course. Indicate in the "Remediation" box what you have done to try to help the student and group improve.

Behaviors	**Week**								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Attendance: frequent unexcused absences and/or lateness									
Preparation: appears not to be prepared for small group									
Participation:									
- tends to dominate the discussion									
- contributes little to the discussion									
- fails to utilize the flip chart									
Professionalism:									
- frequently interrupts others									
- fails to acknowledge or respect others' opinions									
- fails to be group-centered (*excessive* side-conversations or distractions)									

Remediation:

FORM 4B **END-OF-COURSE ASSESSMENT (Facilitators)**

STUDENT: _____

FACILITATORS: _____

Instructions:
At the end of the course, both facilitators should get together and provide a final assessment of each student's performance in small group. Using the criteria below, circle the appropriate number to the right.

3 = Meets expectations - observed to a significant extent; ability at or above expected level.
2 = Meets expectations with concerns - observed to a moderate extent; behavior inconsistently demonstrated.
1 = Does not meet expectations - observed to a small extent; needs improvement.

The final assessment rating should reflect improvements that were made and/or abilities that were maintained at expected levels. The assumption is that all students will be "3," i.e., at the expected level or better. Lower ratings **must** be supported by specific comments that justify the rating. **Turn this form in to the course directors.**

COMMUNICATION: Uses *verbal language* effectively:	1 2 3
• Helps to initiate the discussion. • Helps identify alternative solutions and discusses relative merits of each. • Promotes and participates in discussion to reach agreement by consensus.	
COMMUNICATION: Uses effective *listening skills* and elicit and provide information using effective *nonverbal*, *explanatory, and questioning skills*:	1 2 3
• Demonstrates interest and understanding. • Refrains from interrupting others. Encourage others to participate by waiting to comment. • Attempts to obtain information and opinions from all group members. • Regularly restates to clarify and/or indicate understanding. • Explicitly assures that everyone has same understanding of terms and concepts.	
COMMUNICATION: Uses *written language* effectively:	1 2 3
• Use flip chart and/or board for diagrams, lists, etc. to keep process group-centered and open to other learning styles.	
COMMUNICATION: *Facilitates the learning of other students*, including giving effective feedback:	1 2 3
• Provides constructive, meaningful and nonthreatening verbal feedback to others in the group.	
PROBLEM SOLVING: Demonstrates an *investigatory and analytic thinking* approach:	1 2 3
• Participates in the definition of problem-solving goals before offering possible solutions. • Contributes to the identification and evaluation of pertinent data to be analyzed and alternative problem-solving strategies.	
PROFESSIONALISM: *Behaves professionally*:	1 2 3
• Preparation (comes to the small group problem-solving session prepared) • Punctuality (explains lateness or absence; informs of known future absences) • Honesty (admits errors, acknowledges any weaknesses or lack of preparation) • Respect (acknowledges the efforts and contributions of others).	
PROFESSIONALISM: *Interacts effectively* with other small group members:	1 2 3
• Refers to/obeys Group Ground Rules governing behaviors that promote group effectiveness • Identifies areas of conflict and initiates strategies (discussion, resources, etc.) for resolving conflicts in a timely manner.	

COMMENTS:

FORM 5 MEDICAL GENETICS PRESENTATION ASSESSMENT

GROUP NO: _____TITLE_____

ASSESSOR: (students can remain anonymous) _____

Instructions for Individual Assessment: For each student, provide a Global Rating for each main category (white box) using the following scale:

3 = Meets expectations
2 = Meets expectations with concern
1 = Does not meet expectations

Put a checkmark in a gray box where the student needs specific improvement.

Individual Presentation Attributes	**Student Name**					
Communication - Verbal						
Identified themselves by name						
Clear introduction, middle, and conclusion.						
Effectively explained important features of each slide.						
Effectively used pointer to keep audience focused.						
Clear voice (loudness, no mumbling) throughout presentation.						
Rate of speech appropriate throughout presentation.						
Varied voice intonations to keep audience interest.						
Demonstrated no nervous habits that distracted from presentation.						
Did not read notes excessively or at all.						
Communication - PowerPoint Slides						
Each slide had a clear title that identified a single main idea						
Key words were used in place of lengthy sentences						
Pictures, graphics, etc. were used to focus attention and emphasize concepts						
Professionalism						
Appropriate dress and grooming.						
Attributed sources where appropriate.						
Demonstrated respect for audience.						

Group Presentation Rating	
Presentation had a clear organizing theme, with clear main ideas and overall conclusion.	
Relationships between the topics within the presentation were clearly explained and made sense.	
All slides within presentation had a consistent background/theme.	
Each presenter understood the previous and subsequent presentations and how they related to their own topic.	
Enthusiasm for presentation was high and maintained throughout presentation.	
Group effectively involved the audience in active learning.	
Presentation took up the time allotted (not too long or too short)	

FORM 6 **COURSE-DIRECTORS' GRADE SHEET:**
MEDICAL GENETICS PROJECT

Student Name _____Group No._____

PART A: PRESENTATION (based on faculty evaluations – Form 5 – of the genetics presentation)

Competency: Interpersonal and Communication Skills

Outcomes Assessed:

- *Use written and verbal language effectively.*
- *Use information technology to manage information and communicate findings to other students.*
- *Facilitate the learning of other students.*
- *Communicate essential information effectively.*

Competency: Professionalism

Outcomes Assessed:

- *Behave professionally.*

Abilities:	**Possible Points**	**Points Earned**
Communication – Verbal (teaching fellow students)		
Communicated effectively:	2	
Worked effectively as part of a group (group rating)	2	
Communication – PowerPoint Slides	3	
Professionalism	3	
TOTAL	**10**	

PART B: RESEARCH and ANALYSIS (based on submitted annotated bibliography)

Competency: Lifelong Learning, Problem-solving, and Personal Growth

Outcomes Assessed:

- *Locate, appraise, critically review and assimilate evidence from scientific studies and medical literature.*
- *Use information technology learning resources to manage basic science information, access online information, and support your own education.*
- *Demonstrate an investigatory and analytic thinking approach.*

Abilities:	**Possible Points**	**Points Earned**
Write an annotated bibliography that demonstrates an effective use of information technology.		
Provide 8-10 citations from a variety of sources.	2	
Briefly indicate the key information in each reference.	2	
Describe how you found each reference.	2	
Indicate search terms used, and how the search was narrowed.	2	
Document that each reference is current and reliable.	2	
TOTAL	**10**	

FORM 7 END-OF-COURSE COMPETENCY ASSESSMENT

STUDENT: _____DATE: _____

Explanation of the evaluation form:

This form documents the performance of the student as it relates to the four core competencies that are measured in the Molecular Cell Biology and Genetics Course. The evaluation key is as follows:

3 = Meets expectations
2 = Meets expectations with concerns
1 = Does not meet expectations

This form was filled out by the course directors using a variety of data generated during the course. **Medical Knowledge** was assessed by three multiple-choice exams and a laboratory practical exam. **Interpersonal and Communication Skills** as well as **Professionalism** were evaluated based on final written reports by faculty facilitators of the Small Group Problem Solving Sessions and from faculty critiques of the Medical Genetics Project oral presentations. The **Life-long Learning, Problem-solving, and Personal Growth** competency was assessed from the student's written reports of their literature search for the Medical Genetics Project, and from written reports by faculty Small Group facilitators on problem-solving skills and self-assessment and goal-setting behavior. Any competency evaluation score that is less than 3 is supported by a short paragraph that provides specific examples that explain the basis of the assessment.

MEDICAL KNOWLEDGE	1 2 3
• Has a knowledge of fundamental facts and principles of Protein Structure-Function, Molecular Biology, Cell Biology, Genetics, and Histology	
INTERPERSONAL AND COMMUNICATION SKILLS	1 2 3
• Uses verbal language effectively. • Uses effective listening skills and elicits and provides information using effective nonverbal, explanatory, and questioning skills. • Uses written language effectively. • Facilitates the learning of other students, including giving effective feedback. • Communicates essential information effectively within their small group and with other students in the class.	
PROFESSIONALISM, MORAL REASONING AND ETHICAL JUDGEMENT	1 2 3
• Behaves professionally. • Interacts effectively with other small group members in the educational setting. • Recognizes and effectively deals with unethical behavior of other members of the class.	
LIFELONG LEARNING, PROBLEM-SOLVING AND PERSONAL GROWTH	1 2 3
• Is able to locate, appraise, critically review and assimilate evidence from scientific studies and medical literature. • Uses information technology learning resources to manage basic science information, access online information and support their own education. • Demonstrates an investigatory and analytic thinking approach in SGPSS and course projects. • Demonstrates a commitment to individual professional and personal growth.	

Comments: