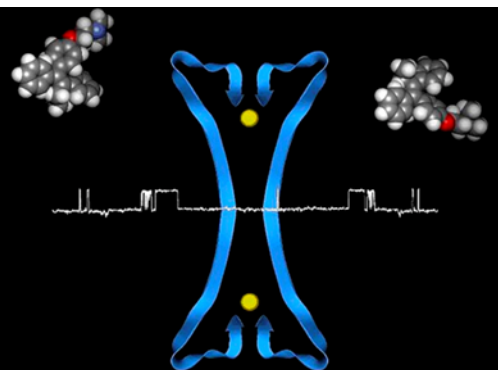


Fundamentals of Molecular Medicine



GNTD7068C Fall Semester 2019 Syllabus

The Fundamentals of Molecular Medicine course prepares students for the organ blocks by presenting foundational concepts and principles in molecular and cellular medicine. This includes an analysis of cellular structures and organelles, protein structure and function, nucleic acid biochemistry, replication and repair of DNA, the processes of transcription and translation, regulation of gene expression, modern molecular techniques used for diagnosis and research, the metabolism of carbohydrates, proteins, purines and pyrimidines, and fatty acids, human genetics (Mendelian and mitochondrial inheritance patterns and probabilities, positional cloning, cytogenetics, imprinting, triplet repeat expansions, multifactorial diseases, tumor suppressors, and the relevance of the human genome project to medicine), signal transduction pathways, and elementary nutrition. Mechanisms by which cells sense and respond to their environment will be presented, along with elementary pharmacodynamics, pharmacokinetics, and the absorption, distribution, metabolism and excretion of pharmacologically active compounds. Students will also be introduced to some of the basic concepts and principles of immunology and microbiology. The material learned in this course will form the background for all courses that follow, and will be expanded upon in the Fundamentals of Cellular Medicine course, and as organ-specific functions are discussed.

Course Directors Michael A. Lieberman, PhD (Email: lieberma@uc.edu)
Tel: 513-558-5645 • Office MSB 2253

John N. Lorenz, PhD (Email: lorenzjn@uc.edu)
Tel: 513-558-3046 • Office: MSB 4259

Keith Stringer, MD (Email: keith.stringer@uc.edu)
Tel: 513-636-9876 • Office CCHMC B4 214

Instructors Ensemble

Registration	Course #	Section	Call #	Credits	Class Schedule*	Location
	GNTD7068C	001	18755	5 G	Mon-Fri, 8:00AM-12:00PM	7051

Assessment Weekly Assessments (72%)

*Multiple-choice, computer-administered (CARE G810)
6 tests: 12% each = 72%*

Pharm Small Group (P/F)

*Powerpoint submission and presentation (MSB 4001/5)
Case presentations discussed in small groups (4 students/group) and then presented to entire class*

End of Block Exam (28%)

*Multiple-choice, NBME-administered (CARE G810)
Comprehensive test covering all material in the course*

Grading Grading will be in line with CoM policy with no adjustment for the distribution of scores. There is no option for the remediation of grades after the scheduled final exams (i.e. no make-up test).

A 90%–100%

B+ 82%–84.99%

B– 74%–77.99%

F Below 70%

A– 85%*–89.99%

B 78%–81.99%

C 70%–73.99%

* Note: threshold for A- (85%) may be adjusted up or down based on overall class average

Prerequisites Acceptance into Special Master's Program in Physiology

Attendance Lectures are recorded and streamed online and attendance is not mandatory. Students are responsible for the material presented in all didactic activities. Attendance is required at all learning sessions which involve team/small group based activities, all assessments and examinations and any session that has a patient as a presenter or has a panel of presenters.

Auditing No auditing option

Blackboard & Email Policy Messages sent via Blackboard/LCMS+ will be considered sufficient notice. You should make sure that you have entered your preferred email address in Blackboard under Tools → Personal Information → Edit Personal Information.

Textbooks *For Human Genetics and Cytogenetics:*
Jorde, Carey and Bamshad, Medical Genetics, 2015, 14th edition, Elsevier Publishing (print copy on reserve and also available electronically)
ISBN 978-0323188357

For Pharmacology:
Katzung BG, Basic and Clinical Pharmacology. 2014, 13th edition, Lange/McGraw, paper (print copy on reserve and also available electronically). The 14th edition will be available later in 2017.

Katzung BG and AJ Trevor, Examination and Board Review: Pharmacology, 11th edition, 2015, Lange/McGraw, ISBN 978-0071826358.

For Biochemistry:
Lieberman MA and AD Marks, Marks' Basic Medical Biochemistry, A Clinical Approach, 2013, 4th edition, Wolters Kluwer Lippincott Williams & Wilkins. (print copy on reserve and available electronically through the Health Sciences Library). The 5th edition has just come out, and readings will refer to both the 4th and 5th edition.

For Cell Biology/Histology:
Ross, MH, Pawlina, W. Histology: A Text and Atlas, 7th edition. 2016. Lippincott Williams & Wilkins. This book is available electronically when purchased. It is also available as an e-book through the library. Print copies of 6th and 7th edition on reserve.

For Physiology:
Textbook of Medical Physiology, 13th edition, by John E. Hall and Arthur C. Guyton, 2016, Elsevier. This will be available electronically in the HSL with no limitations. Older print editions on reserve.

Boron, WF and EL Boulpaep. Medical Physiology - A cellular and molecular approach, 2nd edition, 2012, Saunders Publishing. Print copy on reserve and also available electronically through the HSL with no limitations.

For Pathology:
Kumar, V, Abbas, AK, Fausto, N. Robbins and Cotran Pathologic Basis of Disease, 9th edition, 2015. Elsevier Saunders. (available as an e-book through the library, print copy of 8th edition on reserve)

For Nutrition:
Mahan, K, Escott-Stump, S, Raymond, J. Krause's food & the nutrition care process, Saunders, ISBN-978-0323340755. 14th edition (2016). Print copy on reserve.

For Immunology:
Abbas, A. and A. Lichtman, Basic Immunology – Functions and Disorders of the Immune System, 5th edition, 2016. ISBN-13: 978-1416055693 (available electronically, print copy of 4th edition on reserve).

For access through the Health Sciences Library use the following link to find all textbooks which have electronic access:

<http://libraries.uc.edu/hsl/research/com-ebooks.html>

Class schedule is posted in LCMS+ (<https://medicineonline.uc.edu>). Schedule is subject to change, and students are required to log-in regularly to for changes in the schedule.