



The Florida State University  
College of Medicine

# Medical Pharmacology 201

**BMS 6401**

**Fall 2010**

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## Instructors

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### **Course Director**

Graham A. Patrick, Ph.D.  
Office            Research Bldg., Room 3350-L  
Office Hours    M-F 2:00-4:00 p.m., other times by appointment  
Phone            644-8551  
Email            graham.patrick@med.fsu.edu

### **Faculty**

Gail Galasko, Ph.D.  
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Phillip Treadwell, Pharm.D.  
[phillip.treadwell@tmh.org](mailto:phillip.treadwell@tmh.org)

### **Faculty and Course Evaluation**

Students will have the opportunity to evaluate each faculty member who teaches a major portion of the course, using a standard evaluation questionnaire. Students will also have the opportunity to evaluate the course at its conclusion. Suggestions and comments concerning the course, its material and conduct, are welcomed and may be made to the Course Director at any time.

## Course Overview

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### **Course Goals**

This introductory course deals with the concepts of pharmacodynamics (e.g., drug-receptor interactions, signaling mechanisms, and dose-effect relationships) and pharmacokinetics (e.g., drug absorption, distribution, metabolism, and elimination). The course emphasizes the biochemical and physiological bases for understanding drug

action, and it introduces many major classes of drugs. Groups of drugs which are specifically considered include those acting on the autonomic nervous system, those most prominently affecting the immune system, those used in treating disorders of the cardiovascular and respiratory systems, and those used in treating neoplastic and infectious diseases.

## ***Learning Objectives***

### **Course Objectives**

The student should exhibit the following knowledge, skills, and behaviors:

#### ***Knowledge***

1. Demonstrate knowledge concerning each major drug class discussed in the course, including:
  - a. prototype drug(s),
  - b. mechanism(s) of action,
  - c. important therapeutic actions and applications, and
  - d. important (prevalent or life-threatening) adverse effects;
2. Demonstrate knowledge of the variations in drug response between individual patients, based upon disease, genetic traits, or other innate characteristics;
3. Demonstrate knowledge of the effect of age on pharmacodynamics, pharmacokinetics, and responses to therapy, with an emphasis on geriatric patients;
4. Develop an adequate basis of knowledge in pharmacology on which to build as the student advances through the clinical clerkship rotations;
5. Develop knowledge of drug classes and mechanisms into which additional drugs can be incorporated, compared, and contrasted as new drugs are developed and as the practice of medicine dictates.

#### ***Skills***

1. Demonstrate an understanding of the general types and clinical usage of drugs for treating diseases of each organ system;
2. Demonstrate the ability to recognize and understand the physicochemical and physiological factors that affect the absorption, distribution, metabolism, and elimination of drugs, and how these relate to pharmacokinetics;
3. Demonstrate the ability to interpret dose-response relationships for both desired and undesired drug effects;
4. Demonstrate an understanding of drug-receptor interactions and allied molecular phenomena at a basic level;
5. Demonstrate ability to interpret and analyze literature related to drugs.

#### ***Attitudes and behaviors:***

1. Demonstrate professional behavior during activities in the course by being in attendance when required, on time,

attentive, and a considerate and active participant in discussions.

### **Integration with COM Goals and Objectives:**

#### ***Knowledge***

- \* Demonstrate the application of the scientific bases of health, disease, and medicine to common and high impact medical conditions in contemporary society.
- \* Describe the development, structure and function of the healthy human body and each of its major organ systems at the macroscopic, microscopic, and molecular levels.
- \* Recognize and discuss the implications of altered structure and function (pathology and pathophysiology) of the body and its major organ systems that are seen in various diseases and conditions.
- \* Identify changes in the structure and function of the human body associated with the aging process and be able to distinguish normal changes associated with aging from those that denote disease.
- \* Describe the molecular basis of diseases and maladies and the way in which they affect the body (pathogenesis).
- \* Demonstrate the ability to use basic biobehavioral and clinical science principles to analyze and solve problems related to the diagnosis, treatment, and prevention of disease.
- \* Demonstrate the ability to employ a comprehensive, multidisciplinary approach to the care of patients that integrates biomedical and psychosocial considerations.
- \* Recognize the implications of cultural, social, economic, legal, and historical contexts for patient care.
- \* Describe strategies to support life long learning via both print and electronic sources to assist in making diagnostic and treatment decisions (e.g., practice guidelines) and to remain current with advances in medical knowledge and practice (e.g., medical information data bases).

#### ***Skills***

- \* Demonstrate the ability to evaluate the patient's medical problems and to formulate accurate hypotheses to serve as the basis for making diagnostic and treatment decisions.
- \* Demonstrate the effective use of pharmacotherapeutic agents and other therapeutic modalities, while teaching patients the importance of preventative medicine, health promotion, and wellness.
- \* Demonstrate the ability to acquire new information and data and to critically appraise its validity and applicability to one's professional decisions, including the application of information systems technologies for support of clinical decision-making.
- \* Demonstrate the ability to organize, record, research, present, critique, and manage clinical information.

#### ***Attitudes/Behaviors***

- \* Demonstrate awareness of the health care needs of aging patients and a willingness to care for the elderly.

\* Demonstrate awareness of the unique health care needs of ethnically diverse populations and communities.

**Relationship of course objectives to the “Six Principles” of the Curriculum:**

1. The course is student-centered in providing a supportive, respectful environment in which to learn, while requiring that students be active and critical learners.
2. The course provides information that can be applied within a clinical context. Case-based learning and clinical situations are used to present and to reinforce knowledge and analysis.
3. The course is integrated with other courses in the year. Cases and examination questions integrate information from other disciplines, from the prerequisite biomedical sciences, and from clinical situations.
4. The course reinforces professional behavior in the classroom and small group settings. Ethical issues in relation to drug therapy or other drug usage are discussed. Application of biomedical science to patient care, in the form of pharmacotherapy, is a major emphasis of the course. Problem solving and critical thinking are promoted by classroom discussions, case discussions, examination questions, and written critique. Lifelong learning skills and management of information are promoted by the requirement for using online and library sources and by the application of information to novel situations.
5. Scholarship is encouraged primarily through an emphasis on the necessity of evidence-based utilization of drug therapy; e.g. evaluation of drug safety and efficacy, appropriateness of off-label usage of drugs, and post-marketing surveillance of drug effects.
6. Information is included in the course which deals with drug effects in specific populations such as women, geriatric patients, pediatric patients, and patients belonging to specific ethnic groups.

***Course Format***

The course consists of 45 lecture hours, 4 clinical discussion-tutorial sessions, and 4 small group discussion sessions.

## Competencies

FSUCOM – Competencies -Course Title BMS 6401		
Competency Domains	Competencies Covered in the Course	Methods of Assessment
Patient Care	X	Lecture, small groups, case-based clinical scenarios, quizzes, and examinations
Medical Knowledge	X	Lecture, small groups, quizzes, examinations, paper
Practice-based Learning	X	Treatment goals and targets (later built on in 3 <sup>rd</sup> year clerkships), quizzes and exams
Communication Skills	X	Drug Ad critique, communication skills in small group exercises and large group discussions
Professionalism	X	Socioeconomic & ethical issues related to drug therapy & usage; small group student evaluations
System-based Practice	X	Drug Ad critiques to become aware of bias and misleading information related to patient safety & quality improvement
NOTES:		

## Policies

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### ***Americans with Disabilities Act***

Candidates for the M.D. degree must be able to fully and promptly perform the essential functions in each of the following categories: Observation, Communication, Motor, Intellectual, and Behavioral/Social. However, it is recognized that degrees of ability vary widely between individuals. Individuals are encouraged to discuss their disabilities with the College of Medicine's [Director of Student Counseling Services](#) and the FSU Student Disability Resource Center to determine whether they might be eligible to receive accommodations needed in order to train and function effectively as a physician. The Florida State University College of Medicine is committed to enabling its

students by any reasonable means or accommodations to complete the course of study leading to the medical degree.

[The Office of Student Counseling Services](#)

Medical Science Research Building  
G146

Phone: (850) 645-8256 Fax: (850) 645-9452

This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center

97 Woodward Avenue, South

Florida State University

Tallahassee, FL 32306-4167

Voice: (850) 644-9566

TDD: (850) 644-8504

[sdrc@admin.fsu.edu](mailto:sdrc@admin.fsu.edu)

<http://www.fsu.edu/~staffair/dean/StudentDisability>

## ***Academic Honor Code***

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. (Florida State University Academic Honor Policy, found at <http://www.fsu.edu/~dof/honorpolicy.htm>.)

## ***Attendance Policy***

The College of Medicine has detailed attendance policies as they relate to each cohort and events that conflict with course schedules. See pages 27-29 of [FSUCOM Student Handbook](#) for details of attendance policy, notice of absences and remediation.

**For BMS 6401: Unexcused absence from a scheduled examination or quiz may result in a grade of zero (0 %) being assigned for that examination or quiz. Unexcused absence from an activity for which attendance is required (for example, Small Group session) will result in a one-point deduction in the final numerical grade for the course.**

## **Required Materials**

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### ***Required Textbook***

Basic and Clinical Pharmacology, 11th Ed. (2009), B.G.Katzung, ed. (Available online at COM Medical Library webpage under "E-Books", then scroll down to "Pharmacology" listing)



## **Required Website**

The Medical Letter on Drugs and Therapeutics (**required**, subject to examination) (*on Medical Library webpage under "Drug Information"*)

## **Recommended Materials**

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### **Textbooks**

Goodman and Gilman's The Pharmacological Basis of Therapeutics, 11<sup>th</sup> ed.

L.L. Brunton et al., eds., 2005. (Available online at COM Medical Library webpage under "E-Books", in the "Pharmacology" listing)

### **Review books**

Katzung & Trevor's Pharmacology Examination and Board Review, 8<sup>th</sup> ed., A.J. Trevor et al. eds., 2008. (An extensive review)

USMLE Road Map: Pharmacology, 2<sup>nd</sup> ed. (2006), B.G. Katzung and A.J. Trevor, eds. (An abbreviated review)

### **Websites**

Therapeutic Guidelines (*on Medical Library webpage under "Drug Information"*)

Facts and Comparisons (available on COM Medical Library website under "Drug Information")

e-Pocrates (available on COM Medical Library website and on Axim handheld devices)

MD Consult Drug Tab (available on COM Medical Library website under "Drug Information")

Prescriber's Letter (available on COM Medical Library website under "Drug Information")

# Grading

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## ***Assignments and weights***

Questions pertaining to Medical Pharmacology 201 will be included in the four integrated examinations in the Fall semester (total of approximately 135 questions) and in the integrated quizzes (total of 30 – 40 questions). In addition, there will be 3 announced quizzes, including 5 questions each. Each student will also be required to write a critique (1-2 pages, double-spaced, size 12 font) of a print, television, online, or radio advertisement for a drug product, and the critique will be graded on a 5-point scale (i.e., it will be equivalent to 5 examination questions). The types of questions may include computer-graded formats (multiple choice, matching) and open-ended, short answer questions.

Unexcused absence from a scheduled examination or quiz may result in a grade of zero (0 %) being assigned for that examination or quiz. Unexcused absence from an activity for which attendance is required (for example, Small Group session) will result in a one-point deduction in the final numerical grade for the course.

## ***Grading Scale***

The grade which the student will earn is based upon the percentage of all of the questions answered correctly (of a total of approximately 190 possible), according to the following scale:

<b>Grade</b>	<b>Percentage</b>
A	> 90.0 % correct
B	87.0 – 89.9 % correct
B+	80.0 – 86.9 % correct
C+	77.0 – 79.9 % correct
C	70.0 – 76.9 % correct
D	65.0 – 69.9 % correct
F	< 64.9 % correct