Pharmacology 203  General Pharmacology
3 credits CRN 62025 (online)

INSTRUCTOR: Allison Beale
OFFICE: Office hours TBA online
OFFICE HOURS: 8:00 a.m. – 9:00 a.m. TR And by appointment
TELEPHONE: Please use email
EMAIL: abeale@hawaii.edu
EFFECTIVE DATE: Summer 2016

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

This course is intended for students in nursing and allied health fields. It covers a wide range of drugs with emphasis on sites and mechanism of action, toxicity, fate and uses of major therapeutic agents.

Prerequisites: Grade of "C" or better in ZOOL 141 and ZOOL 142.
Recommended Preparation: College level chemistry.

Activities Required at Times Other Than Class Times (this course is ONLINE)

1. Self study
2. Extra credit

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are as follows:

1. Describe the basic mechanisms of drug action.
2. Demonstrate knowledge of the terminology and special concepts useful in the study of pharmacology.
3. Describe how differences between individuals govern their response to drugs.
4. Define how drugs are processed and biotransformed by the body.
5. Identify frequent complications and side effects associated with the major drug classes.
6. Describe significant interactions between drugs.
7. Use information from the pharmacokinetics of a specific drug to determine dosing schedules and best route of drug administration.
8. State the therapeutic uses for each major drug group.
Additionally, WCC recognizes four General Education Learning Objectives that can only fully be achieved by completing a variety of courses. PHRM 203 strives to fulfill outcomes related to the following General Education Learning Objectives.

1. Critical Thinking and Creativity
2. Communication
3. Information Literacy

**COURSE CONTENT**

**Concepts or Topics**
- Pharmacokinetics
- Pharmacodynamics
- Drug discovery and development
- Regulatory controls
- Drug label information
- Drug hazard warnings
- Uses and abuses of pharmaceuticals
- Medication errors
- Patient education

**Skills or Competencies**
- 1. Identify the use of a given drug
- 2. Identify warnings for a given drug
- 3. Pronounce generic names covered in class
- 4. Recognize stems and what they mean
- 5. Identify the class of a given drug
- 6. List & explain variables affecting therapeutics
- 7. Conduct online searches for drug label information

**COURSE TASKS**

**INSTRUCTIONAL METHODS FOR THE ONLINE COURSE REQUIRE A HIGH DEGREE OF SELF-MOTIVATION:**

1. Lecture – understand PowerPoint lecture material.
   a. You will have options, you may choose to:
      i. Read the assigned textbook chapters (required)
      ii. Listen to the recorded audio OR videos of the lectures (these are optional)
      iii. Listen to and watch Camtasia recordings of the lectures (these are optional)
         1. Most students find it most helpful to listen to the audio, or watch the Camtasia then read the text.
2. Interactive sessions – may include pronunciation drills of drug names.
3. Self-study – assigned reading, memorizing drug names (using flash cards or other techniques), completing SLO practice sets in the Laulima tool called Assignments, Tests and Surveys.
4. Quizzes and Examinations – complete daily quiz related to each lecture as well as midterms and a final exam.
   All quizzes and exams are online in Assignments, Tests and Surveys. You must use a hard-wired internet connection. If you use a wireless device of any kind, and Laulima drops the connection, the quiz will NOT BE RESET for any reason. This is course policy.

This course is semi-self-paced through the corresponding University of Hawaii academic semester. It is STRONGLY recommended that you follow the chronological order of topics as listed in general schedule of lectures found in this syllabus. This will make it easier for you to keep up with the frequent quizzes and will ensure that if you do find yourself unable to progress on your own, you may join a face-to-face reviews, and potentially, if there is room, and one is offered, a face-to-face class.

The course materials that are cataloged in the “Course Index” of the PHRM 203 Laulima website will be available to you for the duration of the semester (except timed items such as extra credit), which will allow you to return to materials if you want to review them, or to cover them in a different order. AGAIN, it is strongly recommended that you keep to the schedule posted. Until you get into trouble it will be very challenging to appreciate the difficulty you will have on your own should you get behind.
Understand that IT IS NOT EASIER to take PHRM 203 online than it would be to take the course in the traditional classroom setting. In fact, unless you are very organized and self-motivated, you may find it very difficult to continually make the effort not only to memorize all the drug names, but to also learn about the kinetics and dynamics we cover.

If any student emails me a question or a concern, I make a practice of availing all other students of my reply (with identifying information redacted). I generally check my UH Email a few times a day and normally respond within 48 hours at the latest (excepting weekends and holidays). Most questions will be addressed within 24 hours. All replies are made through the UH email or the mailtool in Laulima.

Students are expected to check their email daily during the week and login at least three times/week during the Spring or Fall semesters and at least five times/week during the Summer Sessions. If you don’t respond to emails or login over a prolonged period (one week), then I will assume you intend to drop the course.

Please click on the link and read about “What makes a successful online student.” There are a number of very important concepts covered in this pamphlet including:

- Writing and computer skills are critical for success,
- You must be willing to speak up IMMEDIATELY if problems arise. I most certainly do not have ESP and won’t know if you don’t email me. You cannot let things slide and hope for the best.
- You must be self-motivated and highly disciplined. It is completely on you to keep up and stay on track.

**ATTENDANCE**

Attendance is required to PHRM 203, whether you are taking the face-to-face course or taking it online. It is absolutely essential that you log on to the PHRM 203 Laulima site **a minimum of three times per week** during the Spring and Fall or five times per week during the Summer, to read all the lecture and assigned materials. If there are public discussions, it is essential that you read these as well. Your participation ON A WEEKLY BASIS is not only **required**, it is an essential aspect of the online course process. All students are expected to do the assigned work and to notify the instructor, by email, when emergencies arise.

**ASSESSMENT TASKS AND GRADING**

**EXAMINATIONS**

ALL TIMES, FOR QUIZZES, EXAMS, OR ANY OTHER MATERIAL, INCLUDING DUE DATES, ARE HAWAII STANDARD TIME. MAKE SURE YOU ARE AWARE OF TIME DIFFERENCES IF YOU ARE NOT IN HAWAII FOR THE TERM!

Quizzes will be worth 10 points each. Total value is approximately 230 points.

The midterm exam is worth 300 points. The final exam will be worth 500 points.

During regular semesters, there are two assignments worth 40 total points, however in the summer, there is only one assignment worth 10 points.

**The total for all examinations, quizzes and assignments will be approximately 1040-1070 points.**

Online participants will need to be able to schedule in time to take the proctored midterm and final at their home campus Learning Resource/Testing Center. Click on this link to go to the list of **UH testing centers**. In order to take the exam, you will need to bring a photo ID. The exams will be available during the week of the face-to-face exam, but will be timed for the same duration as a class session. All exams are CLOSED BOOK and NO NOTES or SMART DEVICES are allowed.

The midterm and final are multiple-choice exams similar in content and structure to the SLO review questions. These exams will require the student to demonstrate knowledge and understanding of information and concepts presented in lecture, reading assignments, worksheets and other handouts, as well as information presented from internet resources. You are expected to MASTER the SLO practice questions that are available on line in the
Assignments, Tests and Surveys tool of our Laulima site. At least 75% of each exam is from these questions.

The quizzes will be an assessment of the student’s ability to recall drug names from the previous reading assignment and lecture. Quizzes will be online. They will be timed, generally 10 questions, and matching. Each quiz will be available only during the week matching the lecture schedule.

There may be up to ten (10) extra credit opportunities worth up to 10 points each. There is no “make up” or “late” work accepted for the extra credit assignments. You will have access to the materials needed to complete the extra credit at the bottom of the “Course Index” in Laulima. Make sure to check Assignments, Tests and Surveys for due dates as NO LATE WORK IS ACCEPTED. All submissions will be through Laulima. The extra credit are what they are and some have issues as links change or material is moved online. The EC are NOT maintained, so if you can’t figure something out or feel that an EC is shorting you somehow, don’t do the EC: They are NOT required.

Examples of potential extra credit opportunities:
1. Reading an assigned topic and completing a questionnaire.
2. Pronunciation of drug (generic) names (face-to-face only).
3. Listening to an assigned recorded interview and completing a questionnaire.

METHOD OF GRADING

Grading Scale

Grades are based on a straight percentage; the student should use the points tally sheet provided to keep track of their own points. Midterm grades are NOT calculated. If you miss an examination because of an illness or legitimate emergency, you must contact the instructor within 48 hours to arrange a time to take a make-up exam. The instructor may request that the student present evidence of the illness or emergency that caused the student to miss the exam. If the student misses an exam for any other reason, the student may be prohibited from taking a make-up exam, thus failing to receive any points for the missed exam. While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different. No retests will be given for any reason. Quizzes may not be retaken, taken late or made up. If Laulima drops a wireless device while the student is taking a quiz, the quiz will NOT be reset.

Make up exams will be given at the Library Resource Center or your home campus Testing Center by arrangement. You will need a photo id in order to take the exam.

ACADEMIC DISHONESTY

Students involved in academic dishonesty will receive an "F" grade for the course.
Academic dishonesty includes cheating on exams and plagiarism. See pages 20-21 of the 2010-2011 course catalog for a description of the University’s policies concerning academic dishonesty.

LEARNING RESOURCES

Online participants are required to have access to a computer and printer.
Additional technical requirements:
1. Ability to access and use Laulima.
   a. There is a specific Laulima website for this course which contains course information, announcements, lecture outlines, assignments, links to other websites, the syllabus and other learning resources.
      i. You MUST have the ability to access and use online resource materials through the course website in Laulima including the lecture materials and recorded resources (videos and audio recordings).
   b. You automatically have access to the PHRM 203 online course website when you enroll.
   c. To access the PHRM 203 Laulima site, go to https://laufima.hawaii.edu/portal and log in using your UH username and password. Once in, click on the PHRM 203 tab.
2. Ability to navigate and use the internet.
3. Ability to navigate and use common word processing and presentation software such as Microsoft Word and PowerPoint.
4. Must have Adobe Reader installed on your computer.
5. You must have access to a hard internet connection (NOT WIRELESS) while taking the quizzes. Quizzes will NOT be reset if Laulima times you out or your wireless connection drops you.


These texts are available:
1. At the WCC bookstore
2. Online, at Pearson’s website a hard cover text or eText

Lecture notes (copies of PowerPoint presentation slides) will be provided in the **“Course Index” of the PHRM 203 Laulima site**. They will be organized in folders containing resources for each lecture including the PowerPoint slides (as PDFs), any handouts or background materials (usually as PDFs), audio of the lecture (as WMA files), short videos covering powerpoints (MOV files), a drug list if appropriate (a PDF), a set of SLO review questions (PDF) and a fact sheet that summarizes the information from the lecture (a PDF). The hard copy of the SLO review questions is OLDER than the version online in Assignments, Tests and Surveys (ATS). Always use the ATS version to study for exams.

You may need to download software in order to use these resources. To read PDF files, you need to have Adobe Acrobat Reader. To view the MP3 Camtasia files and MOV videos, you will need QuickTime. To listen to the WMA audio recordings of live lectures, you will need a compatible player for your particular computer. This may be any compatible player.

Online flash cards are available at StudyBlue [http://www.studyblue.com/#](http://www.studyblue.com/#). To use, go to [http://s.tudy.it/tw23frp](http://s.tudy.it/tw23frp) join and use the class code 284977 to access the cards. Either link should take you to their website. Additional online flash cards are available through FlashCardMachine ([http://www.flashcardmachine.com](http://www.flashcardmachine.com)) and the specific links are embedded in the “Course Index” pages for each lecture.

In addition, we use a number of online resources in our study of pharmaceuticals. You should become familiar, at a minimum, with these listed here:
1. Drugs.com
   a. [www.drugs.com/pro](http://www.drugs.com/pro)
2. Food and Drug Administration (FDA)
   a. FDA
   b. For Health Professionals
   c. Drug Shortages
   d. MedWatch
   e. Recalls
   f. Medication Errors
   g. More Medication Errors
   h. Continuing education on Medscape
3. Drug Enforcement Administration (DEA)
   a. Controlled Substances Act
   b. Drug disposal days
   c. Drug fact sheets
4. National Institutes of Health (NIH)
   a. Clinical Trials Information
   b. Dailymed (a drug database)
5. Institute for Safe Medication Practices (ISMP)
   a. Error Prone Abbreviations
   b. Drug Name Suffixes

**Course “Geography” and Procedures, Access and Navigation**

To get started with the course, go to [Laulima](#). You will need your student ID and password to log into [Laulima](#). If you don’t know your ID number or have forgotten your password, contact Tech. Services by clicking on the “Student Help” tab on the Laulima log in page. This “Student Help” tab also has information, including videos, on using Laulima if you are new to the system.

PHRM 203 is divided into 6 “Units” (Introduction, Nervous System, Endocrinology, Cardiovascular, Microbiology & Parasites, and finally “Other”). Each unit covers several chapters in your text and from 2-11 lectures. Endocrinology is the shortest unit, while the Nervous System is the largest. In Laulima, under the “Course Index” navigation tab, you will find links with the names of each of the units. When you click on the link, a page will open and you will find links to the resources described in the previous section. A schedule is available to print in Laulima (See the Administration section at the top of the Course Index home page), but you will need to pay attention to the “Announcements” in Laulima and read all emails to learn of any changes to the schedule, including due dates, assignments, or changes to materials. Read the weekly START HERE Announcement!

The weekly START HERE Announcement will identify, in order, all the tasks you need to complete for the week. It will tell you which lectures are being covered as well as any assignments, changes in assignments, due dates and hints for upcoming exams. Read the weekly START HERE Announcement!

On the general course schedule, at the end of the syllabus, you will find the assigned textbook reading. You should keep your *Nurse's Drug Guide* handy as you study so that you may quickly look up relevant information. You should allot a minimum of 45 minutes per chapter. Some of the end-of-chapter questions from the book are adapted for exam questions. Make sure you take a look at those questions.

After reading, or scanning, the assigned reading, and listening to the audio of the lecture (while studying the PowerPoints), you should now be ready to answer the SLO review questions. The audiotapes are approximately 1 hour in length. The videos are all less than 15 minutes each. You do not need to listen to the audio and watch the video; you may choose one. Since there are 3-4 videos for each lecture, the time commitment is approximately the same, about 1 hour per lecture. Depending upon how much information you need to review, the SLO questions should take 30-60 minutes per lecture to complete.

Actually learning the material and memorizing the drug names, classes and important details should occupy the rest of your time. Expect to spend a minimum of 2 hours per lecture performing these tasks.

Lastly, take the quiz by going to the “Assignments, Tests and Surveys” link on the PHRM 203 Laulima site. The quizzes are 10 matching “questions” and are timed (5-10 minutes). If you have memorized the drug names, that is plenty of time. The quizzes are only available during the week of the matching lecture per the schedule, so if you choose to do the materials out of order, MAKE SURE YOU DON’T MISS THE RELATED QUIZ. For the purposes of this course, a week starts on Monday and ends on Sunday at midnight (Hawaii Standard Time). The total points from the quizzes will be at least ¾ of the midterm, so these easy points should not be thrown away by missing quizzes.

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution. You may contact your instructor through the email link on our [Laulima Home Page](#) (just click on my name), or by posting a Chat.

Please note, I do not write letters of recommendation for students who take online courses but who do not take the time to interact with me either online or in person. If you think you are going to want a letter, then make sure to stay in contact with me throughout the term.
Additional Information

STUDENT RESPONSIBILITIES

The student is expected to attend lectures, participate in all course activities, and complete all quizzes, examinations and course assignments on time (no late work accepted).

Any changes in the course schedule, such as lecture order, examination dates, deadlines, etc., will be announced ahead of time on the course website (“Announcements” in Laulima). It is the student's responsibility to be informed of these changes. It is also the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day for making an official withdrawal).

HOW TO SUCCEED IN THIS CLASS

Although you will be given lecture outlines, you will not succeed in this class without listening to lecture audio recordings and taking detailed notes. Science courses at WCC generally require a minimum of two to three hours of independent study time for each hour in class. Just because this course is online, you should not expect to devote less than the 6.5 - 8.5 hours per week expected of students in the face-to-face section(s). It is your responsibility to allocate the appropriate amount of time needed for study and be realistic about all personal and professional commitments that may cut into your study time. Because the summer session is truncated, you should expect to spend more time studying each week than you would during the normal semester.

Do not make the mistake of assuming that because the materials are online, it will somehow be easy to catch up. IT WON’T BE. Create a schedule for yourself and STICK TO IT.

As part of your studies, you will need to understand a veritable mountain of medical and anatomical terms, most of which will probably be foreign to you (e.g., cholinergic receptors, agonists and antagonists, hyperlipidemia, and post-synaptic potential). One way to learn these vocabulary words is to make flash cards to quiz your self. Online versions of PHRM 203 drug name flashcards are available for your use, too (see the “Resources” section above). These are to learn the drug names, uses, and warnings. You will have handouts listing important abbreviations used in class that you are also expected to learn.

Answering the “SLO Review” questions located at the end of each lecture can be a helpful way to learn new vocabulary and concepts. Be warned: Merely knowing the definitions of vocabulary words or the names of drugs will be of little use if you do not know the pharmacology. This means, that in addition to vocabulary, you will be expected to have a firm understanding of the basic physiological mechanisms regulating drug pharmacokinetics and pharmacodynamics.

At least two review sessions will be scheduled at WCC during the summer session. Questions of all kinds related to the material will be answered and the physiology behind much of the pharmacology will be reviewed. The answers to the SLO study questions at the end of each lecture and the practice exams that are provided for the midterm and final will be covered as well. If you have questions, this will be the time during which we can tackle issues that are unclear in depth. There may be spontaneous drills to help with your ability to associate information from various lectures. There may also be board notes to help clarify physiological or pharmacological principles in the upcoming lecture. It is strongly recommended that you allocate sufficient time to attend these sessions. This is a structured study session that has proven very helpful to the students who attend.
HOW TO FAIL THIS CLASS (As in: how to not do well and get a poor grade).

1. Purchase the textbook and drug handbook, but don’t bother reading them until just before and exam. Trust me, you won’t retain a thing. To read why, check out this link: http://msun.edu/grants/eoc/pdf/Principles_of_Memory.pdf
2. Don’t log in frequently. Funny thing about Laulima, it tracks your participation, so I can see how often you log on....
3. Wait until the last day to participate in any online discussions. It’s too late.
4. Forget about deadlines, thinking that if you miss a quiz, an exam or an assignment (including extra credit) that either the task will go away or I’ll let you make it up. The due dates for the online course will not change once the semester starts. Make sure you are clear on when things are due.
5. Ignore emails from the instructor advising you to drop the class if you are failing.
6. Don’t get familiar with the syllabus, Laulima and the grade book.
7. Put off the easy things to improve your grade like the quizzes and extra credit. Once those opportunities pass, they are gone. Emergencies can happen at any time and if you aren’t prepared, you won’t have a cushion to keep you afloat.

DISABILITIES ACCOMMODATION STATEMENT

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.
GENERAL LECTURE SCHEDULE (SUBJECT TO CHANGE)

Drug lists are included with each lecture, starting in the 4th week with the PNS lecture. “Week” indicates actual instructional weeks and does not account for holidays; lecture order may change.

General Schedule for 16 Week sections

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<thead>
<tr>
<th>Section and Background Basics</th>
<th>Week</th>
<th>Lecture</th>
<th>Chapter in text</th>
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| Introduction Basics          | 1.   | Introduction | • Chapter 1 (Intro)  
|                               |      |          | • Chapter 2 (Drug Regulations)  
|                               |      |          | • Chapter 3 (Drug Administration)  
|                               |      |          | • Chapter 8 (Substance abuse)  
| Therapeutics                  |      |          | • UNIT 2 (see video overview)  
|                               |      |          | • Chapter 6 (ADRs)  
|                               |      |          | • Chapter 7 (Medication Errors)  
| 2. Kinetics                   |      |          | • Chapter 4  
|                               |      | Dynamics  | • Chapter 5  
| Nervous System                | 3.   | CNS Basics & Neurotransmitters | • Chapter 16  
|                               |      |          | • Chapter 21  
|                               | 4.   | Peripheral Nervous System | • Chapters 17 & 18 for cholinergic lecture  
|                               |      |          | • Chapters 19 & 20 for adrenergic lecture  
| 5. Pain Inflammation          |      | Autocoids | • Chapters 47 & 48  
|                               |      | Pain and Inflammation | • Chapter 29 (Severe Pain & Migraines) for Opioids  
|                               | 6.   | Sedatives Hypnotics, | • Chapters 44 & 75  
|                               |      | Antidepressants, Antipsychotics | • Chapters 22-24.  
|                               | 7.   | Anesthetics | • Chapter 30 (Anesthetics)  
| 8. Neurodegenerative Diseases |      | Endocrine (Unit 10 in text) | • Chapter 67, 68 & 70-72 for 1st lecture  
|                               | 9.   | CV1: Hypertension | • Chapter 69 (Diabetes mellitus) for 2nd lecture.  
| Cardiovascular                | 10.  | CV2: Angina | • Chapter 38 - 40  
|                               |      | CV3: Lipids | • Chapter 32, 41.  
| 11. Antimicrobials            |      | Micro1: Bacterial basics, UTIs, BPH, Acne | • Chapters 49, 52 & 53  
|                               |      | Micro 2: Protein Synthesis Inhibitors | • Chapter 51  
|                               | 12.  | Micro 3: Cell wall synthesis inhibitors | • Chapter 50  
|                               |      | Micro 4: Quinolones, Antiprotozoals | • Chapters 54 & 56  
|                               | 13.  | Micro 5: Antiparasitics, Antifungals | • Chapters 55 & 56  
| 14. Other                     |      | Respiratory Tract Drugs | • Chapters 47 & 48  
|                               |      | Antivirals | • Chapters 57 & 58  
|                               | 15.  | Gastrointestinal Drugs | • Chapters 61 - 63  
|                               |      | Cancer | • Chapters 59 & 60  
|                               |      | Herbs, Supplements & Vitamins | • Chapters 15 & 64  

10 week SUMMER SCHEDULE, NEXT PAGE…
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<th>Section</th>
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<td>Anesthetics</td>
<td>• Chapter 30 (Anesthetics)</td>
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<td>Neurodegenerative Diseases</td>
<td>• Chapters 25-28</td>
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<td>END OF SEMESTER</td>
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<td>Endocrine (Unit 10 in text)</td>
<td>• Chapter 67, 68 &amp; 70-72 for 1st lecture</td>
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<td>• Chapter 69 (Diabetes mellitus) for 2nd lecture</td>
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<td>CV1: Hypertension</td>
<td>• Chapter 31, 33-37 (scan, read as needed)</td>
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<td>CV2: Angina</td>
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<td>Micro 3: Cell wall synthesis inhibitors</td>
<td>• Chapter 50</td>
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<td>Micro 4: Quinolones, Antiprotozoals</td>
<td>• Chapters 54 &amp; 56</td>
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<td>Micro 5: Antiparasitics, Antifungals</td>
<td>• Chapters 55 &amp; 56</td>
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<td>Respiratory Tract Drugs</td>
<td>• Chapters 47 &amp; 48</td>
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<td>Antivirals</td>
<td>• Chapters 57 &amp; 58</td>
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<td>Gastrointestinal Drugs</td>
<td>• Chapters 61 - 63</td>
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<td>Cancer</td>
<td>• Chapters 59 &amp; 60</td>
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<td>Herbs, Supplements &amp; Vitamins</td>
<td>• Chapters 15 &amp; 64</td>
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<td>END OF SEMESTER</td>
<td>COMPREHENSIVE FINAL LAST DAY OF CLASSES</td>
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## General Schedule for 6 Week (SUMMER) sections

<table>
<thead>
<tr>
<th>Section</th>
<th>Week</th>
<th>Lecture</th>
<th>Chapter in text (3rd Edition, 2nd Ed in announcements)</th>
</tr>
</thead>
</table>
| Introduction and Background Basics | 1    | Introduction/ Therapeutics                                              | • Chapter 1 (Intro)  
• Chapter 2 (Drug Regulations)  
• Chapter 27 (Substance abuse)  
• UNIT 2 - Chapters 8-11  
• Chapter 5 (ADRs)  
• Chapter 6 (Medication Errors)                                                                 |
|                                |      | Kinetics/ Dynamics                                                      | • Chapter 3 - Kinetics  
• Chapter 4 - Dynamics                                                                                                          |
|                                |      | CNS Basics & Neurotransmitters                                         | • Chapter 12  
• Chapter 17                                                                                                                      |
| Nervous System                 | 2    | Peripheral Nervous System                                               | • Chapters 13 & 14 for cholinergic lecture                                                                                   |
|                                |      | Peripheral Nervous System                                               | • Chapters 15 & 16 for adrenergic lecture                                                                                   |
|                                |      | Autocoids                                                               | • Chapters 40                                                                                                            |
|                                |      | Pain and Inflammation                                                  | • Chapter 25 (Severe Pain & Migraines) for Opioids  
• Chapters 41                                                                                                                      |
|                                | 3    | Sedatives Hypnotics, Antidepressants, Antipsychotics                    | • Chapters 18 - 20.                                                                                                        |
|                                |      | Anesthetics                                                            | • Chapter 26 (Anesthetics)                                                                                                 |
|                                |      | Neurodegenerative Diseases                                            | • Chapters 21 - 24                                                                                                         |
|                                |      | MIDTERM                                                                |                                                                                                                          |
| Endocrine and Cardiovascular   | 4    | Endocrine (Unit 10 in text)                                            | • Chapter 64, 65 & 67-71 for 1st lecture                                                                                   |
|                                |      | CV1: Hypertension/ CV2: Angina                                         | • Chapter 66 (Diabetes mellitus) for 2nd lecture.  
CV2: Angina                                                                                                                           |
|                                |      | CV3: Lipids                                                            | • Chapter 34 – 37 (scan, read as needed)                                                                                   |
| Antimicrobials                 | 5    | Micro 1: Bacterial basics, UTIs, BPH, Acne                             | • Chapters 46, 49 & 50                                                                                                     |
|                                |      | Micro 2: Protein Synthesis Inhibitors                                   | • Chapter 48                                                                                                            |
|                                |      | Micro 3: Cell wall synthesis inhibitors                                 | • Chapter 47                                                                                                            |
|                                |      | Micro 4: Quinolones, Antiprotozoals, Antiparasiticals, Antifungals     | • Chapters 51 & 53  
• Chapters 52                                                                                                                      |
|                                |      | Respiratory Tract Drugs                                               | • Chapters 44 & 45                                                                                                         |
| Other                          | 6    | Antivirals                                                             | • Chapters 54 & 55                                                                                                         |
|                                |      | Gastrointestinal Drugs                                                | • Chapters 58 - 60                                                                                                         |
|                                |      | Cancer                                                                 | • Chapters 56 & 57                                                                                                         |
|                                |      | Herbs, Supplements & Vitamins                                         | • Chapters 7 & 61                                                                                                         |

**COMPREHENSIVE FINAL Friday, 12 August**

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Updated on 12 May, 2016