

2016-2017

**COURSE:** MA 165 Pharmacology

**COURSE DESCRIPTION:** This course focuses on basic drugs, their uses and effects on each body system. This course will also cover different modes of drug administration and dosage calculations.

**LEARNING OUTCOME:** Upon successful completion of this course, the student will be able to identify the basic drugs and their uses and affects to each body system. The student will also be able to calculate mathematical equations relating to drug administration.

**INSTRUCTOR:** Larin Albertson, CMA (AAMA) (605) 882-5284 ext. 459 Room # 110  
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**DURATION:** 56 Clock Hours 2 Semester Credits

**SEMESTER:** SPRING 2017 (1/--/17 – 5/--/17) MWF TIME ROOM 110A

**REQUIRED TEXT:** Pharmacology Clear & Simple, 2<sup>nd</sup> edition, Cynthia J Watkins, PRICE, ISBN: 978-0-8036-2588-4, Publisher: F.A. Davis

#### UNITS OF INSTRUCTION

- 165 1 Basic review of mathematics (Chapter 6)
- 165 2 Measurement systems (Chapter 7)
- 165 3 Dosage calculations (Chapter 8)
- 165 4 Integumentary system medications (Chapter 11)
- 165 5 Musculoskeletal system medications (Chapter 12)
- 165 6 Nervous system medications (Chapter 13)
- 165 7 Eye and ear medications (Chapter 14)
- 165 8 Endocrine system medications (Chapter 15)
- 165 9 Cardiovascular system medications (Chapter 16)
- 165 10 Immunological system medications (Chapter 17)
- 165 11 Pulmonary system medications (Chapter 18)
- 165 12 Gastrointestinal system medications (Chapter 19)
- 165 13 Reproductive and urinary systems medications (Chapter 20)
- 165 14 Herbs, vitamins, and minerals (Chapter 21)

#### STUDENT LEARNING OUTCOMES

**By successfully completing this course, students will:**

MA 165 1

1. Define all key terms
2. Discuss numerical relationships.
3. Perform calculations involving whole numbers.
4. Calculate problems using fractions.
5. Find the least common denominator.

6. Perform calculations involving decimals.
7. Calculate percentages, ratios, and proportions.
8. Solve problems for an unknown quantity.

#### MA 165 2

1. Define all key terms.
2. Compare the four systems of measurement used for drug dispensing.
3. State the basic units of measurement in the metric system.
4. Use conversion methods for each system of measurement correctly and accurately.

#### MA 165 3

1. Define all key terms.
2. Learn and understand the four methods for calculating drug dosages.
3. Explain why certain calculations are considered special and which populations are affected.
4. Explain how to reconstitute powdered medication and calculate the desired dosage.

#### MA 165 4

1. Define all key terms.
2. Differentiate between two primary routes of medication administration in the integumentary system, and determine when each route would be chosen.
3. Recall at least seven conditions affecting the integumentary system and the medications used to treat them.

#### MA 165 5

1. Define all key terms.
2. Identify the key features of the musculoskeletal system.
3. Discuss the importance of healthy endocrine and nervous system to proper musculoskeletal functioning.
4. Recall at least five muscular system disorders and one appropriate treatment for each.
5. Discuss at least four bone or joint disorders and one appropriate treatment for each.

#### MA 165 6

1. Define all key terms.
2. Identify the two major branches of the nervous system.
3. Identify four categories of medications used to treat pain and fever.
4. Recall at least one category of medication used to treat anxiety, insomnia, sedation, and seizures.
5. Identify at least one category of medication used to treat behavioral, emotional, or mood disorders.
6. Identify one medication commonly used to stabilize mood in bipolar disorder.
7. Discuss medications used to treat psychosis, and identify other disorders for which these medications may be prescribed.
8. Recall at least one category of drug used to treat dementia and two categories of drugs used to treat Parkinson's disease.
9. Compare and contrast the actions of local and general anesthetics.
10. Discuss how alcohol can influence medication use and its effect on the body.

MA 165 7

1. Define all key terms.
2. List five parts of the eye and the function of each structure.
3. Recall three conditions related to the eye that require treatment with medication and an example of an appropriate medication.
4. Classify parts of the ear as belonging to the external ear, middle ear, or inner ear and discuss the function of each part.
5. Recall three conditions related to the ear that require treatment with medication and an example of an appropriate medication.

MA 165 8

1. Define all key terms.
2. Discuss six of the major endocrine glands and their function.
3. Differentiate between hypothyroidism and hyperthyroidism, and identify the effects of each on the body and the medications used to treat each disorder.
4. Contrast the three major disorders related to pancreatic function, and discuss the medications used to treat each.
5. Explain the proper way to handle and store insulin.
6. Differentiate between adrenal gland insufficiency and over secretion, and discuss the medications used to treat each one.

MA 165 9

1. Define all key terms.
2. Discuss how the cardiovascular system functions.
3. Describe ten categories of cardiovascular medications and their uses and actions.

MA 165 10

1. Define all key terms.
2. Discuss five categories of anti-inflammatory medications, when they are used, and their actions in the body.
3. Differentiate among the five classifications of anti-infectives, and describe when each is used and their actions in the body.
4. Compare the four types of acquired immunity a body develops and how they occur.
5. Identify at least three type of antineoplastic medications, and describe when each is used and their actions in the body.
6. Discuss the toxic effects on antineoplastic medications on patients and health-care workers, including the proper handling of both medications and patients' secretions.

MA 165 11

1. Define all key terms.
2. Describe how the respiratory system functions to exchange oxygen and carbon dioxide.
3. Discuss the actions of mast cell stabilizers, bronchodilators, anticholinergics, xanthines, and beta-adrenergic agonists used in the treatment of asthma and other respiratory disorders.
4. Describe two medications that may be used in the treatment of asthma and other respiratory disorders.

5. Compare and contrast antitussive and expectorant medications and when each is appropriate to use.
6. Discuss tuberculosis, how it is treated, and why its occurrence has increased.

#### MA 165 12

1. Define all key terms.
2. Detail how the gastrointestinal (GI) system functions.
3. Identify medications used to treat constipation.
4. Identify medications used to treat diarrhea and explain how the underlying cause should be treated.
5. Identify medications used to treat nausea and vomiting.
6. Compare the different types of medications used to treat gastroesophageal reflux disease (GERD) and gastric ulcers.
7. Discuss medications used for gallstones, obesity, hemorrhoids, flatulence, stomatitis, and fungal or parasitic infections of the GI tract.
8. Discuss how overdose is treated.
9. Identify populations of patients needing nutritional supplements of those needing assistance digesting their food and how each of these are treated.

#### MA 165 13

1. Define all key terms.
2. List actions of the reproductive hormones FSH, LH and ICSH.
3. Describe how contraceptives work.
4. Discuss the relation of diuretics to electrolyte imbalance.
5. Describe the effects of estrogens, progestins, agents for cervical ripening, oxytocin, tocolytics, ovulation simulants, androgens, diuretics, and BPH medications.

#### MA 165 14

1. Define all key terms.
2. Discuss the body's need for vitamins and minerals.
3. Compare Eastern philosophy with Western philosophy with regard to medicine.
4. Discuss why some patients prefer herbs to prescription medications.
5. Discuss why insurance companies do not usually pay for herbal remedies.

**COGNITIVE OBJECTIVES:** II.C.1. Demonstrate knowledge of basic math computations  
II.C.2. Apply mathematical computations  
II.C.3. Define basic units of measurement in: the metric system, the household system  
II.C.4. Convert among measurement systems  
II.C.5. Identify abbreviations and symbols used in calculating medication dosages

**PSYCHOMOTOR COMPETENCIES:** II.P.1. Calculate proper dosages of medication for administration

**METHODS OF INSTRUCTION:** Lectures, class discussions, projects, and assignments.

**ATTENDANCE:** Absences can seriously affect grades. Students will be allowed to miss a maximum of 3 (three) class periods. Students are responsible for all information missed while absent from class. This includes any changes to the schedule that might occur.

**MAKE UP POLICY:** Make up work procedures addressed in the MA Program Policy Manual.

### **Student Responsibility for Student Handbook Information**

As a student, you are responsible for the information in the LATI handbook. Lake Area Technical Institute reserves the right to change regulations and policies as necessary. Information relating to the withdrawal of a course, class conduct, plagiarism, inclement weather can all be located in the student handbook.

**ACADEMIC INTEGRITY:** Students' Responsibilities: Students are responsible for their own behaviors and are expected to maintain stated standards of academic honesty. Students share the responsibility with the faculty for maintaining an environment that supports academic honesty and discourages plagiarism or cheating.

**Faculty and Administrator Responsibilities:** Faculty are responsible for creating a classroom and testing environment that discourages cheating, confronts suspected violators and insures fair treatment of all students. Administrators also share the responsibility for developing an environment that discourages academic dishonesty. If a student is participating in academic dishonesty, he/she may be dismissed from the course or otherwise disciplined.

**CAREER COUNSELING:** Guidance is available for students when investigating career choices or in reaffirming the choice already made.

**PERSONAL COUNSELING:** Knowing that student life can be stressful, Lake Area Tech provides personal on-campus counseling for either school-related or non-school-related issues. At times, referral to another counseling service may be warranted. Check with the on-campus counseling staff if you have concerns you need to discuss. Specific referrals for drug and alcohol-related issues will be made by on-campus counselors.

**AMERICANS WITH DISABILITIES ACT:** Students are entitled to 'reasonable accommodations' under provisions of the Americans with Disabilities Act. Those in need of such accommodations should notify the instructor and make appropriate arrangements with the Office of Disability Services, Educational Services/Library.

**STUDENT TUTORING:** The Educational Services Center staff and peer tutors provide tutoring for all courses. If you are a student in need of help in any of your classes, please contact the Educational Services Coordinator located in the LATI library.

### **PERSONAL OBJECTIVES:**

- Attend class session
- Prepare for class session
- Complete assignments by due date
- Demonstrate a high level of responsibility

- Display respect for other members of the class
- Participate in class discussions and projects

**COMPLETION STANDARDS:** The student will pass the course with a minimum of 80% on the overall grade of the course.

**EVALUATION AND GRADING:** Evaluation is directly related to the performance objectives. Performance is measured by written examinations, assignments, competencies, and/or quizzes.

**COMPETENCIES:** Students will be allowed two (2) attempts at the psychomotor competency for the Pharmacology course. In order for the student to earn a passing grade in the course, the student must successfully complete the psychomotor competency by performing 100% competent. Students will receive a Pass/Fail grade for competencies.

**STUDENT EVALUATION:** The assessment and grading of student performance in this course is based on the following activities:

90% written examinations  
10% workbook assignments

**GRADING SCALE:** 100% - 94% = A

93% - 87% = B

86% - 80% = C

79% or below = F

\*\*Without my permission, you do not have the authority to record ANY of my class, its class members, or any content expressed here.

\*\*The instructor has the right to change any and all material on this syllabus at any time.



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