



MA 81 – Medication Math and Pharmacology for Health Occupations

Basic Course Information

Semester:	Fall 2022	Instructor Name:	Lisette Campos Cuevas APRN, MSN, FNP-BC
Course Title & #:	MA 81 – Medication Math and Pharmacology for Health Occupations	Email:	lisette.campos@imperial.edu
CRN #:	10923	Webpage (optional):	
Classroom:	2139	Office #:	Classroom 2139
Class Dates:	8/15/22 – 10/07/22	Office Hours:	Tue and Thur 6:35-7:35
Class Days:	Tue and Thurs. 4:30 – 6:35 pm and Fri. 3:00 – 9:30 pm	Office Phone #:	760-440-7688
Class Times:	Tue and Thurs. 4:30 – 6:35 pm and Fri. 3:00 – 9:30 pm	Emergency Contact:	
Units:	3 u	Class Format:	Face to face

Course Description

This course focuses on those components of safe medication calculation and administration and provides an introduction to the principles of pharmacology including medication interactions and potential adverse medication reactions. The course presents the principles and the guidelines for reading and interpreting a medical prescription. The course content also stresses medication calculation, measuring and administration of drugs; both orally and parentally most commonly administered in the medical. Maintenance of medication, administration of immunizations, documentation of dispensed or prescribed is stressed. (Nontransferable, AA/AS degree only)

Course Prerequisite(s) and/or Corequisite(s)

MA 077 and
BIOL 090 with a grade of "C" or better.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Demonstrate the legal and ethical knowledge related to medication administration in the medical office.
2. Identify warning signs of a pending allergic or anaphylactic response.
3. Correctly perform a medication dosage calculation involving patient weight.

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Demonstrate knowledge of basic math computations (II.C.1)
2. Apply mathematical computations to solve equations (II.C.2)
3. Define basic units of measurement in; a. the metric systems; and b. the household system. (II.C.3)

4. Convert among measurement systems (II.C.4)
5. Identify abbreviations and symbols used in calculating medical dosages (II.C.5)
6. Calculate proper dosages of medication for administration (II.P.1)
7. Analyze healthcare results as reported in: a. graphs; and b. tables.(II.A.1)
8. Identify the classifications of medications including: a. indications for use; b. desired effects; c. side effects; and d. adverse reactions (I.C.11)
9. Discuss the “five rights” of patients relative to administration of medications. (II.C.11) (I.P.4)
10. Understand the legal and ethical implications, with historical and current drug regulations, substance abuse and psychosocial, gender and cultural influences to medication utilization and administration.
11. Discuss DEA guidelines.
12. Demonstrate proper sites for administering parenteral (excluding IV) medication. (I.P.5,7)
13. Demonstrate proper technique for administration of oral medication. (I.P.6)
14. Apply principles of pharmacotherapy in the dimensions of the pediatric, geriatric, pregnancy and lactating patient.
15. Discuss the need for patient education.
16. Discuss implications and concepts of safety with performing medication administration.
17. Demonstrate knowledge of warning signs of allergic response to anaphylactic reactions.
18. Process pharmacy calls for new and refill prescriptions based on physician orders and/or prescription.

Textbooks & Other Resources or Links

Principles of Pharmacology for Medical Assisting sixth edition (paperback)
by Jane Rice
ISBN-13: 978-1305859326
Copyright 2017
Imprint: Cengage Learning

Course Requirements and Instructional Methods

Class Activity – individually and in groups (team presentations)

Mid-Term/Final Exam(s)

Problem Solving Exercise

Quizzes

Skill Demonstration

Written Assignments

Demonstration of simulated drug calculation and administration.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.



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Course Grading Based on Course Objectives

Total points possible for this class: 200 points

Weekly Quiz 1-5 -10 points each – 50

Pharmacology Midterm – 20 points

Pharmacology Final – 40 points

Medication Math (dosage calculations) Final – 40 points

Team presentations of effects of medications on body systems – up to 20points

Vaccination Power point– up to 10 points

Flashcards on drug presentations, classification, and other terms – up to 20 points

Grading criteria: Letter grade only

A= 90 -100%

B= 80 – 89%

C= 70 – 79%

Less than 70% overall grade in MA 81 = Fail

- **A grade of C or higher is required for successful completion of each course**
- **Students must pass the Medication Math final *and* the Pharmacology final with a minimum of 70% (21 points out of 30) in order to pass the class, EVEN IF your overall grade is greater than 70.**
- **There are no makeups for missed exams.**

Course Policies

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. **It is the student's responsibility to drop or officially withdraw from the class.** See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous absences exceed the number of hours the class is scheduled to meet per week (**10.5 hours for MA 81**) will lose points on final exam; after 3rd absence, the student may be dropped.
- As soon as you are aware that you will be late or absent, you need to contact the instructor by email or phone (760-550-9206) and leave a message with your name, date and that you will be late or absent.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor. **Students will not be allowed to have cell phones or smart watches on their person during testing. Recorders will not be allowed in the classroom due to HIPAA laws.**
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.

- Disruptive Students: Students who disrupt or interfere with a class, **such as students who come in late, leave and enter the class several times or are repeatedly talking during lecture** may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, only students enrolled in the class may attend: children are not allowed.

Academic Honesty

- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.
- Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file.
- Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General Catalog for more information on academic dishonesty or other misconduct.
- Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Work-Based Learning Activities in MA 81

Work-based learning (WBL) allows students to apply classroom content in professional settings while gaining real-world experiences. These opportunities will provide you with a deeper, more engaging, and relevant learning environment. The following WBL activities are available to provide you with the opportunity to explore career options in Medical Assisting:

1. Unpaid Internships/ Volunteer experiences are available for MA students to help prepare them for their careers through the IVC Career Services Center. If you are interested in learning more about this opportunity, email your instructor. *Participation in the Volunteer experience is optional and is not a part of your grade for MA 83.*

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar



Week/ dates	Activity, Assignment, and/or Topic	Course Objective or SLO
Week 1 August 15 - 19	<ul style="list-style-type: none"> Syllabus review & Introduction to class Med Math: Basic Math Review, Quiz # 1 – Decimals, Fractions, Rounding and Roman Numerals (10) Pharmacology: Rice Unit 7 (pg. 76 – 80) Controlled Substance Schedules, DEA regulations, Drug Diversion Rice Unit 10 (pg. 117 – 121 and 125) Patient Safety, 6 “rights” of Medication Administration, avoiding med errors Bonewit Chap. 3 (pg. 46) Controlled Substances and Prescriptions Vaccination Power point (worth 10 points) 	CO 1, 9, 10, 11 and 16 SLO 1
Week 2 August 22 - 26	<ul style="list-style-type: none"> Med Math: Quiz # 2 – Conversions: Metric and Household systems, Abbreviations and Dimensional Analysis (10) Pharmacology: Rice Unit 8 (pg. 89 -91, 93-95, and 96, 97) Forms of Drugs, Classifications of Drugs, and basic stages of a drug’s life in body Four conditions to look for (Hypochondriasis, Malingering, Drug-seeking behavior, Factitious disorder by proxy) 76 Drug Cards due _____ (worth 20 points) -Use terms from Rice page 79 (5 schedules of controlled substances), pages 88 – 91 (15 drug preparations), pages 93- 95 (45 drug classifications), page 97 (4 stages of a drug’s life in the body), and 7 Additional terms: Enteral, parenteral, diluent, Hypochondriasis, Malingering, Drug-seeking behavior, Factitious disorder by proxy or Munchausen syndrome. 	CO 3, 4, 5, 8
Week 3 Aug. 29 – Sept. 2 Ticketing for parking without a permit begins Monday 8/29	<ul style="list-style-type: none"> Med Math: Quiz # 3 – Reading medication labels (10) Pharmacology: Rice unit 9 Medication order, parts of a prescription, patient education, medication label, abbreviations to avoid Friday Lab: terms from flashcards Jeopardy (teams) with terms from flashcards 	CO 5, 14, 15, 18 SLO 3
Week 4 Sept. 5 – 9 Labor Day Monday 9/5 IVC Closed	<ul style="list-style-type: none"> Med Math: Quiz # 4 – Administration of parenteral medications and selecting correct syringe and needle (10) 	CO 6, 18
Week 5 Sept. 12 - 16	<ul style="list-style-type: none"> Pharmacology Midterm (Worth 20 points) Med Math: Calculating safe dose for pediatrics using weight Pharmacology: Rice Unit 14 – Allergic and Anaphylactic reaction Process pharmacy calls for new and refill prescriptions based on physician order 	CO 14, 17, 18 SLO 3
Week 6 Sept. 19 - 23 Friday Sept. 23	<ul style="list-style-type: none"> Med Math: Quiz # 5 – Pediatric calculations (10) Pharmacology: Rice Unit 15 and 16: Antibiotics, Antifungals, Antivirals 	CO 8, 10, 14



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Week/ dates	Activity, Assignment, and/or Topic	Course Objective or SLO
Deadline to drop class with a "W"	<ul style="list-style-type: none"> • Friday Lab: Team presentations of effects of Medications on Body systems (Worth 20points) • Substance Abuse (Unit 20) • Musculoskeletal drugs (Unit 21) • Gastrointestinal drugs (Unit 22) • Respiratory drugs (Unit 24) • Diuretics and Urinary System drugs (Unit 25) • Nervous system drugs (Unit 27) • Reproductive system drugs (Unit 28) 	
Week 7 Sept. 26 - 30	<ul style="list-style-type: none"> • Med Math Review for final • Pharmacology Rice Unit 23 – Cardiovascular disease and medications • Rice Unit 24 – Respiratory disease and medications (TB) • Rice Unit 26 – Endocrine disease and medications • Friday Lab: Team presentations of effects of Medications on Body systems continued (Worth 20 points) 	CO 8, 14
Week 8 Oct. 3 - 7	<ul style="list-style-type: none"> • Med Math Final (Tue, Worth 40 points) • Pharmacology Final (Thurs, worth 40 points) 	CO 2, 6, 14, 15, 16, 17

*****Tentative. Subject to change without prior notice*****