

### Basic Course Information

Semester:	<b>Spring 2018</b>	Instructor Name:	<b>G Palacios and J Aguirre</b>
Course Title & #:	<b>Calculation &amp; Pharmacology for Pharmacy Technicians</b>	Email:	Tina.aguirre@imperial.edu and Ms Palacios' pending
CRN #:	<b>21178</b>	Webpage (optional):	
Classroom:	<b>2150</b>	Office #:	760-355-6347 - Aguirre
Class Dates:	<b>Feb 12 - Jun 8 2018</b>	Office Hours:	
Class Days:	<b>Monday nights</b>	Office Phone #:	
Class Times:	6-9:10	Emergency Contact:	
Units:	3.0 units		

### Course Description

This course is designed to prepare students for pharmacology calculations related to dosage, measurements of strength, and safe preparation of medication. There is a focus on unit-cancellations for solving pharmacy situation problems. Principles of pharmacology are utilized with an emphasis on the classification, indication, interaction, and common side effects of major drug classes. (CSU)

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

None

### 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. perform dimensional analysis (ILO 2, ILO 4)
2. solve proportion and ratio problems as required in the pharmacy. (ILO 2, ILO 4)
3. solve mixture and allegation problems that arise in a typical pharmacy. (ILO 2, ILO 4)

### Course Objectives

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

1. Describe the differences among the Apothecary system, Avoirdupois System, Metric System, and Common Household Measurements.
2. Convert Arabic numbers into roman numerals.
3. Demonstrate the ability to convert among measurement systems commonly used on prescriptions.
4. Use mathematical calculations to determine dosage utilizing ratios/proportions, fractions, and percentages.
5. Demonstrate the ability to set up equations and solve problems for determining days' supply of medication.
6. Demonstrate the ability to set up equations and solve problems for determining pediatric dosages.
7. Demonstrate the ability to set up equations and solve problems for determining drip rates.
8. Demonstrate the ability to set up equations and solve problems for determining Alligation.
9. Demonstrate the ability to set up equations and solve problems for determining percent dosages.
10. List the major classification of drugs and indications for their usage.
11. Discuss common drug interactions with each classification of drug.

12. Describe the common side effects of drugs by classification and usage.
13. Review drug routes and indications for usage.
14. Discuss legal implications for pharmacies in regards to controlled substances.

### Textbooks & Other Resources or Links

Ballington D.A. and McKennon S.A. (2017) Pharmacy Calculations for Technicians (6<sup>th</sup> ed). Paradigm Publishing, Inc. ISBN: 9780763880750

### Course Requirements and Instructional Methods

#### Reading and Writing:

Compose a 1 page typed report, with 3 resources/references on 1 major drug classification, its indications, and common side effects of the drug classification. Cite your resources/references and ensure the paper is grammatically correct.

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.

#### Out-of-class:

Complete assigned reading on conversions, medication calculations, and dosage utilizing ratios, proportions, fractions, and percentages. Write out all assigned questions and answer each with all calculations and/or conversions visible and legible.

### Course Grading Based on Course Objectives

*[Required Information: Provide detailed information related to grading practices and grading scale, including values and totals. Consider adding final grade calculation, rubrics, late assignment policy, and other grading practices.]*

### Attendance

- 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, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

### Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- 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 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.

### Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

### Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- 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.

### Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- **CANVAS LMS.** Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: [Canvas Student Login](#). The [Canvas Student Guides Site](#) provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- **Learning Services.** There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- **Library Services.** There is more to our library than just books. You have access to tutors in the [Study Skills Center](#), study rooms for small groups, and online access to a wealth of resources.

### **Disabled Student Programs and Services (DSPS)**

Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services \(DSP&S\)](#) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

### **Student Counseling and Health Services**

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center.** A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- **Mental Health Counseling Services.** Short-term individual, couples, family and group counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 or in the building 1536 for appointments or more information..

### **Veteran's Center**

The mission of the [IVC Military and Veteran Success Center](#) is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

### **Extended Opportunity Program and Services (EOPS)**

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, [lourdes.mercado@imperial.edu](mailto:lourdes.mercado@imperial.edu).

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, [alexis.ayala@imperial.edu](mailto:alexis.ayala@imperial.edu).

### **Student Equity Program**

- The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student

success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

- The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

### Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC [General Catalog](#).

### Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

### Anticipated Class Schedule/Calendar

*The instructor will provide a tentative, provisional overview of the readings, assignments, tests, and/or other activities for the duration of the course.\*\*\**

**\*\*\*TENTATIVE, SUBJECT TO CHANGE WITHOUT PRIOR NOTICE\*\*\***

Week or Date	Activity, Assignment, and/or Topic	Pages / Due Dates / Tests All pages due prior to class
Week 1 Feb 12	<ul style="list-style-type: none"> <li>• Syllabus Review, Introduction to Course &amp;</li> <li>• Chap. 1: fractions, decimals, number systems, estimates, significant figures, accuracy, time of day</li> </ul>	<ul style="list-style-type: none"> <li>• Read syllabus</li> <li>• Chap. 1 Pages: 1-15, 18-21, 23-27, 29-31, 33-35</li> </ul>
<b>Feb 19</b>	<b>Washington Birthday</b>	<b>Campus Closed - NO class</b>
Week 2 Feb 26	<ul style="list-style-type: none"> <li>• Chap. 1: continue fractions, decimals, number systems, estimates, significant figures, accuracy, time of day</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 1 Pages: 1-35 <u>as above</u></li> </ul>
Week 3 Mar 5	<ul style="list-style-type: none"> <li>• Chap. 2: ratios, percents, proportions, and percentage of error</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz: Chapter 1</li> <li>• Chap. 2 Pages: 41-44, 46-50, 52-58, 62-65</li> </ul>
Week 4 Mar 12	<ul style="list-style-type: none"> <li>• Chap. 3: elements of a prescription order / directions</li> <li>• Abbreviations - Appendix B (pages 343-348)</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz: Chapter 2</li> <li>• Chap. 3 Pages: 71-80, 84-86</li> </ul>
Week 5 Mar 19	<ul style="list-style-type: none"> <li>• Chap. 4 basic metric units, conversions within metric system, problem solving with ratio-proportion and dimensional analysis, customized dosages</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz: Chapter 3</li> <li>• Chap. 4 Pages: 93-109, 113-120</li> </ul>
Week 6 Mar 26	<ul style="list-style-type: none"> <li>• Chap. 4 review and practice calculations</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 4 Pages: <u>as above</u></li> <li>• Quiz: Chapter 4 at end of class</li> </ul>

Imperial Valley College Course Syllabus – PHT 130 Spring 2018

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<b>Apr 2</b>	<b>Spring Break – April 1 – April 7</b>	<b>Campus Closed – NO class</b>
Week 7 Apr 9	<ul style="list-style-type: none"> <li>• <b>MID-TERM ON CHAPTERS 1-4</b></li> <li>• Chap. 5 household measures, oral dosages, temperature measurements</li> </ul>	<ul style="list-style-type: none"> <li>• Mid-term chapters 1-4</li> <li>• Chap. 5 Pages: 129-142, 145-155, 159-162</li> </ul>
Week 8 Apr 16	<ul style="list-style-type: none"> <li>• Chap. 5 continued</li> <li>• Chap. 6 parenteral injections and infusions, milliequivalents, millimoles, calculating units, solutions from powders</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz: Chapter 5 at end of class</li> <li>• Chap. 6 Pages: 169-177, 181-194, 198-201</li> </ul>
Week 9 Apr 23	<ul style="list-style-type: none"> <li>• Chap. 6 continued if necessary</li> <li>• Chap. 7 percentage and ratio strength dilutions, IV flow rates, drop factors, infusion rates</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 7 Pages: 209-215, 219-223, 226-230</li> </ul>
Week 10 Apr 30	<ul style="list-style-type: none"> <li>• Chap. 7 percentage and ratio strength dilutions, IV flow rates, drop factors, infusion rates</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 7 Pages: <u>as above</u></li> </ul>
Week 11 May 7	<ul style="list-style-type: none"> <li>• Chap. 8 compounding formulas, alligations, weight-in-weight calculations, special dilutions</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 8 Pages: 237-248, 250-259</li> </ul>
Week 12 May 14	<ul style="list-style-type: none"> <li>• Chap. 9 business-related calculations, insurance reimbursements, pharmacy inventory, count change</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 9 Pages: 269-278, 281-287, 291-297, 303-303</li> </ul>
Week 13 May 21	<ul style="list-style-type: none"> <li>• Chap. 9 continued if necessary</li> <li>• Review of all chapters</li> </ul>	<ul style="list-style-type: none"> <li>• Chap. 9 Pages: <u>as above</u></li> <li>• 1-9 Review Pages: 38-40, 69-70, 89-91, 126-128, 167-168, 205-207, 234-236, 265-267, 305-306</li> </ul>
<b>May 28</b>	<b>Memorial Day</b>	<b>Campus Closed – NO class</b>
Week 14 Jun 4	<ul style="list-style-type: none"> <li>• FINAL – CHAPTER 1 – 9</li> </ul>	

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