

1/2018 aes

Midstate College
411 W. Northmoor Rd.
Peoria, IL 61614
(309) 692-4092
(Spring 2019)

COURSE: AH 155 Mathematics for Medications

CREDIT HOURS: 4 quarter hours

METHOD OF DELIVERY: Classroom

COURSE DESCRIPTION: This course contains only a brief review of basic math skills. The focus of this course is on metric, apothecary and household measurements and using dimensional analysis to convert between systems. Calculation of oral and parental medication for adults, children, and special populations are covered. Other important areas include abbreviations for pharmaceuticals, reading labels and medication orders, drawing up medication and accurately reading syringes.

PREREQUISITE: MAT 101 Fundamentals of Mathematics or placement at MAT 110 Business Mathematics level

TEXT: Medical Dosage Calculations 9th edition

AUTHOR: Olsen, Giangrasso, and Shrimpton

PUBLISHER: Pearson Prentice Hall ISBN#: 0132384701

REQUIREMENTS FOR COMPLETION OF THE COURSE: Students must complete assessment tools to the satisfaction of the instructor and standard departmental AH155 exams. Department policy prohibits extra credit work.

Competencies for AH 155 are:

1. II.p.1 calculate proper dosages of medication for administration
2. II.c.1 Demonstrate knowledge of basic math computations (w)
3. II.c.2 Apply mathematical computations to solve equations (w)
4. II.c.3a Define basic units of measurement in the metric system (w)
5. II.c.3b Define basic units of measurement in the household system (w)
6. II.c.4 Convert among measurement systems (w)
7. II.c.5 Identify abbreviations and symbols used in calculating medication dosages (w)
8. XII.c.1c Identify labels

Required curriculum topics are preceded by numerical mapping to MAERB core curriculum 2015.

TOPICS: Basic computational math skills including percentages, ratio, proportion, fractions, decimals, and equations, Metric, household and apothecary systems, Calculation of dosages for adults, Calculation of dosages for children/adults using Clark's law, Calculation of dosages for infants/children/adults using mg/kg of body weight method, Graph, chart and table interpretation

LEARNING OBJECTIVES: Upon completion of the course, the student will be able to:

1. II.c.1 Demonstrate knowledge of basic math computations
2. II.c.2 Apply mathematical computations to solve equations
3. II.c.3a Define basic units of measurement in the metric system
4. II.c.3b Define basic units of measurement in the household system
5. II.c.4 Convert among measurement systems
6. II.c.5 Identify abbreviations and symbols used in calculating medication dosages
7. XII.c.1c Identify labels

MIDSTATE GRADING SCALE:

90 - 100 A

80 - 89 B

70 - 79 C* *Students must have a 70% or better on math competency to pass this course.

60 - 69 D

0 - 59 F

Academic Integrity:

Academic integrity is a basic principle of the College's function. Midstate College students are expected to maintain a high level of academic honesty. Contrary actions may result in penalties such as failure of the assignment(s), a lesser grade on assignment(s), failure of the course and/or suspension from the College. The course instructor will review all submitted documents and supporting evidence in connection to the infraction. The course instructor will also review the student's personal file for other notifications of academic dishonesty before determining the level of action to be applied. The course instructor will complete the Academic Dishonesty Report form to document and describe the incident and actions taken, then kept on file. The student may appeal the decision to administration, whose decision will be final.

The following (**plagiarism, cheating, deception, sabotage, computer misuse and copyright infringement**) are included in the actions Midstate College considers behavior contrary to the academic integrity policy; however, the policy is not limited to these examples. Further discussion of consequences regarding academic dishonesty are addressed in the Student Handbook.

Plagiarism:

Plagiarism is using another person's words, either by paraphrase or direct quotation, without giving credit to the author(s). Plagiarism can also consist of cutting and pasting material from electronic sources by submitting all or a portion of work for assignment credit. This includes papers, computer programs, music, sculptures, paintings, photographs, etc. authored by another person without explicitly citing the original source(s). These actions violate the trust and honesty expected in academic work. Plagiarism is strictly against the academic policy of Midstate College. Its seriousness requires a measured, forceful response which includes consequences for inappropriate and/or no citation.

In courses containing writing assignments, the College promotes the use of Turnitin which compares the student's writing against previously submitted papers, journals, periodicals,

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books, and web pages. Students and instructors can use this service to reduce the incidence of plagiarism. This electronic resource has been found to conform to legal requirements for fair use and student confidentiality. It is able to provide a report to the student indicating the parts of the assignment that match.

Student Success and Tutoring:

Contact Student Success: Room 110; (309) 692-4092, ext. 1100; studentsuccess@midstate.edu;

The Office of Student Success offers help in the following areas:

- Tutoring: Tutoring is encouraged for students who are doing their best to complete assignments yet still are experiencing difficulty in this course. Tutoring may be provided by the instructor outside of scheduled class times or through the office of Student Success.
- Writing assignment assistance: This may include learning how to conduct research; using proofreading tools such as Turnitin; outlining a topic; and applying MLA/APA standards.
- Math, accounting, and computer skills (including file management).
- Test-taking techniques.
- Note-taking skills development.
- Study skills development.
- Time management.

INSTRUCTOR: Margaret Markley **Room Number:** 204

Email: [Margaret Markley Email](#)

Phone: College (309) 692-4092

Office Hours: 5-6pm Mon, Tues, and Wed.

MATERIALS NEEDED FOR THIS COURSE: textbook, calculator

Participation Requirements / Policies and Procedures:

1. All work is to be completed on time. You are expected to use your class outline to plan for assignments and tests. If you miss a test or are late turning in an assignment, you will be expected to make it up within 7 days. After that time, your grade will drop 10% each week.
2. You are expected to be on time. If you must arrive or leave during class, do it quietly. Excessive absence will hurt your performance in class and potentially hurt your grade. Turn off your cell phone or put it on “vibrate”. Take your phone in the

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hall for conversations. **DO NOT TEXT IN CLASS OR BE READING TEXTS FROM YOUR PHONE.**

3. Academic dishonesty is never tolerated and will promptly be referred to the Dean of the College and/or the Allied Health Director.
4. Black ink must be used on all assignments. Paper should never be torn or frayed. Your work is how you present yourself on paper. Make certain multiple pages are stapled. All work needs your first and last name.

Method of Evaluation: This class will have 10 homework assignments, 6 quizzes, 3 tests, a final exam and a math proficiency test. It is required to pass the proficiency test with a 70% or better to pass this class.

Type of examination: Examinations are calculations, matching, and multiple choices.

Calculating your grade:

3 Tests (100 points each)	300 points
6 Quizzes (25 points each)	150 points
10 Assignments (25 points each)	250 points
Final Exam	100 points
TOTAL	*800 points*

- You must have a 70% or better on the competency exam
- Assignments are graded: 5 points for class attendance, 5 points for completion on time, and 15 points for correctness.

Week 1	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Perform basic computational math skills at 70% or better. <p>TOPICS: Introductions / Review Syllabi / Discuss Math Competency Chapter 1 Discussion Review of Basic Math Skills</p> <p>HOMEWORK: Read Chapters 2. Do additional exercises on page 26-27 in Chapter 1</p>
Week 2	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Perform basic computational math skills at 70% or better. • Accurately read medication labels & drug orders with standard abbreviations. <p>TOPICS: Take Math Competency Exam (Quiz 1) Chapters 2 Discussion. Will do exercises page 63-74 in class.</p> <p>HOMEWORK: Read Chapters 3 and 4. Do practice sets and exercises on page 90-91. Measurement and Abbreviation Handouts.</p>

<p>Week 3</p>	<p>Objectives: The student will be able to: Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Use dimensional analysis for math conversion. • Recognize basic abbreviations & symbols used in writing prescriptions. • Perform basic computational math skills at 70% or better. <p>TOPICS: Take QUIZ #2 (Abbreviations) Chapter Discussion Chapters 3 and 4. Do Chapter 3 additional exercises in class. Do practice and exercises in class for Chapter 4.</p> <p>HOMEWORK: Read Chapter 5. Do Chapter 4 additional exercises and Cumulative review on page 110-112.</p>
<p>Week 4</p>	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Use dimensional analysis for math conversion. • Recognize basic abbreviations & symbols used in writing prescriptions. • Perform basic computational math skills at 70% or better. • Accurately read medication labels & drug orders with standard abbreviations. <p>TOPIC: Measurement Quiz (Quiz 3) Discuss Chapter 5 and do exercises in class.</p> <p>HOMEWORK: Prepare for Test 1 over Chapters 1-5. Do cumulative exercises on page 125.</p>
<p>Week 5</p>	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Use dimensional analysis for math conversion. • Recognize basic abbreviations & symbols used in writing prescriptions. • Perform basic computational math skills at 70% or better. • Accurately read medication labels & drug orders with standard abbreviations. <p>TOPICS: Test 1</p> <p>HOMEWORK: Read Chapter 6 assigned parts and do the assigned homework.</p>
<p>Week 6</p>	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Read medication order and calculate dosage for adults. • Read medication order and calculate dosage for kid using Clark's Law. • Read medication order and calculate dosage for persons extremely large or small using mg/kg method. <p>TOPICS: Review Chapter 6 homework and do additional problems in class.</p> <p>HOMEWORK: Read Chapter 7 and do assigned problems from Chapter 7. Read Chapter 12 and do assigned problems</p>
<p>Week 7</p>	<p>Objectives: The student will be able to:</p>

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	<ul style="list-style-type: none"> • Read medication order and calculate dosage for adults, children and people of unique size. <p>TOPIC: Quiz 4 (dosage problems) Review problems from Chapter 7 and 12 and do additional exercises in class.</p> <p>HOMEWORK: Study for Test 2. Complete worksheet for Test 2</p>
Week 8	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Read medication order and calculate dosage for kid using Clark's Law. • Read medication order and calculate dosage for persons extremely large or small using mg/kg method. <p>TOPICS: Take TEST #2. Review Chapter 8 and do problems in class.</p> <p>HOMEWORK: Read Chapter 8 and do assigned problems.</p>
Week 9	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Calculate solutions of a certain percentage and ratio. • Recognize IV equipment calculate infusion rates and drip rate for IV therapy. <p>TOPIC: Take QUIZ #5 (percentage and ratio) and 6 IV and feeding drip rates and drip rates for IV therapy). Review Chapter 10 and do problems in class.</p> <p>HOMEWORK: Read Chapter 10 and 11- Do assigned problems.</p>
Week 10	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Calculate solutions of a certain percentage and ratio.
Week 11	<p>Objectives: The student will be able to:</p> <ul style="list-style-type: none"> • Recognize IV equipment calculate infusion rates and drip rate for IV therapy. <p>TOPICS: Test 3 HOMEWORK: Study for Final Exam. Complete Final Exam Study Guide Worksheet.</p>
Week 12	<p>TOPICS: Final Exam</p>