MATH 101 - Mathematics for Veterinary Assistants
3 Credits

INSTRUCTOR: Clayton K. Akatsuka, Professor, Mathematics

OFFICE: Mana 112

OFFICE HOURS: M, W: 9:30am-10:00am, 11:30am-12 noon, 12:45pm-1:15pm; T, Th: 8:00am – 8:30am, 11:15am – 11:45am; or by appointment.

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EFFECTIVE DATE: Fall 2012

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.

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.

CATALOG DESCRIPTION

This course is designed for students enrolled in the Veterinary Assistant Certificate program. Topics include the application of mathematical skills to solve applied problems for veterinary assistants with emphasis of dosage, concentration, dilution and drip rates. Also included is mathematical and laboratory terminology.

Prerequisite: Grade of “C” or better in MATH 25 or equivalent, satisfactory math placement test score, or consent of instructor.
The student learning outcomes for the course are:

1. Define terminology and abbreviations used in measurements and convert from one measurement to another with accuracy on the fly.

2. Understand oral and written requests to calculate dosages accurately and quickly.

3. Use mathematical formulas to calculate stock solutions to a desired concentration with accuracy.

4. Demonstrate proficiency in calculating infusion rates for fluid replacement therapy and for surgery.

5. Identify parts of a basic graph to understand medical charts.

6. Identify basic statistical terms to make informal decisions from numerical data and information.

7. Demonstrate proficiency in performing operations with fractions, decimals, percentages, ratios and proportions without the use of a calculator.

**COURSE CONTENT**

**Concepts or Topics**

- **Review of mathematical skills with emphasis of applications and terminology for veterinary assistants**
- **Measurements used in veterinary medicine**
- **Drug orders and medicine labels**
- **Dose calculations and syringe measurements**
- **Calculating intravenous infusions**
- **Other calculation methods including ratios and proportions**
- **Graphs**
- **Statistics**

**Skills or Competencies/Responsibilities of Students. Success in this course will be enhanced by:**

1. a positive, inquiring attitude towards learning mathematics;

2. setting aside adequate time for studying and working of problems;

3. reading the text carefully and making use of other learning materials whenever necessary;

4. seeking assistance from the instructor and the Math Lab personnel whenever necessary;

5. completing assignments by the designated date;

6. regular class attendance, participation and maintaining accurate class notes.
COURSE TASKS

The mode of instruction is primarily discussion-problem solving where the initial portion of each class period may be utilized to discuss and clarify any questions from the preceding class meeting and/or assignment, and the remaining portion is used to discuss new material. Lectures, directed student explorations, group work, appropriate technologies, and projects will also be used as appropriate.

ASSESSMENT TASKS AND GRADING

The student will demonstrate competency in the objectives by participating in and completing all class activities, by completing and turning in all assignments as requested, by taking unit tests or quizzes and by taking a final exam over concepts and skill covered in the entire course. Class activities, unit tests or quizzes, and the final exam are to be taken in the classroom and without any references or the use of a calculator unless otherwise stipulated by the instructor.

It is the student’s responsibility to obtain and complete all assignments that are given in any class meeting for which the student is unable to attend. Unless permission is granted by the instructor beforehand, assignments and tests must be completed and submitted to the instructor at the specified date and time.

Points will be assigned to each graded assignment, class activity, and tests as follows:

1. **Homework.** Homework sets will be graded on a 0 - 3 point scale. Assignments are due at the next class meeting to the instructor. Late homework may be accepted with grade penalty.

2. **Class Activity.** Class activities are done in class only. Class activities will be graded on a 0 - 3 point scale. There is no make-up for a missed class activity. Students must be present in class to participate.

3. **Unit and Chapter Test.** A Basic Skills test (chapters 2-5), five chapter tests (chapters 6-10), and 2 quizzes (chapter 12 and 13) are given in class. Tests will be approximately 45 minutes in length and will be scored on a 50-point scale. The student must achieve a minimum of 70% of the possible points for each test/quiz. Without this minimum requirement, a passing grade and credit for the course are not possible.

4. **Final Exam.** The final exam will cover the concepts and skills in the entire course. The final exam is one hour, fifty minutes in length and will be scored on a 200-point scale. The student must achieve a minimum of 60% of the possible points for the final exam. Without this minimum requirement, a passing grade for the course is not possible.
Make-up. Make-up opportunity for a test/quiz or final exam will be possible only upon a timely presentation of a serious and justified explanation of the student’s absence from the class test. The instructor has the right to request documentation of the student’s absence from the class and to determine if the absence from the class test is justified. A make-up test must be taken within one week of the in-class test unless otherwise specified by the instructor. No more than one test/quiz may be taken by a student on a make-up basis.

Course grade. If the student has achieved a minimum of 70% of the possible points for each test/quiz, and a minimum of 60% of the possible points for the final exam, then a letter grade for the course will be assigned according to the level of achievement (based on the total points earned) as provided in the table below:

<table>
<thead>
<tr>
<th>GRADE</th>
<th>DEFINITION</th>
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<tbody>
<tr>
<td>A</td>
<td>90% - 100% of the total possible points</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of the total possible points</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79% of the total possible points</td>
</tr>
<tr>
<td>Cr</td>
<td>70% - 100% of the total possible points</td>
</tr>
<tr>
<td>NC</td>
<td>Less than 70% of the total possible points</td>
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<tr>
<td>D</td>
<td>60% - 69% of the total possible points</td>
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<tr>
<td>F</td>
<td>Less than 60% of the total possible points</td>
</tr>
</tbody>
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Note: Students must apply for the Cr/NC grading option at the Admissions Office. Consult the WCC Catalog for deadlines.

Note: W grade is given only when the student officially withdraws from the course at the Admissions Office. Consult the WCC Catalog for deadlines.

**LEARNING RESOURCES**


**Activities Required at Scheduled Times Other Than Class Times**

Homework, Math Lab or TTC activities as needed.

Math Lab: Mana 113

TTC: Alakai 106

**Additional Information**

1. Grading on Homework, Class Activities or Tests. To receive full marks for problems done on any graded activity, you must show your work neatly and completely as well as provide clear written explanations when it is asked for. Partial credit may be awarded.

2. Absences. It is your responsibility to attend every class meeting. Even if you are absent, you are responsible for those topics and examples covered in class that you missed. Furthermore, you are responsible for obtaining any important announcements and assignments given during the class you missed. If you are absent frequently or for an extended period of time, contact the instructor as soon as possible to discuss your situation. Absences and tardiness to class can have a negative impact on your success in this course.

3. Homework. For each chapter, as you read through each section, it is recommended that you write down the words, phrase or math symbols and their meanings, formulas, and properties/rules that are important for each section. It is important for you to know these.
After reading through each section carefully, try the suggested odd numbered problems in each section. The answers to the odd numbered problems are available at the back of the textbook. Do as many as you feel is necessary to help you learn and understand the material and become comfortable with the concepts and/or properties. If you have difficulty solving problems in the section, review the material in the text and your class notes. Many examples are solved. Review the solutions to these problems. If, after checking these sources and trying to find your mistakes, you are still unable to solve a problem correctly, make a note of the exercise number so that you can ask someone for help with that problem.

Mathematics is not a spectator sport. To succeed in mathematics, you must do problems. It is often necessary to practice a skill more than the instructor requires. For example, a textbook may provide 50 practice problems in a section and the instructor may assign only 25 of them. However, some students may need to do 30, 40, or all problems. If you are an accomplished athlete, musician, or dancer, you know that long hours of practice are necessary to acquire a skill. Do not cheat yourself of the practice you need to develop skills taught in this course.

4. **Calculators are not allowed on tests or the final exam unless otherwise indicated by the instructor.**