

## Course Syllabus

### Math 101 — Mathematics for Veterinary Assistants and Technicians (3 Credits)

Instructor: *Navtej (Johnny) Singh*

E-Mail: [navtej@hawaii.edu](mailto:navtej@hawaii.edu) <<This is the best way to get in touch. Provide name & class info>>

Office Location: *Manaopono 110* <<Feel free to stop by my office anytime>>

Office Hours: *W F 9:00am – 10:00am; W F 12:00pm – 1:30pm, & by appointment*

Office Telephone #: *(808) 236 – 9278* << Use this during office hours for elaborate help>>

CRN	Class Meeting	Days	Classroom	Effective Date
63253	10:00am – 11:15am	Wednesday	Manaopono 115	Fall 2016 Semester

### 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.

### Catalog Description - Course Content – Course Structure

**Catalog Description:** An introduction to clinical calculations used in veterinary medicine. Topics include the application of mathematical skills to solve applied problems in veterinary nursing and pharmaceutical dispensing with emphasis on dosage, concentration, dilution and drip rates. Also included is mathematical and laboratory terminology. This course is intended for students entering veterinary technology, veterinary assisting or other animal-related fields. Pre-Requisite(s): Grade of “C” or better in MATH 25 or MATH 28 or Math 75X or Math 82 or equivalent, satisfactory math placement test score, or consent of instructor.

**Course Content:** The course will begin with review of mathematical skills with emphasis on applications and terminology for veterinary assistants. Then core topics such as Measurements used in veterinary medicine, drug orders and medicine labels, dose calculations and syringe measurements, and calculating intravenous infusions will be covered. There will also be an emphasis on graphs and statistics in addition to calculation methods such as ratios and proportions. Furthermore, this course help prepare students for the mathematical portion of the Veterinary Technician National Examination (VTNE).

**Course Structure:** Since this is a hybrid course, to make efficient use of class time, students are expected to take their quizzes at the testing center and complete preliminary reading before coming to the class. The mode of instruction is primarily presentation-discussion-problem solving where the initial portion of each class period will be utilized to discuss and clarify any questions from the preceding class meeting and/or assignments. Majority of the class time will used to discuss new material. Lectures, directed student explorations, group work, and projects will be integrated into the course as needed.

## Learning Resources and Materials

- **Required Textbook:** Math and Dosage Calculations for Medical Careers. 5th Edition. Kathryn Booth, James Whaley, Susan Sienkiewicz, & Jennifer Palmunen. McGraw-Hill. ISBN 978-0-07-351380-5. (Binder Edition)
- **Required Hardware:** A scientific calculator
- **Recommended Software:** Excel or similar program
- **Suggested Resource Textbook 1):** Medical Mathematics and Dosage Calculations for Veterinary Professionals, 2<sup>nd</sup> Edition, Robert Bill, Wiley-Blackwell Publishing, 2009.
- **Suggested Resource Textbook 2):** Mathematics for Veterinary Medical Technicians: A Text/Workbook with Applications: 3<sup>rd</sup> Edition by Edward Stumpf, Carolina Academic Press.
- **Recommended Resources:** A reliable portable computer and home internet access.

## Student's Responsibilities

Responsible students take ownership of their actions by exhibiting the following behaviors in this class:

- Take an active role in learning and seek immediate help when needed.
- Maintain a positive and inquiry attitude towards learning.
- Set aside adequate time for doing assignments and not waiting till the last minute to do assigned work.
- Complete assignments by the designated dates with attention to quality of work.
- Stay current and don't procrastinate since new concepts are built on previously learned material.
- Attend classes regularly, participate, and maintain accurate class notes.

## Course Level Student Learning Outcomes

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

- Define terminology and abbreviations used in measurements and convert from one measurement to another with accuracy on the fly.
  - Understand oral and written requests to calculate dosages accurately and quickly.
  - Use mathematical formulas to calculate stock solutions to a desired concentration with accuracy.
  - Demonstrate proficiency in calculating infusion rates for fluid replacement therapy and for surgery.
  - Identify parts of a basic graph to understand medical charts.
  - Identify basic statistical terms to make informed decisions from numerical data and information.
  - Demonstrate proficiency in performing operations with fractions, decimals, percentages, ratios and proportions without the use of a calculator.
- All SLOs assessments are embedded in class activities, homework, quizzes, or exams.

## Point Distribution and Grades

### Grading Categories

Homework	120 pts
Quizzes	200 pts
Midterm	140 pts
Final Exam	200 pts
<b>Total Points</b>	<b>660 pts</b>

### Grading Scale

A	90% or Higher
B	80% - 89.9%
C	70% - 79.9%
D	60% - 69.9%
F	Below 60%

Other grade options: CR - Credit, NC – No Credit, W - Withdrawn, I - Incomplete, and N grade. Note that all assignments in same category are of equal value unless specific otherwise.

If a student signs up for CR/NC option, a grade of C or higher is considered CR and grade of D or F is considered NC. A student will automatically receive a W grade by dropping the course within certain time line indicated in the system schedule. An Incomplete (I) grade is given when a student fails to complete a small portion of the course due to circumstances beyond his/her control.

The N grade indicates that the student has worked conscientiously, attended regularly, finished all work, fulfilled course responsibilities, and has made measurable progress. However, either the student has not achieved the minimal student learning objectives and is not yet prepared to succeed at the next level, or the student has made consistent progress in the class but is unable to complete the class due to extenuating circumstances, such as major health, personal or family emergencies. If you would like to request for N grade, complete the N grade request form (ask instructor for the form) no later than the time of final examination addressing how you meet the criteria for N grade. You must hand me this form in person unless prior arrangements are made. Then I will make a decision on whether you qualify for the N grade.

## Homework

Homework will be assigned during each class period on lecture presented in class. I will also devote some class time to go over various homework problems when needed. Note that all homework assignments are worth equal credit. Do each homework assignment on a separate paper. Your homework will be graded based on neatness, completion, correctness, and organization. Each homework assignment must be turned in at the testing center at the time when you take your quiz on that assignment. Late homework will not be accepted.

## Quizzes

There will be 12 quizzes during the semester. Your highest 10 quizzes will be used for grading. This will allow you to drop the lowest scores or replace a missed quiz. Primary purpose of these quizzes is for you to find out what you know and what need some work before the major exam. Students are required to take their quiz at WCC testing center (located in the library) during indicated time. Each quiz will be available at the testing center from Wednesday 1pm to next week Tuesday 5pm.

## Exams

In this class there will be a midterm and a cumulative final. YOU MUST SCORE 70% OR HIGHER ON MIDTERM AND 60% or HIGHER ON FINAL IN ORDER TO PASS THIS CLASS. You will be given the entire class period to complete each exam. Best way to prepare for the exams is to study homework and quiz problems as well as examples presented in class. A review sheet will be provided before each exam and will be collected on the day of the exam. All exams must be taken within the classroom environment without any references unless otherwise stipulated by the instructor. Make up for the midterm and final exam is only allowed for students with excused absent and for students who did not achieve the 70% threshold on first attempt. A student can only receive a maximum of 70% on make-up test.

<b>Basic Rubrics for Grading Multistep and Word Problems</b>	
Full Credit	<ul style="list-style-type: none"> <li>- Shows complete understanding of a problem's mathematical concepts and procedures</li> <li>- Performs algorithms correctly using appropriate notation and precise mathematical language</li> <li>- Gives an elaborate and effective explanation of the solution process in an organized way</li> </ul>
Partial Credit	<ul style="list-style-type: none"> <li>- Shows near understanding of the problem's mathematical concepts and procedures</li> <li>- Using appropriate notation, performs algorithms completely that may contain minor errors.</li> <li>- Identifies most relevant information and shows a general understanding</li> <li>- selects an appropriate strategy for solving the problem</li> <li>- Shows effective explanation and some evidence of a systematic solution process</li> </ul>
Very Little Credit	<ul style="list-style-type: none"> <li>- Shows some understanding of a problem's mathematical concepts and procedures</li> <li>- Performs algorithms that may contain major computational errors</li> <li>- Identifies some relevant information and shows limited understanding</li> <li>- Shows little evidence of a solution process or use of appropriate mathematical language</li> <li>- Gives some explanation of the solution process but may be vague or difficult to interpret</li> </ul>
No Credit	<ul style="list-style-type: none"> <li>- Shows no understanding of a problem's mathematical concepts and procedures</li> <li>- Identifies no relevant information, algorithmic pattern, or evidence of a solution process</li> <li>- Fail to explain significant parts of the problem or omit it altogether</li> </ul>

## Class Participation and Attendance

Students are required to attend class regular and be present in the class for the duration of the entire class period. A student should be consistently working and progressing on assigned tasks during the class. Proof is required for an excused absence. To create a comfortable learning environment in the classroom, all students are expected to come to class on time with positive attitude and respect everyone that is present in the classroom. Students are not allowed to leave the class during the session without the instructor's approval because it is considered a sign of disrespect to everyone attending the class. As a courtesy to your classmates, please turn off your cell phones and do not distract them from doing their work. If you have

trouble understanding a concept or problem, ask for help by raising your hand. If you are absent from the class, it is your responsibility to check on announcements made while you were absent. If you stop attending this class for any reason, it is your responsibility to drop it.

### **Math Help Outside of Class**

In addition to visiting my office hours, I encourage you utilize the Math Lab located in the library. You do not have to make an appointment to use this resource. There is also free online 24 hours live tutoring available through Brainfuse via myuh.hawaii.edu (find Brainfuse link under tools or visit <http://windward.hawaii.edu/brainfuse> for further instruction). You can also access live local tutors online at <http://manoa.hawaii.edu/ola/>. I also encourage you to form a small study group with students from your class. There are many useful websites such as <https://www.khanacademy.org/> devoted to helping students in Math. I would be happy to assist you in locating the sites that fit your need.

### **Disabilities**

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 (808) 235-7448, [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale 'Akoakoa 213 for more information.

### **Academic Dishonesty**

Plagiarism and use of another's work without proper acknowledgment is not permitted. A student caught cheating, may receive a failing grade for the course. All students are required to follow the Student Conduct Policies described at [http://www.wcc.hawaii.edu/Policies/5\\_3\\_Student\\_Conduct.php](http://www.wcc.hawaii.edu/Policies/5_3_Student_Conduct.php).

### **Remarks**

Please check your WCC e-mail account frequently for important announcements. Note that this syllabus is subject to change in extenuating circumstances. When communicating via e-mail or leaving voice message for me, please include your name, course and contact information so that I can easily identify you and get back to you in a timely manner. Make up work will only be allowed upon showing proof of excused absence. For additional academic information, refer to WCC website [www.windward.hawaii.edu](http://www.windward.hawaii.edu) or go to [www.hawaii.edu](http://www.hawaii.edu) for system wide information.

### Tentative Math 101 Schedule for Fall 2016 Semester

Week	Dates	Assignments and Tasks to Complete
1	8/24	Go Over the Syllabus; Review of Operations with Real Numbers (CH 1 + CH 2 + Handout)
		HW01: pg. 34 #1-18, pg. 53 #1-21, & Handout Problems
2*	8/31	Relationships of Quantities (CH 3 + Handout)
		HW02: pg. 79 #1-20 & Handout Problems
3	9/07	Metric System (CH 4) and Other Measurement Systems (CH 5)
		HW03: pg. 93 #1-15 & pg. 102 #1-10
4^	9/14	Unit Conversation (CH 6) and Temperature and Time (CH 7)
		HW04: pg. 114 #1-10 & pg. 122 #1-8
5	9/21	Statistics for Medical Professional (Handout)
		HW05: Handout Problems
6*	9/28	Graphs (Handouts) and Roman Numerals (Handout)
		HW06: Handout Problems
7	10/05	Go Over Quiz
		Review for Midterm
8*	10/12	Take Midterm Exam
		Take Midterm Exam
9	10/19	Equipment for Dosage Measurement (CH 8) and Medical Abbreviations (Section 9.1)
		HW07: pg. 142 #1-24
10	10/26	Methods of Dosage Calculations (CH 12)
		HW08: pg. 281 #1-20
11*	11/2	Oral Dosages (CH 13) and Parenteral Dosages (Part of CH 14)
		HW09: pg. 304 #3-18 (every 3 <sup>rd</sup> problem), pg. 318 #3-18 (every 3 <sup>rd</sup> problem), pg. 359 #1-9.
12	11/9	Intravenous Calculations (CH 15)
		HW10: pg. 418 #1-5, pg. 431 #3-30 (every 3 <sup>rd</sup> problem), and pg. 437 #1-13 (odd)
13	11/16	Critical IV Calculations (CH 17)
		HW11: pg. 502 #1-12, pg. 512 #3-15 (every 3 <sup>rd</sup> problem) and pg. 523 #1-18
14	11/23	Non-Instructional Day
		No Class Meeting
15	11/30	Calculations for Compounding (CH 19)
		HW12: pg. 569 #1-10, pg. 575 #1-10, and pg. 579 #1-15 odd
16	12/7	Go Over Last Quiz
		Review for Final
17	12/14	Final Exam for this class is on Wednesday, December 14 from 10am – 12pm in this classroom

^Drop Dates: September 12, 2016 – Last day to withdraw without a W grade

\*Holidays: September 5, 2016 – Labor Day  
 November 8, 2016 – Election Day  
 November 11, 2016 – Veterans' Day  
 November 24-25, 2016 – Thanksgiving Break