
ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
MATHEMATICS DEPARTMENT
COMMON SYLLABUS DIRECTORY

PREFIX: MAT **NUMBER:** 110 **TITLE:** Mathematical Measurement

CONTACT HOURS: 4 **CREDIT HOURS:** 3

CCL DESCRIPTION: This course provides an activity-based approach to utilizing, interpreting, and communicating the data in a variety of measurement systems. Topics include accuracy, precision, conversion, and estimation within metric, apothecary, and avoirdupois systems, ratio and proportion, measures of central tendency and dispersion, and charting of data. Upon completion, students should be able to apply proper techniques to gathering, recording, manipulating, analyzing, and communicating data.

PREREQUISITE(S): Any of the following: MAT 070, MAT 080, MAT 121, MAT 161,
MAT 171, MAT 175

COREQUISITE(S): None

TEXTBOOK: Daniel L. Timmons, Catherine W. Johnson, *Math Skills for Allied Health Careers*, ISBN-13: 978-0-13-171348-2
Required of all students

DELIVERY METHOD: Traditional

GRADING POLICY: Homework – 20%; Lab Assignments – 20%; Chapter Tests – 40%; Mid-Term I – 10%; Mid-Term II – 10%

CONTENT OUTLINE:

- 1.1 Introduction to Mathematics as Used in the Allied Health Field
- 1.2 A Review of Operations with Fractions
- 1.3 A Review of Operations with Decimals
- 1.4 A Review of Operations with Percents
- 1.5 Conversions Among Fractions, Decimals, and Percents
- 2.1 Signed Numbers and the Order of Operations

- 2.2 A Review of Solving Linear Equations
- 2.3 A Review of Ratios and Proportions
- 2.4 Solving Percentage Problems
- 2.5 Using Formulas
- 2.6 Modeling Medical Applications
- 3.1 Measurement Fundamentals
- 3.2 Scientific Notation
- 3.3 Significant Digits and Rounding
- 3.4 The Metric and SI System
- 3.5 Household Measurement Units
- 3.6 The Apothecary System
- 3.7 Converting Between Measurement Systems
- 3.8 Temperature Scales
- 4.1 Reading Medication Labels and Inserts
- 4.2 Abbreviations Used on Prescriptions and Medical Orders
- 4.3 Reading and Interpreting Prescriptions and Medical Orders
- 4.4 Syringe Calculations
- 5.1 Introduction
- 5.2 Ratios and Proportions in Dosage Calculations
- 5.3 Ratios, Proportions, Formulas, and Dimensional Analysis in Multistep Dosage Calculations
- 5.4 Ratios and Proportions in X-Ray Applications
- 5.5 Ratios and Proportions Related to Inhalation Therapy
- 5.6 Ratios and Proportions in Preparation of Solutions
- 5.7 Angle Measurements and Physical Therapy
- 6.1 Introduction to IV Fluids
- 6.2 IV Flow Rate Calculations
- 6.3 Calculations of Infusion Times
- 7.1 Introduction to Statistics
- 7.2 Constructing and Interpreting Graphs
- 7.3 Measures of Central Tendency
- 7.4 Understanding Range, Standard Deviation, and the Coefficient of Variation
- 7.5 The Normal Distribution and Control Charts

COMMENTS: Any policy concerning the possible acceptance of a late assignment or the possibility of a special arrangement that might be made with the student who missed a scheduled examination due to circumstances beyond his/her control is left to the discretion of the instructor.
