

Virginia Western Community College

SDV 101

Orientation to Science

Prerequisites

None.

Course Description

Introduces students to the skills that are necessary to achieve their academic goals, to services offered at the college and to the discipline in which they are enrolled. Covers topics such as services at the college including the learning resources center, counseling and advising, listening, test taking, and study skills; and topical areas that are applicable to their particular discipline.

Semester Credits: 1

Lecture Hours: 1

Required Materials

None.

Course Outcomes

At the completion of this course, the student should be able to:

- Define the following terms: matter, measurement, accuracy, precision, qualitative, quantitative.
- Recall the metric units to measure mass, volume, length, pressure, temperature, pH and density.
- Make both quantitative and qualitative measurements.
- Explain the importance of the use of units when making and recording measurements.
- Use dimensional analysis (also called factor-label method) and successfully convert among metric units and among metric and standard units.
- Define significant digits.
- Apply the rules of significant digits to basic mathematical operations.
- List and define the steps of the scientific method.
- Construct a data table.
- Perform statistical analyses.
- Weigh evidence and decide if generalizations or conclusions based on the given data are warranted.
- Graph data using spreadsheet software (i.e. Excel.)
- Collaborate with other students to research a science career as assigned by the instructor.
- Work within a group to present the results of their career research to the class.

Topical DescriptionSubject

Orientation and Scientific Method

Topics

Orientation

College Services

Success Strategies for Science Courses

The Scientific Method

Variables in Experiments

End of Course Presentation on Career

Measurements and Numbers

Define Terms: measurement, accuracy, precision, qualitative, quantitative

Significant Figures

Metric Units and Conversions

Graphing and Graph Interpretation

Graphing using Excel

Logarithms

Data Generation Analysis and Significance

Data Collection

Interpretation of Data

Significance

Statistical Analysis

Random vs. Systematic Error

Scientific Literacy

Reading Journal Articles

Reading for Context

Introduction to Information Resources available in Brown Library

Career Exploration

Opportunities for Careers in Science

- Academia
- Government
- Industry
- Other

Communication Skills

Written Communication

Oral Communication

Presentation Skills

Group Dynamics

Research

Opportunity for collaboration of students on group presentation

Presentation

Groups will present information regarding career investigation

Written paper submitted

Notes to Instructors

None.