

Course Objectives/Course Outline
Spokane Community College

Course Title: Research in Respiratory Care

Prefix and Course Number: RT 404

Course Learning Outcomes:

By the end of this course, a student should be able to:

Apply the following:

- A. Evaluate the importance of research to the profession of Respiratory Care
- B. Apply ethics in research design and implementation
- C. Obtain a certificate of completion for the National Institutes of Health online course "Protecting Human Subjects"
- D. Explain the scientific method
- E. Design a study problem with hypothesis based upon the scientific method
- F. Apply various devices used in performing physical measurement in clinical research
- G. Demonstrate the interface and integration of physical measurement devices in performing clinical research
- H. Explain how to assure and document accuracy of results obtained through physical measurement devices
- I. Explain the steps in developing a research study
- J. Identify a research problem and explain its relevance to the practice of respiratory care
- K. Discuss basic statistical concepts
- L. Explain statistics for nominal measures and how to apply in clinical research data
- M. Explain statistics for ordinal measures and how to apply in clinical research data
- N. Explain statistics for continuous measures and how to apply in clinical research data
- O. Identify the formats for reporting and sharing clinical research results
- P. Explain the relevance of a literature search to research
- Q. Discuss how literature resources are classified based upon their rigor
- R. Conduct a literature search on Pub Med to include a minimum of 5 background articles
- S. Write a literature review
- T. Prepare a poster presentation on the research paper completed in previous competencies

Course Outline:

- I. Introduction to research and its relevance to the practice of respiratory care
- II. Ethics in research design and implementation
 - A. Codes and regulations
 - B. Respect for persons

- C. Beneficence
- D. Justice
- E. Obtain a certificate of completion for the National Institutes of Health online course "Protecting Human Subjects"
- III. The scientific method
 - A. Formulate a Problem Statement
 - B. Generate a Hypothesis
 - C. Define Rejection Criteria
 - D. Make a Prediction
 - E. Perform the Experiment
 - F. Test the Hypothesis
- IV. Study development utilizing the scientific method
 - A. Develop the Study Idea
 - B. Search the Literature
 - C. Consult an Expert
 - D. Design the Experiment
 - E. Write the Protocol
 - F. Obtain Permission
 - G. Collect the Data
 - H. Analyze the Data
 - I. Publish the Findings
- V. Discussion of devices utilized in performing physical measurement
 - A. Accuracy of results obtained through physical measurement devices
- VI. Identification of a research problem and its relevance to the practice of respiratory care
 - A. Clinical problems identified during the students clinical rotation and discussed in class
- VII. Review of basic statistical concepts
 - A. Statistics for nominal measures and application to clinical research data
 - B. Statistics for ordinal measures and application to clinical research data
 - C. Statistics for continuous measures and application to clinical research data
- VIII. Formats for reporting and sharing clinical research results
 - A. RC Journal format and citations
- IX. Introduction to literature search/review
 - A. Relevance to the research process
 - B. Conducting the literature review
 - C. Sources and databases for literature search
 - D. Organization of material
 - E. Components of the literature review (format)
- X. Evidence based medicine classification of rigor
 - A. GRADE format
- XI. Literature review assignment
- XII. Poster presentation assignment