Nova Southeastern University  
School of Computer and Information Sciences

Course Syllabus

**DCTE 700 - Research Methodology** - 3 credit hours  
**DCTE 800 - Project in Research Methodology** (co-requisite) - 4 credit hours

Spring Cluster 2001  
March 2 thru August 1, 2001

Instructor:

Steve Terrell, Ed.D.  
Professor  
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Office hours: Monday and Wednesday 9:30 am to 4:00 pm

Dr. Terrell prefers to interact with students via e-mail although telephone calls and prearranged visits to the office are always welcome.

Class  
Web Site:

http://www.scis.nova.edu/~terrell

Course  
Description:

An in-depth treatment of the research and evaluation process including design, measurement and statistical analysis is provided. Techniques for planning, designing, and conducting research and evaluation projects and collecting and analyzing data using various statistical techniques are examined. Special emphasis is placed on the selection of appropriate methodologies for a variety of problem-solving situations. Software programs for performing statistical procedures are reviewed.
Required Textbooks:


Note: You only need the textbook. You will not need the software and workbook.


Note: This book will be supplied to you in class at no charge.


Note: This book is available from the SCIS program office or the SCIS web-site.


Note: This book is highly recommended for all graduate students.

Exit Competencies:

1. Upon completing this class, students will:
2. Understand and apply the educational research process.
3. Be able to clearly present an appropriate research plan and report investigating a problem in the field of computing technology in education.
4. Demonstrate the ability to formulate a good research question, to include areas of background and significance.
5. Develop a research methodology appropriate to the investigation.
6. Select, apply and analyze the appropriate statistical tool for a given scenario.
7. Demonstrate the ability to synthesize hypothesized outcomes with analyzed statistical data in order to make decisions regarding the rejection or failure to reject stated hypotheses.
8. Design and develop original work or research that addresses the use of computing technologies to improve the educational process.
9. Apply skills at supporting ideas with the literature in the field.
10. Apply principles of effective project development to a real life situation.
11. Comprehend the scope of applied research in computing technology in education.
12. Demonstrate skill at producing a research report that is free of errors and adheres to accepted principles of style.
Course Outline
And Assignments:

There are eight assignments listed below, four of which are required for the coursework with the other four required for the project. For your planning purposes, the assignments are presented in chronological order by due date rather than by course and project.

PLEASE NOTE: All work should be submitted to the ESET system. Unless the instructor grants prior approval, work turned in past the due-date will be penalized by one letter grade.

1. Assignment 1: Overview of Research Methodology (course credit)

   Assigned Reading: Gay chapters 1 - 2, class notes.

   Deliverables:

   1. Write out a possible problem or topic you are considering researching for this class. While I suggest that your problem statement be something that you could ultimately investigate as part of your dissertation, that is not a requirement for this assignment.

   2. For the problem or topic identified, describe how you could possibly approach the investigation of the problem.

   Due date: 3/25/01

   Value: 100 points

2. Assignment 2: Development of Chapter 1 for a Research Proposal (project credit)

   Assigned Reading: Gay Chapters 1 - 2, class notes and dissertation guide.

   Deliverables:

   In this assignment, students are required to develop Chapter 1 for a problem area. This should be the same problem used in Assignment 1 using any instructor feedback that was given.

   For this assignment, provide an introduction that presents the background of the problem area. In this section, you will build a case for why it is important to investigate the problem area (significance). This will be followed by the actual
statement of the problem. This assignment is based on readings from the text as well as examples presented at the institute and cluster meetings.

The problem statement will be followed by research questions that will be answered by the research study. These research questions will provide the researcher a direct link between the statement of the problem and the review of literature that will be developed in a subsequent assignment. For the problem area under investigation, the student researcher should also provide any assumptions, limitations, delimitations and definitions of terms that are appropriate.

This assignment should be limited to three pages, double-spaced!

This assignment should follow the formatting of Chapter 1 in the dissertation guide (headings, etc.).

Due Date: 4/9/01

Value: 150 points

3. Assignment 3: Abstracts of Related Literature (course credit)

Assigned reading: Class notes, dissertation guide.

Deliverables:

The student researcher should identify and read three research-based articles related to the problem area under consideration. After reading, the student should abstract each article, providing the following information:

- A correct bibliographic entry (see the SCIS dissertation guide)
- A summarization of the article
- Your thoughts as to the relevance and significance of the article. In doing this, you should attempt to synthesize the literature read with other pertinent material.

This assignment should be limited to one page per article!

Due date: 4/23/01

Value: 100 points
4. Assignment 4: Chapter 2 - Development of Chapter 2 for a Research Study (project credit)


Deliverables:

In this assignment the student will be creating Chapter 2 (the Review of Literature) for a study related to their previously defined problem statement (Assignment 1) and their Chapter 1 (Assignment 2). The student should use the articles reviewed for Assignment 3, as well as additional material, to create this review of literature. Close attention paid to the issues discussed at institute regarding this chapter.

This assignment should be no more than seven pages double-spaced!

Due date: 5/7/01

Value: 150 points

5. Assignment 5: Development of a Methodology for a Research Study (project credit)

Assigned reading: Gay chapters 3 thru 11, class notes, and dissertation guide.

Deliverables:

In this assignment the student should create a methodology for addressing the problem statement defined in Assignment 1 and Assignment 2. Any hypotheses developed should be a direct reflection of the literature reviewed in chapter 2. Close attention should be paid to the essential component parts for a particular type of study as well as any other related issues.

Due date: 5/28/01

Value: 150 points

6. Assignment 6: Midterm Examination (course credit)

Assigned reading: All material read to date of examination.
Deliverables:

This examination is obviously "open book" and is designed to be a learning activity. More information will be supplied as the date for the exam approaches.

Exam Due Date: 6/18/01

Value: 100 points

7. Assignment 7: Statistical Cases (project credit)


Deliverables: Later in the term, statistical cases will be posted for your analysis. The format will be much the same as was discussed in class. A scenario will be presented wherein you will be asked to identify such things as the independent variable(s), the levels of the independent variable(s), the dependent variable and the type of data that will be collected. You will then be presented with an example of output wherein you will test the hypotheses developed from the case study.

It is anticipated that these cases will cover descriptive statistics, the t-tests (both independent sample and dependent sample), the analysis of variance, the factorial analysis of variance, the Pearson correlation and the chi-square procedure.

Due date: 7/16/01

Value: 150 points

8. Assignment 8: Critique of Research Studies (course credit)

Assigned reading: Gay Chapter 15 - 16.

Deliverables: Students will be sent a research article that will be critiqued using tools available in the Gay book.

Due date: 8/1/01

Value: 100 points
Instructional Methods and Tools:

The instructor uses a combination of tools to approach this class although, generally speaking, the majority of communication is carried out via electronic mail and threaded forums. In essence, during the initial meeting the instructor sets the stage for the assignments to be completed and demonstrates the content of the course homepage to ensure that students feel comfortable in beginning the initial task. Once students have left campus, the instructor will supply notes, via the forums, on a weekly basis. Students are free to ask questions about the notes as well as post other topics. Students should feel free to call or e-mail the instructor at any time. Pre-arranged visits to campus are also welcome.

Assignments:

Information concerning assignments is presented in the section entitled “Course Outline”.

Examinations and Quizzes:

Information concerning examinations and quizzes is presented in the section entitled “Course Outline”.

Grading Criteria:

Each assignment has been designated as either course or project and each assignment has been assigned a certain number of points. This breakdown is shown below:

Course: Project:
Assignment 1: 100 points Assignment 2: 150 points
Assignment 3: 100 points Assignment 4: 150 points
Assignment 6: 100 points Assignment 5: 150 points
Assignment 8: 100 points Assignment 7: 150 points
Total points for Course = 400 Total Points for the Project = 600
Grades for both the course and project will be based on the following scale:

- 94-100% of points for section: A
- 90-93% of points for section: A-
- 87-89% of points for section: B+
- 84-86% of points for section: B
- 80-83% of points for section: B-
- 77-79% of points for section: C+
- 74-76% of points for section: C
- 70-73% of points for section: C-
- Less than 70% of points for section: F

Course Rules:

The Grade of Incomplete (I)

The grade of Incomplete (I) will be granted only in cases of extreme hardship. In such cases, a student requiring an incomplete must submit a written appeal with full rationale to the instructor at least two weeks prior to the end of the term. The student does not have a right to an incomplete, which may be granted only when there is clear evidence of just cause. Should the instructor agree, an incomplete contract would be prepared by the student and signed by both student and instructor. The incomplete contract must contain a description of the work to be completed and a completion date. The completion period should be the shortest time possible. In no case may the completion date extend beyond 30 days from the last day of the term for master’s courses or beyond 60 days from the last day of the term for doctoral courses. The incomplete contract will accompany the formal submission of the instructor’s final grade roster to the student’s program office. The program office will monitor each incomplete contract. If a change-of-grade form is not submitted by the scheduled completion date, the grade will be changed automatically from I to F. No student may graduate with an I on his or her record. The grade of I does not apply to master’s thesis or doctoral dissertation registrations.

Student Original Work (See also Code of Student Conduct and Academic Responsibility.)

Each student is responsible for maintaining academic integrity and intellectual honesty in his or her academic work. It is the policy of the school that each student be academically honest, which means that each student must:

- Submit his or her own work, not that of another person
- Not falsify data
• Not engage in cheating (giving or receiving help during examinations, acquiring and/or transmitting test questions prior to an in-class examination, or falsifying any records, including admissions material)
• Not receive or give aid on assigned work that requires independent effort
• Properly credit the words or ideas of others according to accepted standards for professional publications (See, for example, The Publication Manual of the American Psychological Association.)
• Not use term paper writing services or consult such services for the purpose of obtaining assistance in the preparation of materials to be submitted in courses
• Not engage in plagiarism

Writing Skills

Each student must demonstrate proficiency in the use of the English language in all work submitted for this course. Grammatical errors, spelling errors and writing that does not express ideas clearly will negatively affect your grade. The professor will not provide remedial help concerning writing problems that you might have. Students who are unable to write correctly and clearly are urged to contact their program office for sources of remedial help.

Bibliography:

Note: This listing represents material in the course instructor’s personal library. Always be on the alert for later editions.


