Course **EDF 6401**  
**Statistics for Educational Data (3 credit hours)**  
**Fall 2010**

**Professor**  
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Phone: 407-823-1762  
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**Office hours**  
Tuesday 3-5  
Other ‘virtual’ hours via Webcourses

**Course prerequisites**  
EDF 6481 or comparable introductory course in research methods

**Course description**  
Design of educational evaluation; analysis of data, descriptive and inferential statistics, interpretation of results

**Course objectives**  
The purpose of this course is to familiarize students with elementary statistical methods so as to enable one to select appropriate methods and be able to apply them. While students will not be expected to become expert statisticians, it is expected that given a specific research situation, students will know which method(s) to consider, select an appropriate method, and be able to conduct an analysis of research data. Emphasis will be on understanding concepts rather than on derivation of formula, although statistical theory will not be excluded. Demonstrable skills at the conclusion of the course should include to:

1. demonstrate knowledge of statistical terms  
2. differentiate between descriptive and inferential statistics  
3. identify measurement scales of variables  
4. organize data using tables, graphs, percentiles  
5. summarize data using measures of central tendency and measures of variation  
6. describe and interpret data using appropriate techniques (FEAP 1)  
7. identify distributional shapes and attributes  
8. apply, calculate, and interpret several univariate statistical procedures (inferences about a single mean; inferences about two samples; inferences about proportions; inferences about variances; bivariate measures of association)  
9. identify the meaning of each formula, its component parts, and the assumptions upon which they are founded  
10. identify a correct statistical procedure for answering a given research question in a specified situation  
11. demonstrate SPSS computing for univariate procedures
**Required texts**

*Please note! Additional readings may be assigned!

*I encourage you to check multiple bookstores to get the best price on books and/or software. Check options before you buy!*  

**Optional references and resources**

There are numerous optional references (books, websites, and other resources) that may assist you in learning about statistics and SPSS that are listed in Webcourses under “resources” (accessible from the course content home page and from the learning modules page).

* SPSS. SPSS is the statistical software that will be used in this course. Purchasing SPSS is NOT required. There are many labs on campus where you can access SPSS. If you decide to purchase SPSS, you have several options.
  - **Renting a license.** Six and 12 month rentals of SPSS are available at [http://www.onthehub.com/spss/](http://www.onthehub.com/spss/) (click on the bottom left icon for “IBM SPSS Statistics 18 GradPack & GradPack Base”). Six-month rentals are $35 and 12-month rentals are $70. If you rent a license, the ‘base package’ (i.e., “GradPack Base”) is sufficient for purposes of this class.
  - **Purchasing a license.** If you purchase your own copy of the software, you will have to decide on if you want the student or the graduate version. The student version, while cheapest, has the following limitations: a maximum of 50 variables and a maximum of 1500 cases; repeated measures ANOVA is not available. The grad pack version of SPSS does not have these limitations. If you anticipate using SPSS for your thesis or dissertation, you may want to consider these limitations before purchasing the student version. The grad pack version of SPSS can be purchased in the UCF computer store or in the UCF bookstore.

**Student Computer Labs**

The following computer labs have SPSS software and are available for student use. Please visit [www.acs.ucf.edu](http://www.acs.ucf.edu) to confirm hours of operation. Some labs are open later during the week and some are open during the weekend.

- Classroom Building I, Room 101
- Computer Center 2, Rooms 104 and 113
- Business Administration I, Room 148

In addition to the student computer labs, laptops with SPSS are available for four-hour check-out periods from the Curriculum Materials Center located on the first floor of the Education Complex. Please visit [http://library.ucf.edu/cmc/](http://library.ucf.edu/cmc/) for days and hours of operation.
Evaluation

1. **Discussion postings and online activities.** There will be various class assignments that will require you to respond to questions using discussion postings and responses to peers as well as require you to participate in other online activities (e.g., pre and post assessments related to the content being covered). Instructions will be provided in the requisite Webcourses modules. A rubric for discussion postings is available in Webcourses. Please review it carefully to ensure that you understand how the discussion postings and responses will be graded.

2. **Research study.** A research study will be completed that will demonstrate competency in statistical methods used in this class. This project, including instructions and a very detailed rubric, are available in Webcourses. You can access the rubric from the course content home page as well as from the learning modules page. You will be required to submit your research study in turnitin.com as well as Webcourses’s assignment dropbox.

3. **Exams.** Two examinations will be given. While the questions on the exam will include only multiple choice, you may be required to analyze data using SPSS, interpret SPSS output, or hand calculate computations to arrive at the correct solution. The exams will be on the application of concepts and principles learned. Exams will be given and completed via Webcourses. You are expected to work alone. Assistance from anyone will constitute a violation of the UCF Gold Rule. Additional instructions will be provided in Webcourses.

   **Note on homework.** Homework is assigned for most modules and is described in detail in the modules, however performance on homework does NOT effect your grade. (FEAP 1)

**Grading criteria**
The following scale will be used in determining the final grade in the course.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion postings and online assignments</td>
<td>10%</td>
</tr>
<tr>
<td>Examination 1</td>
<td>25%</td>
</tr>
<tr>
<td>Examination 2</td>
<td>25%</td>
</tr>
<tr>
<td>Research study</td>
<td>40%</td>
</tr>
</tbody>
</table>

Final grades are based on the following scale. Plus/minus will not be used.

- 90 or above                     A
- 80-89.99                        B
- 70-79.99                        C
- 60-69.99                        D
- 59.99 or less                   F
The grading scale is a *weighted scale*. Here is an example of how you can keep track of how you're doing in the class and estimate your grade in the class... For example, let's say I earn 43 out of a total of 56 points on the first exam. That means that I have 43/56 or 77% on the first exam. That exam is worth 25% of my final grade. Therefore I've accumulated 19.25 points (.77 multiplied by 25) towards my final grade. Follow this same process for all the assignments similar to the table below.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>The grade I earned and the percentage correct*</th>
<th>Percentage of final grade (based on the grading scale)</th>
<th>Calculation = Sum of the percentage correct multiplied by percentage of final grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm exam</td>
<td>43/56 = .77</td>
<td>25%</td>
<td>.77 x 25 = 19.20</td>
</tr>
<tr>
<td>Final exam</td>
<td>52/60 = .87</td>
<td>25%</td>
<td>.87 x 25 = 21.67</td>
</tr>
<tr>
<td>Research study</td>
<td>106/123 = .86</td>
<td>40%</td>
<td>.86 x 40 = 34.40</td>
</tr>
<tr>
<td>Discussion postings and online activities</td>
<td>22/35 = .63</td>
<td>10%</td>
<td>.63 x 10 = 6.30</td>
</tr>
<tr>
<td><strong>My final grade</strong></td>
<td></td>
<td></td>
<td><strong>19.20 + 21.67 + 34.40 + 6.30 = 81.57 (B)</strong></td>
</tr>
</tbody>
</table>

Note: Check Webcourses to determine the exact points allotted per assignment. The points possible per assignment may be different than illustrated in this example. *These numbers are for illustration only!*
ADDITIONAL POLICIES

Attendance and participation

If you are enrolled in the mixed-mode class, it is most important that you attend class for each face-to-face class period and that you actively participate via Webcourses during non face-to-face class meetings. You are always responsible for weekly reading assignments listed in the syllabus BEFORE class. Most students find that they must read the text material several times. A single reading of most of the material will be inadequate for the majority of students. Generally, only part of the content of the text will be presented in class (and likewise not all of the material that is covered in the text is reflected in the movies).

If you are enrolled in the online class, it is absolutely essential that you watch all the movies available in Webcourses. The movies provide essentially the same material as would have been conveyed to you during discussions held in a face-to-face class. As with the mixed-mode class, you are always responsible for weekly reading assignments listed in the syllabus. Most students find that they must read the text material several times and watch the movies several times. A single reading of most of the material will be inadequate for the majority of students.

Late, make-up and extra credit work

There will be no late work (i.e., work handed in after the due date will not be accepted), no make-up work, no re-dos, and no extra credit work. Please do not ask me to bend or break the rules for you as it is not fair to the rest of the class. It is your responsibility to make sure you know when assignments are due. Do not expect the professor to remind you of upcoming due dates for assignments.

All assignments (including discussion postings) are due at the beginning of class and/or by the dates posted in Webcourses. The only exceptions are highly unusual circumstances (e.g., you become hospitalized, death in the immediate family). Please do not ask for an exception unless you have a highly unusual situation and you have documentation that can support your case. Because you have the entire semester in which to work on your research study, extensions for submitting the research study are granted VERY rarely (even with highly unusual circumstances).

It is the professor’s discretion for granting extensions, and you must notify the professor immediately and be prepared to provide documentation if you find yourself in a situation in which an extension may be required.

Please help prevent the spread of the flu!

Individuals who have flu-like symptoms have a major responsibility in preventing transmission to others. If you have flu-like symptoms, the CDC recommends you “remain at home until at least 24 hours after [you] are free of fever (100 degrees F, 37.8 C) or signs of a fever without the use of fever-reducing medications.”
Accouterments
As a courtesy to others in the class, the use of cell phones and pagers is not permitted during face-to-face class sessions and all like-technology should be turned off or to a silent mode.

Academic integrity
According to UCF Golden Rule guidelines, academic dishonesty/cheating, which includes plagiarism, is a violation of student academic behavior standards and is subject to academic and/or disciplinary action. Such behavior is also a violation of the College of Education's Professional Code of Conduct.

This class abides by the Golden Rule http://www.goldenrule.sdes.ucf.edu/11_behavior.html. Student performance should comply with the standards detailed in the Academic Behavior section of the Golden Rule.

Plagiarism Statement
Plagiarism is a Golden Rule violation, and plagiarism of any kind (including self-plagiarism) will not be tolerated. Every student is expected to do their own work and all of the work produced will be expected to be completed in its entirety by the students who turned them in. It is your responsibility to understand how to cite work properly and to understand what does and does not constitute plagiarism. There are links to websites in Webcourses that provide excellent examples of proper and improper citations. To access these resources, click on "resources" from the course content home page, then click on "writing resources." You are HIGHLY encouraged to review these websites and refresh your memory on paraphrasing and using direct quotes so that you can avoid plagiarizing. **ACADEMIC ACTION FOR ANY ACTS OF PLAGIARISM WILL RESULT IN AN IMMEDIATE FAILING GRADE IN THE COURSE** (regardless of how well or how poorly you are doing at the time). This is a zero-tolerance policy, and I take this very seriously. **There are no second chances.**
Any and all acts of plagiarism will be reported to the Office of Student Conduct.

Turnitin.com will be used for writing assignments and the research study assignment in this class. Turnitin.com is an automated system which quickly and easily compares student reports to billions of websites as well as an enormous database of student papers that grows with each submission. After submission of the paper, I receive a report that states if and how another author's work was used. Action taken by the Office of Student Conduct may include a warning, probation, suspension, expulsion, or permanent conduct record with UCF accessible by other institutions by request.

Additional information on academic honesty at UCF can be found at http://www.osc.sdes.ucf.edu/
Accommodations

The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations. No accommodations will be provided until the student has met with the professor to request accommodations. Students who need accommodations must be registered with Student Disability Services, Student Resource Center Room 132, phone 407-823-2371, TTY/TDD only phone 407-823-2116, before requesting accommodations from the professor.

Caveat

The professor reserves the right to change the schedule, assignments, and/or evaluation criteria throughout the semester. Any changes will be announced to the class with sufficient notice to prepare for changes. It is your responsibility to keep informed about discussion topics and assignments. If in doubt, please check with the professor.
# Fall 2010 Tentative Agenda

<table>
<thead>
<tr>
<th>Class</th>
<th>Meeting</th>
<th>Topic</th>
<th>Related reading and major deadlines***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 24</td>
<td>Face-to-face*</td>
<td><strong>Module 1:</strong> Introduction</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>Aug. 31</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 2:</strong> Data representation</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>Sep. 7</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 3:</strong> Univariate population parameters and sample statistics</td>
<td>Ch. 3</td>
</tr>
<tr>
<td>Sep. 14</td>
<td>Face-to-face</td>
<td><strong>Module 4:</strong> Normal distribution and standard scores</td>
<td>Ch. 4</td>
</tr>
<tr>
<td>Sep. 21</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 5:</strong> MIDTERM EXAM (via Webcourses)</td>
<td>Available 12:01 am Sep. 20; Due 11:59 pm Sep. 27</td>
</tr>
<tr>
<td>Sep. 28</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 6:</strong> Probability and sample statistics</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>Oct. 5</td>
<td>Face-to-face</td>
<td><strong>Module 7:</strong> Inferences about a single mean</td>
<td>Ch. 6</td>
</tr>
<tr>
<td>Oct. 12</td>
<td>Face-to-face</td>
<td><strong>Module 8a:</strong> Inferences about the difference between two means</td>
<td>Ch. 7</td>
</tr>
<tr>
<td>Oct. 19</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 8b:</strong> Inferences about the difference between two means</td>
<td>Ch. 7</td>
</tr>
<tr>
<td>Oct. 26</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 9:</strong> Inferences about proportions</td>
<td>Ch. 8</td>
</tr>
<tr>
<td>Nov. 2</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 10:</strong> Bivariate measures of association</td>
<td>Ch. 10</td>
</tr>
<tr>
<td>Nov. 9</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 11:</strong> Inferences about variances</td>
<td>Ch. 9</td>
</tr>
<tr>
<td>Nov. 16</td>
<td>Face-to-face</td>
<td>Open lab (attendance optional)</td>
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<tr>
<td></td>
<td></td>
<td>(Open to students from ALL sections—mixed and online. This is a great opportunity to talk with the professor to clear up last minute details on your research paper; go over questions on the content, etc.)</td>
<td></td>
</tr>
<tr>
<td>Nov. 23</td>
<td><strong>Webcourses</strong></td>
<td>Webcourses “presentations”</td>
<td>Research paper due (see rubric for deadlines for posting summary and responses to peers)</td>
</tr>
<tr>
<td>Nov. 24-Dec. 7</td>
<td><strong>Webcourses</strong></td>
<td><strong>Module 12:</strong> FINAL EXAM (via Webcourses)</td>
<td>Available 12:01 am Nov. 24; Due 11:59 pm Dec. 7</td>
</tr>
</tbody>
</table>

The professor reserves the right to change the schedule, assignments, and/or evaluation criteria throughout the semester. Changes will be announced to the class with sufficient notice to prepare. It is your responsibility to keep informed about assignments and changes in schedules. If in doubt, please check with the professor.

*The face-to-face sessions are required ONLY for the students who are enrolled in the mixed-mode section(s). If you are enrolled in the online section, all modules will be completed online—there will be NO face-to-face classes.*

**Classes denoted as "Webcourses" do NOT meet face-to-face during these weeks.***

***See Webcourses module"
The graphical representation of our conceptual framework is based on basic geometric shapes that aptly portray key aspects of the framework:

I. At the heart of the model are three concentric circles creating a "target" for graduates from all of our professional education programs. The core objective ("bull's eye") is becoming a Professional Educator, an achievement that requires continuous reflective practice (middle ring) and professional development aligned with applicable national, state, and institutional standards (outer ring).

II. The outer pentagon of the conceptual framework represents five broad orientations regarding the preparation of professional educators (Academic, Teaching/Scientific, Practical, Critical/Social, and Humanistic), which serve as a broad foundation for the framework.

III. Integrated throughout all aspects of our conceptual framework and thus reflected as a circle-in-motion is our circle of core beliefs (Research Base, Best Practice, Life-Long Learning, Ethics, Social Justice, Equity, Diversity, Caring, Democracy, Academic Standards, and High Quality Education).

IV. Note that the triangle represents the three major dimensions of professional development: Knowledge (Subject Matter Pedagogy, Ethical Standards), Skills (Communication, Systematic Inquiry), and Dispositions (Professional Commitment, Professional Collaboration). The next three overlapping triangles represent three broad levels of professional development: Pre-professional, Professional, and Accomplished (note the physical progression indicating that professional development always moves in the direction toward Professional Educator).