**Quantitative and Psychometric Methods  
Francis Marion University  
Spring 2020**

**Instructor:** William P. Wattles, Ph.D. **Office:** CEMC 109G Phone: 661-1639   
**Class meets:** MWF 10:30-11:20 CEMC234B   
**Office hours:** 9:00-10:30 Monday-Friday  Click [here](file:///\\filesrv2.fmarion.edu\WWattles.www\psy302\Psy302SyllabusFall2019.docx) to print a paper copy

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### Texts:  Spatz, Chris. (2019)  Exploring Statistics: Tales of Distributions. 12th Edition. Conway Arkansas:  Outcrop Publishers (Required)                  Class Outline:

Survey of psychometric theory of correlational analysis, norms, reliability, validity and item analysis. Topics also discussed include fundamental descriptive statistics and an introduction to inferential statistics. Semester Goals include:

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| --- | --- |
|  | Students develop an appreciation for the rationale and utility of psychometric methods. |
|  | Understand probability and probability distributions. |
|  | Differentiate between quantitative and qualitative data. |
|  | Emphasize reliance on empirical procedures in research and evaluation. |
|  | Learn to use a spreadsheet program for actual manipulation of data. |
|  | Be able to describe data using charts and numbers. |
|  | Understand the basic principles of inferential statistics including confidence intervals and effect size. |

### Grades:

Final Grades will be determined as follows: (There is no extra credit option)

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| --- | --- | --- | --- | --- | --- | --- |
| Three exams | 45% |  | A | 90-100 | C | 70-76 |
| Final Exam | 20% |  | B+ | 87-89 | D+ | 67-79 |
| Homework | 15% |  | B | 80-86 | D | 60-66 |
| Quizzes | 10% |  | C+ | 77-79 | F | <60 |
| Paper | 10% |  |  |  |  |  |

### Attendance:

The FMU catalog states: "It is the responsibility of the student to attend all scheduled meetings in the courses in which he/she is enrolled." Students missing more than six (6) classes (excused or unexcused) will be dropped from the class with a grade of NC or W. Make-up exams will be given to students with appropriate written excuses only on April 27, the last day of classes.

The material may be difficult so I administer quizzes as an incentive for reading the assignments. I will drop the lowest score for those who take all the quizzes. Due to the nature of the material **exams will be cumulative.**

### Prerequisites:

PSY 206, 216 PSY 220  prerequisite/corequisite

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|  | Week | Tentative Schedule |  |  |
| Week | Beginning | Subject | PPT | Text |
| 1 | 13-Jan | Scientific Thinking, Essence of Method | 1 | 1,2 |
| 2 | 20-Jan | Describing distributions | 2 | 3,4 |
| 3 | 27-Jan | Normal Distributions and Standard Scores | 3 | 7 |
| 4 | 3-Feb | Sampling Distributions, **Exam One** | 5 | 8 |
| 5 | 10-Feb | Scatterpots, Correlation | 4 | 6 |
| 6 | 17-Feb | Confidence intervals, hypothesis test | 6, 7 | 10 |
| 7 | 24-Feb | One-sample and matched pairs t-test, **Exam 2** | 8 |  |
| 8 | 2-Mar | two sample t-tests, effect size |  | 5 (pages 86-88) |
| 9 | 9-Mar | Apa reporting of resutls |  |  |
| 10 | 16-Mar | Spring Break Yeah! |  |  |
| 11 | 23-Mar |  |  |  |
| 12 | 30-Mar | Inference for proportions, Mann-Whitney **Reports Due** | 9 |  |
| 13 | 6-Apr | Chi Square, two-way tables | 10 | 14 |
| 14 | 13-Apr | Inference for regression | 11 | 6 |
| 15 | 20-Apr | Psychometrics: reliability, validity, item analysis | 12 |  |
| 16 | 27-Apr |  |  |  |
| Final Exam Wednesday April 29, 2020 3:00-5:00 p.m. | | | | |
| Attendance is mandatory unless excused in writing by the department chair or dean | | | | |