

# ***PSYC 3256 EL2: Design and Analysis I – 2006***

## **COURSE OUTLINE**

**INSTRUCTOR:** Dr. Rashmi Garg in Room A228

**OFFICE HOURS:** Dr. R. Garg: Tuesday & Thursday – 2:30-4:00 p.m. ↔ Any other time I am in A228.

Teaching Assistant: To be announced

**NOTE:** Please feel free to see me or the Teaching Assistant during office hours. They are designed to help you.

**TEXTBOOK:**

1. *Statistical methods for psychology* by David C. Howell. Duxbury.
2. *Design and Analysis I: Annotated computer printouts* by R. Garg. Purchase it from Department of Psychology's Secretary (Room A222).

**Note:** It is important that you get both textbooks to get the most out of the course.

**REFERENCE BOOKS:**

3. *Research design and methods: A process approach* by Bordens, K.S., & Abbott, B.B.
4. Green, S.B., & Salkind, N.J. (2003). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (3<sup>rd</sup> ed.). Prentice-Hall.
5. *Computer-assisted research design and analysis* by B.G. Tabachnick and L.S. Fidell. Allyn & Bacon.

A copy is available at the reference desk in the Library.

		Book/Chapters
1. <b>Research Methods</b>	<ul style="list-style-type: none"> <li>➤ Introduction to research method</li> <li>➤ Research plan</li> <li>➤ Research strategy (correlational designs &amp; experimental designs)</li> <li>➤ Between-subjects designs</li> <li>➤ Within-subjects designs</li> <li>➤ Factorial designs</li> <li>➤ Confounding variables and ethics</li> </ul>	3/ 2-5, 6, 8, 9
2. <b>Review of Statistics</b>	<ul style="list-style-type: none"> <li>➤ Descriptive and inferential</li> <li>➤ Null and alternative hypotheses</li> <li>➤ Significance and Type I and Type II errors</li> <li>➤ Univariate and multivariate</li> <li>➤ Parametric and nonparametric</li> </ul>	1/ 1-5, 7, 8 2/ Pp. 4-31
3. Organizing, describing, and screening data		1/ 2 2/ Pp. 4-31

4. Group differences and test of assumptions	
5. <b>Oneway Analysis of Variance (F-ratio, effect size, and power)</b> ➤ Post-hoc pairwise comparisons ➤ Planned comparisons ➤ Trend analysis	1/ 11, 12 2/ Pp. 32-46
6. <b>Factorial Analysis of Variance</b> ➤ Main effects and interaction (F-ratio, effect size) ➤ Simple effects	1/ 13 2/ Pp. 47-72
7. <b>Repeated Measure Analysis of Variance (F-ratio, effect size)</b> ➤ Post-hoc comparisons	1/ 14 2/ Pp. 73-88
8. Mixed design (factorial analysis)	1/ 14 2/ Pp. 74-88
9. Analysis of covariance [if time permits]	1/ 16 2/ Pp. 89-102

### Computer Labs

There will be a computer lab per week.

The attendance to the lab is mandatory. In each lab, a small assignment will be given which needs to be completed in the laboratory time. Absolutely no lab assignments will be accepted outside of the lab time. There will be nine to ten lab assignments. Marks for the best 8 or 9 lab assignments will be counted towards the final grade.

### Take-Home Assignments

- ✓ There will be two to three take-home assignments.
- ✓ In assignments (lab and take-home), absolutely **NO COPYING** from each other. If caught, a grade of 0 will be assigned.

### GRADE ALLOCATION

Lab Assignments . . . . .	36 %
Take-home Assignments . . . . .	24 %
Final Exam . . . . .	40 %