T/Th: 11:00 – 12:15, McDowell, Room 111
Professor Hestvik
Department of Linguistics and Cognitive Science
42 E. Delaware Avenue
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Course title: Research Methods in Cognitive Science (previously taught as CGSC 451/651 Experimental Cognitive Science)
Number: CGSC 420, CGSC 620
Semester offered: Fall
Time: Tuesday and Thursday, 11:00AM - 12:15PM, McDowell Hall room 111 Any student who has a need for accommodation/s based upon the impact of a disability should contact me as soon as possible. Contact the Office of Disabilities Support Services to coordinate appropriate accommodations.

Instructor
Dr. Arild Hestvik, Associate professor, Department of Linguistics and Cognitive Science.
Bio: Dr. Hestvik received his PhD in theoretical linguistics at Brandeis University in 1990 and has held academic positions in Germany and Norway. He later retrained in experimental psycholinguistics at the CUNY Graduate Center, and joined UD in 2007. He directs the Experimental Psycholinguistics Laboratory (http://hestvik-lab.cogsci.udel.edu).
E-mail: UD e-mail is arild@udel.edu, but the course policy is that students use the Sakai message tool for e-communication. Sakai messages will be checked regularly and answered as quickly as possible (but sometimes it may take a day or two).
Office hour: Tuesday 2-3pm, room 305, 46 East Delaware Ave. No appointment necessary. Appointments is possible at other times; please talk to instructor in person before or after class to schedule it.

PROGRAM AND COURSE LEARNING OUTCOMES

PROGRAM LEARNING OUTCOMES:
By the end of the Cognitive Science Major, students will...

1. Communicate scientific ideas and methods (i.e., discuss and solve scientific problems and/or provide data or arguments in support of a scientific hypothesis) clearly and effectively, both orally and in writing. (Gen Ed Goal 1)
2. Critically assess scientific research (primary source articles and/or lab reports), methods, and/or problem solving related to cognitive science, linguistics, and speech pathology. (Gen Ed Goal 2)

3. Synthesize multiple methodological or disciplinary research perspectives to analyze a scientific problem and make improvements that advance the issue, debate, or research.

COURSE LEARNING OUTCOMES:
Cognitive scientists, linguists and speech pathologists are increasingly relying on controlled experiments for data collection and for answering research questions. The course aligns with the program learning outcomes by providing a practical research training companion to other cognitive science course, and gives students a general preparation for working in research laboratories and conducting research studies. Students will experience how it is like to participate in the actual experiments and analyze their own resulting data. Learning goals include:
- Create data summaries from raw data collected from multiple subjects, trials and experimental conditions.
- Compute basic descriptive statistics and constructing graphs representing findings using Excel
- Get real-life and hands-on understanding of statistical concepts like main effects and interactions.
- Interpret results and writing lab reports.
- Understanding the relationship between scientific questions, experiments, and interpretation of data relative to the stated scientific questions.
- Acquire the knowledge to develop their own experimental research studies, either as undergraduates or as graduate students
- Interpret statistical methods like t-tests and signal detection theory
- Learn about classical experiments in cognition and cognitive science

TEACHING METHODS AND MATERIALS
The course will consist of lectures and in-class lab exercises, including running actual experiments. Students must purchase the following books and software:


In addition, reading assignments from the research literature relevant to students’ interests (e.g. speech pathology, or psycholinguistics) will be assigned.

(see http://www.pstnet.com/products/PsychMate/). The software provides a software key for use on software installed in the teaching lab. It can also be installed on students’ private computers (requires PC; MAC requires installation of emulators like VirtualBox).
HOMEWORK ASSIGNMENTS, LABS and EXAMS

Presentations: Each student will be required to do a class presentation related to one of the labs.

Labs and homeworks: Students will be required to complete weekly assignments related to research methods and research design, interpretation of experimental data and data management, presentation of and graphing of experimental results using Excel. Some labs may require students to run themselves in an experiment either on their home computer or on lab classroom computer.

Missed assignments: No extensions will be given for missed and late assignments. All assignments must be turned in to Sakai. No assignments may be e-mailed to instructor’s email address. No handwritten assignments will be accepted. No extra credit will be offered.

Exams: There will be a midterm exam, and a final take-home term paper. The term paper will be a report on an actual student run experiment from the class. There is no in—class final exam.

LECTURE AND LAB SCHEDULE
To be announced.

GRADING AND COURSE/CLASSROOM POLICIES

Grades: Grades will be assigned on the basis of performance on problem solving, assignments, class participation and the final project report. The final grade will be determined as follows:
Class presentation: 10%; Assignments and labs: 60%, Midterm exam: 20%; Final report: 10%. Students will receive continuous feedback on how they are doing in the class.

Student responsibilities: Students are expected to read all readings in advance of class, to attend each class, participate in class discussion, and turn in problem solving assignments in a timely manner.

Instructor responsibilities: The instructor will be available during office hours and by appointment. Students will receive detailed feedback on their progress and problem solving.

Classroom policy: No text messaging, cellphones, Facebook or emailing during class. Computers are for academic use only during class.

Academic conduct: All students must be honest and forthright in their academic studies. To falsify the results of one’s research, to steal the words or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Any violation of this standard must be reported to the Office of Student Conduct:
http://www.udel.edu/stuguide/09-10/code.html#honesty