Monday-Wednesday, 3:00 – 4:20 PM **Room BH 336-B**

Instructor	Teaching Assistant
Anna Fisher, Associate Professor Tel: (412) 268-8656 E-mail: fisher49@andrew.cmu.edu Office hours: Thursday, 4:30-5:30, BH-335-I	Rachel McKinney E-mail: ramckinn@andrew.cmu.edu Office Hours: Monday, 4:30-5:30 pm Location: Psychology Lounge (3rd floor BH)
Course Website: http://www.cmu.edu/blackboard	

REQUIRED MATERIALS

- Research Methods: The Knowledge Base (by Trochim). We will use the online copy of the book available here: http://www.socialresearchmethods.net/kb/index.php This book is also available as a printed book and you can purchase it from online sellers if you would like to supplement the online text with a printed version.

- Open Learning Initiative (OLI) course supplement: Statistical Reasoning
    - Go to http://oli.cmu.edu/ and sign in with your CMU id/password; register for the course using the following course key: DRM2017
    - The following modules (with corresponding activities and assessments) should be completed by the dates listed on pp. 5-7 of the syllabus: Modules 1-3 (Introductory material with no checkpoints), 4, 7, and 13.

COURSE OBJECTIVES

The broad aim of this course is to teach you the skills and concepts necessary to create, analyze, report, and evaluate scientific knowledge about human development. In addition to class lectures and discussions, you will design and conduct research projects designed to introduce you to working with children, provide you with an understanding of research methodology, and enhance your knowledge of analysis and communication of research findings. If successful, this course will improve your ability to:

- Apply the basic principles of scientific research, measurement, and experimental design;
- Describe the special methodological challenges of developmental research and develop strategies for addressing these challenges;
- Use library and other resources to find out what is known about a research topic;
- Formulate and articulate research questions and hypotheses pertaining to child development;
- Design and conduct a research project with young children;
- Identify ethical issues associated with research involving children;
- Use the IBM SPSS software to perform statistical analyses and interpret the outcomes of these analyses;
- Communicate research findings effectively in written and oral format;
- Evaluate others' research critically and constructively.

COURSE OVERVIEW

This is a laboratory course in which you will be engaged in "hands on" psychological research. The course is organized around three core components. The first component consists of classroom instructional activities (lectures, discussion, readings, etc.) that provide a general introduction to research design and methodology. The second component involves data analysis labs (learning to choose and perform appropriate data analyses in SPSS). The third component involves integrating the knowledge and skills you gained in the other two components of the course to carry out a research project with children at the Children's School at CMU.

Research Projects

You will conduct two research projects during this course. The sequence of projects is designed to give you increasingly more responsibility as you learn the "tools of the trade". Participants in both projects will be 3-, 4-, and 5-year-old children from the Children's School at CMU. Refer to the table below for an overview of the projects.

Project	Topic	Literature	Design & Materials	Data collection	Data Analysis	Interpretation & Write-up
Project 1	Attention & Performance	Provided	Provided	By Group	Individual	Individual Paper
Final Project	Students' Choice	By Group	By Group	By Group	Individual	Individual Paper + Poster Presentation

Group and Individual Work

Both projects will be completed by 2- to 4-person groups. You will form your group at the beginning of the course, and you will work with that group for the duration of the semester. For each of these projects, you will collaborate with your partners on different phases (design, data collection, poster preparation, etc.). However, you will be individually responsible for the written reports and oral poster presentation, and graded accordingly.

For both research projects you will, in collaboration with the other members of your group, conduct experimental sessions with the children at the CMU Children's School. Therefore, in forming your groups, it is essential that you and your partners are all available during the same testing time slots (see Testing Time Slots section, below). It is also important that you arrive on time at all scheduled meetings and experimental sessions that your group has arranged fully prepared to participate in whatever role you have agreed to. Usually, an experiment cannot begin until all group members are present, and experimental time slots are very scarce. Being late by 15 minutes can set your project back by a week!

Testing Time Slots at the Children's School

Because your group will be carrying out research at the CMU Children's School, you must be able to set aside at least two time blocks a week (approx. 2 hrs. per block of time) within the constraints listed in the table below. Note that this is in addition to class meeting times. You must choose one of the following pairs of times (i.e., either block A, B, C, or D in the table):

	Monday	Tuesday	Wednesday	Thursday
8:30 am – 10:30 am	Block **A**	Block **B**	Block **A**	Block **B**
12:30 pm– 2:15 pm	Block **C**	Block **D**	Block **C**	Block **D**

Although you will not need these time slots every week, it is important to keep them open so that they will be available whenever they are needed to collect data at the Children's School. Thus, if your group chooses Block B, then you must be sure that you do not have any other regular obligations on Tuesday and Thursday mornings from 8:30 - 10:30.

Do not schedule any other regular activities in the slot that your group has chosen.

Requirements & Grading

Reading assignments: Readings for each class meeting will be posted on Blackboard (under "Course Documents" → "Course Readings"). The reading assignments must be completed **before** class.

Written Assignments: Written assignments will include three exams, five SPSS Lab reports, and written reports on two research projects. As noted above, all research projects will be carried out in groups, but they will be graded individually. Due dates for all assigned work are noted in the course outline (pp. 5-9 of the syllabus).

Participation: This course requires your active participation throughout the semester. Your participation will be particularly critical during the class periods when research groups will brainstorm for research ideas, practice testing children, and discuss project feedback. Therefore, you will earn participation points on the days on which group activities are planned during class (these group activities are marked in green in the course outline below).

Other Assignments: You will be required to make a poster presentation to report results of your research project. You will also need to submit a research proposal to the Children's School; while this assignment is not graded completing it successfully it is absolutely crucial to your success in this course. Finally, you will also be required to complete OLI course activities.

Assessment: Each assignment will be worth a certain number of points, and the total amount of points you can accumulate in this class is 1000. The following grading scale will be used:

1000-900 pts: A 899 - 800 pts: B 799 - 700 pts: C 699 – 600 pts: D > 600 pts: F

Assignment	Points
3 Exams (100 points each)	300
5 SPSS Lab Reports (20 points each)	100
Participation (5 points per each "green day")	45
Project 1 Write-Up	150 (includes 25 teammate points)
Final Project 2 (Term Paper)	300 (includes 50 teammate points)
Final Project 2 (Poster Presentation)	45
OLI activities & assessments (10 pts per checkpoint)	60
	Total Points: 1000

Policies

Late Work: Grades for late work will be reduced by 10% if the work is handed in within 24 hours and by 20% if the work is handed within 48 hours after the due date/time. After that, no credit will be given. Anticipated exceptions to this rule may be requested before work is due, and will be granted only on the grounds of serious problems on a case-by-case basis. Requests for extensions based on unanticipated circumstances (e.g., health problems) must be substantiated in writing (e.g., a note from Student Health services that just verifies the need for an extension. Details are not required.) The principle here is fairness to other students.

Cheating and Plagiarism: Cheating and plagiarism are defined in the CMU Student Handbook, and include (1) submitting work that is not your own for papers, assignments, or exams; (2)

copying ideas, words, or graphics from a published or unpublished source without appropriate citation; (3) submitting or using falsified data; (4) submitting the same work for credit in two courses without prior consent of both instructors, and (5) unauthorized assistance. The list above contains several common examples of cheating and plagiarism, but it is not an exhaustive list; therefore, please review CMU Policy on Academic Integrity:
http://www.cmu.edu/policies/documents/AcademicIntegrity.htm

Any student who is found cheating or plagiarizing on any assignment for this course: (1) will receive zero points for this assignment, and (2) will be subject to the Academic Disciplinary Action Procedures for Undergraduate Students:
http://www.cmu.edu/student-affairs/theword/acad_standards/creative/disciplinary.html.

Working at the Children's School: Policies for research at the CMU Children's School will be reviewed in class. When working at the Children's School, students will be expected to abide by all school policies. *Students who fail to do so will not be permitted to work at the Children's School, and will consequently be unable to complete the course.*

Human Participant Protection: The Carnegie Mellon Institutional Review Board stipulates that all individuals conducting research with human subjects must demonstrate completion of the education program on the use of human participants in research taken through the Collaborative Institutional Training Initiative (CITI). Access the course at https://www.citiprogram.org/Default.asp? and take the Social & Behavioral Research Basic/Refresher course. You must complete the course prior to our visit to the Children's School on 9/21/2016. (The online training may take several hours to complete). After you have successfully completed the course, you should print two certificates. Keep one certificate for your records and bring the other certificate to the Children's School on 9/18/2017.

Important Contacts at the Children's School	
For project review and approval:	For scheduling and administrative issues:
Professor Sharon Carver Director, CMU Children's School 412-268-1499; sc0e@andrew.cmu.edu	Allison Drash Administrative Coordinator, CMU Children's School 412-268-2199; adrash@andrew.cmu.edu

Use of Electronic Devices: Some class activities will require the use of a lab computer or personal laptop. When this is the case, the students will be explicitly informed about this by the instructor or the TA. In all other cases, the use of laptops, cell phones, and other similar electronic devices is not permitted during class. To facilitate note taking, lecture slide handouts will be posted on Blackboard before each class. Failure to follow these guidelines will result in a reduction in your participation grade.

If you are interested in what research says about laptop use in class, or multi-tasking more generally, you might look at these papers (available on the course BlackBoard):

Fried, C. B. (2008). In-class laptop use and its effects on student learning. Computers & Education, 50, 906–914.

Kirschner, P. A., & Merriënboer, J. J. V. (2013). Do learners really know best? Urban legends in education. Educational Psychologist, 48(3), 169–183. doi:10.1080/00461520.2013.80439

Kraushaar, J. M., & Novak, D. C. (2010). Examining the affects [sic] of student multitasking with laptops during the lecture. Journal of Information Systems Education, 21(2), 241-251.

Wood, E., Zivcakova, L., Gentile, P., Archer, K., De Pasquale, D., & Nosko, A. (2012). Examining the impact of off-task multi-tasking with technology on real-time classroom learning. Computers & Education, 58(1), 365-374. doi:10.1016/j.compedu.2011.08.02

What Can You do to be Successful in this Course?

Be organized. Look over the syllabus at the end of each week to note upcoming deadlines and activities. Most assignments cannot be completed quickly the night before the deadline, therefore you will need to plan ahead and allow yourself sufficient time to complete assignments.

Come prepared. Read online course materials carefully before coming to class. Come to class prepared to ask questions and offer your ideas.

Be a good team mate. This is a project-based course and the projects are completed in teams. Being a good team mate is essential to your success in this course and to the success of your team. Being a good team mate involves: being responsive to other team members' e-mails and phone calls; taking initiative for parts of the project; coming to team meetings on time and prepared; helping out the team even it means doing a task you were not originally assigned.

Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website at http://www.cmu.edu/counseling/. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

Due Dates are in Red; Quiz Dates are in Purple; Required Activities are in Green (participation points)

	Date	Topics & Activities	Reading	Due Dates
WEEK 1				
1	Aug. 28	Class Overview; Breaking into teams OLI Probability & Statistics Course Scientific Approach Part I	http://www.socialresearchmethods.net/kb/philosophy.php http://www.socialresearchmethods.net/kb/dedind.php	
2	Aug. 30	Language and Structure of Research **Final Projects Discussion**	http://www.socialresearchmethods.net/kb/language.php http://www.socialresearchmethods.net/kb/strucres.php	OLI Modules 1-3 due
WEEK 2				
3	Sep. 4	**Labor Day: No Class**		
4	Sep. 6	Experimental Design Overview **Final Project Ideas Brainstorming**	http://www.socialresearchmethods.net/kb/design.php (up & including Probabilistic Equivalence)	OLI Module 4 due (both checkpoints)
WEEK 3				
5	Sep. 11	Factorial Designs **Final Projects Discussion**	http://www.socialresearchmethods.net/kb/expfact.php	Final Project Research Question & Preliminary References due
6	Sep. 13	Research Ethics Children's School Research Policies	http://www.socialresearchmethods.net/kb/ethics.php http://www.psy.cmu.edu/cs/researchers/ResearchPolicy13-14.pdf	OLI Module 7 due (both checkpoints)
WEEK 4				
7	Sep. 18 **MM**	**Visit the Children's School** (meet at 3 pm in front of Margaret Morrison Bld.)	https://www.citiprogram.org/Default.asp?	CITI Training due; print certificate & bring to the Children's School
8	Sep. 20	**Exam 1**		By Friday noon schedule familiarizations for next week
WEEK 5		**FAMILIARIZATION AT CHILDREN'S SCHOOL FOR PROJECT 1**		
9	Sep. 25	Measurement	http://www.socialresearchmethods.net/kb/measure.php (up to 'Survey')	
10	Sep. 27	**Working on Final Projects**	**Bring your laptops to class!**	

		Test on Children's School Policies		
WEEK 6				
13	Oct. 2	Psychological Testing; Intro to Project 1		Final Project Proposals Due
14	Oct. 4	**Practice data collection for Project 1**		By Friday noon schedule testing sessions for next week
WEEK 7		**DATA COLLECTION FOR PROJECT 1**		
15	Oct. 9	Quasi-Experimental Designs Conclusion Validity	http://www.socialresearchmethods.net/kb/quasiexp.php http://www.socialresearchmethods.net/kb/concval.php	OLI Module 13 due (Checkpoints 1 & 5)
16	Oct. 11 **332-P**	SPSS Lab 1	Fisher (2011)	Lab 1 report due at end of class By Friday noon schedule testing sessions at the Children's School
WEEK 8		**DATA COLLECTION FOR PROJECT 1**		
17	Oct. 16 **332-P**	SPSS Lab 2		Lab 2 report due at end of class Revised Final Proposals Due
18	Oct. 18	**Exam 2**		By Friday noon schedule familiarizations for next week!
WEEK 9		**ADDITIONAL FAMILIARIZATIONS AT CHILDREN'S SCHOOL FOR FINAL PROJECTS**		
19	Oct. 23 **332-P**	SPSS Lab 3		Lab 3 report due at end of class
20	Oct. 25	**Practice testing for Final Projects**		By Friday noon schedule testing sessions for next week!
WEEK 10		**FINAL PROJECT PILOTING**		
21	Oct. 30 **332-P**	SPSS Lab 4		Lab 4 report due at end of class
22	Nov. 1	APA Style; Project 1 Research Paper	http://www.socialresearchmethods.net/kb/writeup.php Sample Project 1 Papers	

		Guidelines		
WEEK 11		**DATA COLLECTION FOR FINAL PROJECTS**		
23	Nov. 6 **332-P**	SPSS Lab 5		Lab 5 report due at end of class
24	Nov. 8	Infancy Research Methods WEIRD problem in developmental psychology	**Reading posted on Canvas**	By Friday noon schedule testing sessions for next week!
WEEK 12		**DATA COLLECTION FOR FINAL PROJECTS**		
25	Nov. 13	External and Ecological Validity	http://www.socialresearchmethods.net/kb/external.php	**Paper 1 due**
26	Nov. 15	Sampling; Survey Research Data collection updates	http://www.socialresearchmethods.net/kb/sampling.php http://www.socialresearchmethods.net/kb/survey.php	
WEEK 13				
27	Nov. 20 **332-P**	Poster and Final Paper Guidelines **Final Projects Data Entry**	**Bring your data to class!**	
28	Nov.22	**Day Before Thanksgiving; No Class**		
WEEK 14				
29	Nov. 27 **332-P**	SPSS Lab 6: Final Project Data Analysis (Bring ALL data to class in excel format!)	http://www.socialresearchmethods.net/kb/analysis.php	
30	Nov. 29 **332-P**	**Poster Preparation**	http://www.socialresearchmethods.net/kb/writeup.php	
WEEK 15		**POSTER SESSION PRESENTATION ON THURSDAY**		
31	Dec. 4	**Exam 3**		
32	Dec. 6	**Poster presentation practice**		
33	Dec. 7	**Poster session: Atrium outside the Baker Coffee Shop, 4:30-6:30 pm**		
WEEK 16		**FINAL PAPER WRITE-UP**		
34	Dec. 11	**Final papers due by 3 pm**		

Notice: Due dates, assignments, and activities outlined in this syllabus are subject to change.

Additional Readings

Resources for Choosing a Research Topic

Santrock, J. W. (1994). *Child Development* (6th ed.). Madison, Wis.: Brown & Benchmark Publishers.

Siegler, R. S., & Alibali, M. W. (2005). *Children's Thinking* (4th ed.). Upper Saddle River, N.J.: Pearson Education/Prentice Hall.

Siegler, R. S., Deloache, J. S. & Eisenberg, N. (2003). *How Children Develop*. New York: Worth Publishers.

Data Analysis and Paper Preparation Guidelines

American Psychological Association. (2013). Publication manual of the American Psychological Association (6th ed.). Washington, DC: Author. [Note: This is in the Reference Section of Hunt]

Bem, D. J. (2003). Writing the empirical journal article. In M. P. Zanna & J. M. Darley (Eds.), *The Complete Academic: A practical guide for the beginning social scientist*. New York: Random House.

Cash, T. (2009). Caveats in the proficient preparation of an APA-style research manuscript for publication. *Body Image*, 6, 1-6.

Children's School Policies. http://www.psy.cmu.edu/childrensschool/Research/CourseProjPolicies05-06.pdf

Field (1982). Infancy. In R. Vasta (Ed.) *Strategies and Techniques of Child Study*. Academic Press.

Sternberg, R. (1988) *The psychologist's companion: A guide to scientific writing for students and researchers*. New York: Cambridge University Press.

Wright, D.B. (2003). Making friends with your data: improving how statistics are conducted and reported. *British Journal of Educational Psychology*, 73, 123-136.