EPSY XXX: EDUCATIONAL NEUROSCIENCE
Syllabus
Spring 2016, Face-to-face
Department of Educational Psychology

Instructor: Steven Woltering, Ph. D.
Contact: swolte@tamu.edu.
Office hours: By appointment, 718B Harrington Tower
Teaching Assistant: TBD

Main Textbook: None, articles only.

ABOUT THIS COURSE

Welcome to EPSY689, Educational Neuroscience! Neuroscience has been, and still is, taking the field of psychology by storm and education is next. This course is meant for educational professionals, clinicians, and anyone interested in the psychology of learning who wishes to be prepared for an age where neuroscience and other biometrics will become an increasingly important factor in explaining our thoughts, motivations, and behavior. This course may also be useful for neuroscientists who wish to learn about theoretical models which can bridge the translational gap between biological mechanism and behavior.

In the course, we will mostly look at human learning from a biological perspective. We will cover the fundamentals of genetics and neuroscience before we discuss how we can use these principles to better understand under what conditions our brains develop and function most optimally. Next to basic factors such as sleep, nutrition, and exercise, we will also look at the biological substrates of emotions and motivation as well as executive functions (e.g., working memory, attentional control), and skills related to language and mathematics. We will also discuss what we can learn from neuroscience that can be applied to atypical learners, such as those struggling with emotional, learning, and other disorders that make learning and succeeding in educational contexts more challenging (e.g., dyslexia, ADHD, disruptive behavior disorders).
ROLE EXPECTATION

As your instructor (you can call me Dr. Steven), I am proud to offer you ‘Educational Neuroscience’ at Texas A&M University. We will be among the first (and few) to offer such a course in the world hosted by an education department. You can expect me to provide you with a deeper exploration and contextualization of the learning material as provided in the core readings. I will facilitate the learning process by offering you opportunities to interact with the learning material, myself, or your classmates through discussions, presentations, writing, or other activities. Last, I hope my background as an elementary school teacher, behavioral geneticist, and neuroscientists will also be able to provide you with unique perspectives.

I see you, the graduate student, as a self-directed future colleague in a common quest to generate new knowledge or applications that will transform lives for the better. Building on our diverse backgrounds, personal goals, and skills, I look forward to learning from each other’s insights and perspectives.

My main expectation is that you:
- have read this entire syllabus and agreed to all its content before the course begins.
- are here because you want to improve your skills, and advance your knowledge, about the science of learning.
- will alert me as soon as you are under-challenged or unable to fulfill the basic course requirements.

The teacher assistant (TA) will allow me to focus more on the quality of teaching and feedback. When you have a general or specific question about the course, available resources, or a complaint about the marking, please always contact a TA first. If the TA won’t be able to resolve your question, she or you can contact me directly at swolte@tamu.edu. When appropriate, I will involve the TA in my answer so s/he will be able to help other students who have similar queries. We strive to get back to you within 24hrs. In addition to being a helpful resource, TA’s may direct class activities, moderate debates, or assist with marking.

CLASS FORMAT

A typical class will start with a lecture. Lectures won’t just summarize the readings but build onto the prepared materials to deepen and personalize your level of knowledge and surpass that of a standard textbook. Discussion during lectures is encouraged to promote critical thinking.

After a short break there will be a class activity or demonstration followed by student presentations. Class activities are aimed at promoting student involvement with each other and the learning material. Each class will end with a take-home message, a reflection on whether the class-goals were met, and what to expect when preparing for the next class.
Your course grade is based on your performance in two reaction papers (40 points max), two wiki reviews (30 points max), one class presentation (20 points max), and general class participation (10 points max).

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*Your transcript may reflect only a single letter grade.

**Reaction papers (40 pts):** You are required to submit a minimum of two double-spaced 2-page reaction papers. You can hand in as many reaction papers as you like, however, the best two papers will count towards your final mark (20 points each, max). Reaction papers are short reactions to the material you studied in preparation of a class. Reaction papers can be emailed <[Name] [Class #]> (e.g., [John Flynn – Class 8]) to me at any time in the course but before the first class activity starts of the class you did your reaction paper topic on. This way, we can all benefit from your insights and ideas during the class. Please note that everyone should have submitted at least one paper by the 7th class.

Reaction papers can be in the form of a critique, novel synthesis of readings, proposal for a potential application or research, or an integration of the material with your own work or interests. The intended audience of your writing are professional reviewers (of grants, scholarships, scientific journals/outlets) in your field of interest. Reaction papers should not exceed a two pages and be in 12pt Times New Roman font, double spaced with 1” margins. An extra page can be used to denote references (APA-style, latest edition) and to add up to 2 footnotes to explain specialist terms or concepts. To save space, you are allowed to use numbers in the text to refer to your references instead of writing out the author names. Papers should be titled, dated, and contain your name and course code (EPSY 673).

You will receive feedback on your work the week after you have handed in your paper. Papers will be judged on formatting and academic style, clarity of written expression, understanding of material, and novelty. However, after your first paper, a very important criterion will be your own progress. All your reaction papers must be on different topics. More information on these assignments, including helpful resources to improve your writing, can be found on the course website.

*Please note that the feedback is intended to challenging. An average student can be expected to hand in more than three papers for a satisfactory mark.*

I believe this approach will give you more high-quality teacher-student feedback, allow for more opportunity to write on topics when you feel inspired, and enable you to spread your effort across the semester instead of a final assignment during a stressful period. Moreover, learning how to write succinctly is an important skill in obtaining grants & scholarships as well as manuscripts.
Wiki reviews (30 pts): You are required to submit 2 literature reviews (15 points each, max) on a topic of your choice as indicated in the lab wiki page on the Educational Neuroscience textbook project. This project aims to create the first (and best!) textbook on Educational Neuroscience. You will gain access to the wiki which contains an outline/draft including tags where specific literature reviews are needed.

Reviews should, 1) contain a clear description of your search criteria and databases used, 2) contain full references to the source of the material, and 3) report findings in a scientifically sound, objective, unbiased and balanced fashion (this may also be in the form of an excel sheet). There are no page limits, however, we expect a typical review to consist of no more than 4 pages (including references/tables, etc…). More information on this assignment, including examples, can be found on the course website and wiki pages.

You can hand in reviews once at any point during the course.

Class presentation (20 pts): Students are required to do one solo presentation of about 30 minutes on a topic of their choice. You are encouraged to do your presentation on the topic you choose for your wiki review and contain presentations of scientific peer-reviewed papers, case-studies, or other reliable sources on a topic closely related to the theme of the class. Typically, solo presentations happen near the end of a class. The idea is for your presentation to supplement the required class material and further engage your classmates.

I aim to have a schedule finalized by the end of the second class. Topics for the presentation should be approved by Dr. Woltering at least a week ahead of time. This will prevent your content from overlapping with class material.

Presentations are judged on your communication skills and understanding of the material. A presentation shouldn’t last longer than 30 minutes in total, should have an interactive component or at least allow for questions to be asked. You are encouraged to use presentation software such as PowerPoint or Prezi.

Class participation (10 pts) & penalty points: Your class participation mark will be determined by your class-attendance, consistent preparation, and active engagement during the class with your instructor, classmates, and learning material. In preparation for a class, you are required to do the readings as listed under ‘prepare’ in the class schedule. The enrichment material is optional, however, you are strongly recommended to check them out.

As an instructor, I reserve the right to hold (un)announced mini-quizzes as well as other means of assessment. Such mini-quizzes consist of easy questions from the required readings. The class activities, in general, are a means to engage with the learning material, and test/expand your knowledge, through discussion, games, videos, and/or other exercises.
As for class attendance, you are expected to be present and active at every class. For each missed class there will be a 10-point reduction on your grade. To avoid the 10-point penalty, you can hand in a make-up assignment that will constitute out of a 4-page summary and reflection of the learning material to be handed in within 2 weeks of the missed class (pass or fail). If more than three classes are missed, your grade will be an auto-fail (independent of make-up assignments).

Students are expected to arrive before the class starts. Points can be deducted if a student is consistently late or misses a large portion of the class.

Please contact me if you think there should be an exception to these rules based on extenuating circumstances.

**BONUS points (up to 10 pts):** Bonus points are added to your total mark at the end of the course. You are in no way obligated to partake in activities that can earn you these points. They can be gained through peer review activities, bonus questions on mini-quizzes, or high-quality feedback comments on the wiki project.

For peer review, you can earn 1 bonus point for each reaction paper you reviewed from one of your classmates (to a maximum of 5 points). Your feedback will be judged (pass-fail) on elements of style, grammar, and formatting but mostly on how you stimulate the author to deepen their thinking, provide clearer argumentation or synthesis, and/or conduct more accurate literature research. Next to comments on how to improve the paper, it’s also important to give detailed feedback on what you thought was good. **Under no circumstance are you allowed to (re)write sections of the paper for them or suggest completely novel ideas!**

Rules: the same rules apply for the handing in and receiving of feedback as with reaction papers with respect to the timing. You need to email me an electronic copy with your comments in track changes. You must have permission from the original author to share the review. A paper may only be reviewed for bonus points by one reviewer.

For bonus questions on mini-quizzes, you just simply answer those questions correctly.

For feedback comments on the wiki project (to a maximum of 5 points), Dr. Woltering will determine whether your feedback or suggestion is something he had not considered yet or whether your feedback will have an impact, beyond what was already planned, on the textbook.

**SCHEDULE**

The class units will be called chapters. In each chapter, we will discuss developmental perspectives, treatment/intervention perspectives, as well as psychopathologies.

Chapter 1: Introduction to the course & Basic neuroscience I.

Chapter 2: Basic developmental neuroscience.
Chapter 3: Theoretical principles of neuroscience
Chapter 4: How to read a neuroscience paper
Chapter 5: Exercise and movement
Chapter 6: Sleep, napping, and other mental states
Chapter 7: Nutrition
Chapter 8: Language development
Chapter 9: Memory
Chapter 10: Math and higher-order reasoning
Chapter 11: Executive functions
Chapter 12: Socio-emotional development
Chapter 13: Self-regulation
Chapter 14: The future of Educational Neuroscience: use and misuse.

**QUESTIONS?**

Before you ask a question, after having read the syllabus (of course), please check the general discussion forum’s ‘frequently asked questions’ (FAQ) on the lab’s website. If your question is not answered there, please email the TA if your question is very specific to your situation. If your question is of general interest, we urge you to start a thread in the general discussion forum.
Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Students with Special Needs
Any student who could require assistance in the event of a necessary evacuation of the building in which this class is taught are asked to notify the instructor so that individuals can be identified to assist him/her during an evacuation.

Academic Honesty
As commonly defined, plagiarism consists of passing off as one’s own words, writings, etc., which belong to another. Therefore, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. In addition, all materials generated for this class are copyrighted. As such, you do not have the right to copy the handouts, unless I specifically grant permission. If you have any questions concerning plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section entitled “Scholastic Dishonesty.”

Aggie honor code
“An Aggie does not lie, cheat, or steal or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

For additional information please visit: www.tamu.edu/aggiehonor/
TAMU Integrity Academic Statement and Policy

You must properly acknowledge the sources of the words, ideas, and information you present in all course assignments, assessments, and other activities. Failure to do so constitutes plagiarism

(Aggie Honor System:

http://aggiehonor.tamu.edu/Descriptions/Plagiarism.aspx

In all of your work in this course, you should use your own words to express your understanding whenever possible, being certain that you always give proper credit to the source. When you quote, paraphrase, or summarize another source, you must clearly indicate that you have done so following the rules and formats specified by APA (2010, pp. 169-174). In addition, you must avoid “paraphragarism,” (i.e., plagiarism via paraphrase, Gall, Gall, & Borg, 2007, p. 75), in which text from another source is used with only minor revisions.

For information about how to avoid plagiarism see:

Aggie Honor System Rules:


Plagiarism, TAMU Library Guides:

http://guides.library.tamu.edu/content.php?pid=393112&sid=3221010

Avoiding Plagiarism, TAMU University Writing Center:

http://writingcenter.tamu.edu/for-faculty/teaching-writing/classroom-workshops/undergrad/plagiarism/

Avoiding Plagiarism, Self-Plagiarism, and Other Questionable Writing Practices; U.S. Department of Health and Human Services Office of Research Integrity:

http://ori.dhhs.gov/education/products/plagiarism/6.shtml

Avoiding Plagiarism Tutorial, McGraw Hill:

http://highered.mcgraw-hill.com/sites/0072873469/student_view0/avoiding_plagiarism_tutorial/

How to recognize plagiarism, paraphrasing, Indiana University Bloomington School of Education:

https://www.indiana.edu/~istd/example1paraphrasing.html

All incidents of suspected plagiarism or other academic misconduct in this class will be reported to the Aggie Honor System Office as required by TAMU rules and procedures
If a finding of plagiarism or other academic misconduct is reached, the student’s Chair or Temporary Advisor will be notified. The range of possible penalties for such offenses ranges from mandatory ethics training with no penalty to expulsion from the program or university.