

University of Florida Department of Psychiatry

GMS 6776: Neurobiology (Biomedical Aspects) of Autism Spectrum Disorder

3 Credit Hours

Prerequisite for: GMS6775 and GMS6777

Course Professor:

Mark Lewis, Ph.D., Professor, Department of Psychiatry

Course Directors:

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Course Description: This course is one of four that together make up the Professional Certificate Program in Autism Spectrum Disorder. Autism spectrum disorder, or ASD, is a highly heterogeneous, complex disorder with an onset very early in development and persistence through adulthood. This course focuses on the complex factors that contribute to the development and characteristics associated with ASD. It will provide you with current, evidence-based information about biomedical aspects of ASD, including what is known about the neurobiology that mediates the development and expression of ASD. This course focuses on key features of the biology of ASD including 1) core features of ASD as well as comorbid disorders and associated conditions, 2) etiology or causes and risk factors, 3) differences in the brain associated with ASD, 4) model systems used to study ASD, and 5) biomedical treatments or interventions available to individuals with ASD.

Course Objectives: After successfully completing this course, students will be able to:

- Distinguish the core features of ASD, associated conditions and co-morbid disorders associated with ASD, as well as cognitive, sensory, motor, and perceptual functioning of individuals with ASD
- Classify the multiple lines of evidence that support a genetic etiology and be able to identify environmental risk factors of ASD
- Identify nervous system alterations that give rise to the core features of ASD based on clinical neuroscience and work done with relevant animal models
- identify key neurobiological mechanisms that appear to mediate the development of ASD-like behaviors that have been identified from specific model systems
- Discern the strengths and limitations of biomedical treatments for core features and associated conditions of ASD

How do I get to the course?

This course is delivered using the Canvas learning management system. To get to the course, go to <http://elearning.ufl.edu>, click on "Log in to e-learning" and enter your Gatorlink username and password.

Make sure your computer is properly configured for proper delivery of the course by doing the following:

- 1) Install the latest JAVA program
- 2) Configure your Internet and security settings properly

- 3) Disable pop-up blockers (pop-ups must be allowed)
- 4) Download the Cisco AnyConnect VPN client to allow you to get to restricted-access reading materials (instructions below)

Email academic assistant, Taylor Greene, using the mail tool in Canvas or directly at tgreene740@ufl.edu for help with making sure your computer is configured properly. Improper configuration may result in problems such as not being able to view videos, click links and/or readings, or submit assignments. Only work submitted through the website will be accepted. **Please do not email or call the instructor about tech support issues.**

Who should I contact?

Please review this section carefully so you can direct your question or comment to the appropriate person:

Grading, assignments, due dates, course content: Contact your instructor if you have questions about grading, assignments and course content. Do not post questions or comments about grading or due dates in the discussion assignments for various modules. Do not contact the instructor about tech support. Use the email tool within Canvas to contact the instructor. Click on the "Inbox" tool at the left of the screen to get to the email function.

Tech support: If you are having technical difficulties *related to this course*, such as not being able to click on a link or view a video or reading, please do not contact the instructor. Instead, send an email to academic assistant, Taylor Greene, using the mail tool in Canvas or directly at tgreene740@ufl.edu with the subject line "ASD Online Program." If, on the other hand, you are having *general* technical issues such as not being able to log into your UF account or e-learning, or not being able to download and configure VPN, please contact the UF Help Desk at helpdesk@ufl.edu or 352-392-HELP (4357). **Do not email the instructor for tech support.** If your tech issues don't seem like they will be resolved before the due date of an assignment, please inform the instructor before the deadline passes.

Course communication: Be sure to check your UF email account frequently (log in with your Gatorlink credentials at <http://www.mail.ufl.edu/> for class messages, updates and announcements. Configure your settings within Canvas to make sure that class messages are being delivered to your email account. To do so, in Canvas click on the "Account" tool on the left of the page, then go into "Settings" and "Notifications" and select the appropriate options to ensure that you receive class correspondence in a timely manner. **Make sure that you put "notifications@instructure.com"** on your email address book or safe-sender list, so your messages do not end up in the trash. Course emails will say the sender is "Canvas Message Center <Notifications@instructure.com>"

Syllabus changes: Students will be notified if there are major changes to the syllabus.

Requesting a Gator 1 UF ID card: UF degree-seeking distance students may request a UF ID card. For details: <https://www.bsd.ufl.edu/g1c/idcard/distance.asp>

Course disclaimer: This course (including all materials, ideas, research or clinical observations written or electronically conveyed) is for educational purposes only. The course does not substitute for and does not provide clinical or treatment recommendations or endorsements for the treatment of any individual

person’s condition. This course is simply a survey course whose intent is to familiarize the student with a wide variety of material relevant to the area of study and course participants should not use any of the course material as a basis for diagnosis or treatment of themselves or others. Any clinical intervention or treatment that the course participant elects to take is the sole responsibility of the course participant. Such clinically relevant decisions should always be discussed with the course participant’s physician and/or other health care providers and the consequences of any action taken are the responsibility of the course participant and his or her treating provider.

Educational philosophy: The Department of Psychiatry aims to provide students with a learning environment that is current, interactive and supportive. The online nature of the course provides students with flexibility for listening to lectures, participating in class discussions and submitting assignments. The class can be completed without your ever setting foot on the University of Florida campus or even leaving home. With this freedom comes responsibility and expectations. This course is accredited for 3 UF credits and as a result, it requires at least 3 hours per week in direct “contact,” as well as 6 additional hours to complete assignments and course-related research. Due to the online nature of the course, the contact hours have been replaced with online lectures and readings. Typically, a 3-credit hour course requires up to 9 hours per week of work. Students are asked to be on the lookout for course announcements and emails, and to keep account of all due dates.

Overview of Course Content: The course is divided into 15 modules. Each lesson introduces and overviews a major issue in the field. A typical module consists of:

- a video lecture
- required readings
- a short quiz
- discussion posts

Assignment due dates and times: Unless otherwise noted, all quizzes, web posts and essay assignments are due on the dates specified, on Mondays at 9 a.m. Eastern.

Point breakdown:

Assignment	Points each	Subtotal
Quizzes (17)	10	170
Discussion posts (12)	5 + 1 post x 10 pts	70
Total		240

Note that if you do not submit an assignment you will get a grade of zero for that assignment.

****Students must earn a B or higher in each course taken, to advance to the remaining courses in the certificate. Students who earn a grade lower than a B in a course must retake that course to continue in the program.**

Grading Scale: Final Grades are determined as follows, and will be posted in “Grades” in Canvas.

A ≥ 93%	A- 90-92%	B+ 87-89%	B 83-86%	B- 80-82%	C+ 77-79%
C 73-76%	C- 70-72%	D+ 67-69	D 63-66%	D- 60-62%	E < 60%

View the current UF Grading Policy at
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.)

Accommodations for Students with Disabilities: Students requesting accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student, who must, in turn, provide that documentation to the course director when requesting an accommodation. Contact the Disability Resources Center, <http://www.dso.ufl.edu/drc/>, for information about available resources for students with disabilities.

Viewing Video Lectures: Links to lecture videos are provided on the to-do list for each lesson.

Required Readings/Course Reserves: Required readings, which may include journal articles, e-books, and other materials, are available via the UF library's Course Reserves management software Ares. To get to Ares, first be sure that you are securely connected via VPN (instructions below). Next, in Canvas, simply click on the "Course Reserves" tool on the left of the page. If prompted to do so, you will need to set up an account in Ares. Next, search for your courses by name, course code or instructor name, then select the green "Add Course" button to add the desired course to your account. Once you are in Course Reserves for a specific course, click on "View Item" next to the title of the item you want to retrieve. For more instructions on getting course materials via Ares, see <http://cms.uflib.ufl.edu/accesssupport/howtostudents>. If you have technical difficulties with downloading files, email the academic assistant at tgreene740@ufl.edu before contacting the instructor or other course staff.

VPN: Important instructions for getting to the reading materials linked in the course

Many of the links to the course readings are journal articles, books and other items held by the UF Libraries. To get to those materials you must first log into a secure connection called a VPN, which is short for virtual private network. Once you are logged into the UF VPN, go back into the course and click on the reading links. UF VPN installation instructions: <https://it.ufl.edu/ict/documentation/network-infrastructure/vpn/>. For help, contact the UF Help Desk at (352) 392-4357.

Borrowing from the UF Libraries: Distance learners can borrow materials from the UF collection. They can also borrow from non-UF libraries using Interlibrary Loan (ILL). See the main UF Libraries site for distance learners at <http://guides.uflib.ufl.edu/distancelearners>.

Opinion disclaimer: Please note that sometimes professionals who appear in videos or authors of assigned readings may offer their opinions, perhaps even controversial ones. We wish to encourage open-minded thinking, evaluation, and critiquing in this course and so we also have web-posts where you may voice your opinions. However, it is important to recognize that the opinions expressed by others do not necessarily reflect those of the course instructors, teaching assistants, the Department of Psychiatry, the UF College of Medicine, or the University of Florida.

Class demeanor: All students are expected to be courteous to each other and to instructors and course assistants in all their communications, including discussion posts. Students should not upload or duplicate copyrighted materials on online class discussion boards without express permission from the copyright holder.

Using, Citing, and Formatting References

As you go through the course, you will consult with many different types of sources to obtain supporting data or information for points or arguments you make in discussions, essays and other assignments. You are required to cite your sources when you do the following (American Psychological Association [APA], 2009):

1. Refer to facts or quantitative data
2. Paraphrase another author's view point, idea, or theory
3. Quote an author directly

Your sources may include your online lecture notes from within Canvas, academic journals, print or online newspapers, magazines, books, videos, apps, blogs, podcasts, online discussion forums such as Reddit's AMA, or personal communication with an expert or other person. When citing references, in each case you are required to do six things:

1. Include the source of the information you are presenting
2. Cite the source within body of your discussion, essay or other text (this is known as in-text citation)
3. Paraphrase where necessary (see note on paraphrasing below)
4. Put language taken word-for-word from another source in quotation marks or block quotes
5. List your references at the bottom of your discussion, essay or other text
6. Format the references (both the in-text citation and the reference list) according to the required style convention.

There are several different style conventions (<https://owl.english.purdue.edu/owl/resource/585/2/>), including Chicago Style, often used in the humanities; Modern Language Association (MLA), used most commonly in the liberal arts and humanities; American Psychological Association (APA), used most commonly in social sciences; and others. In this course we will use the latest edition of American Psychological Association (APA) Style. To properly cite and format a reference, find as many details about the source as possible and carefully consider the following (Paiz et al., 2015):

In-text citation: Sources must be cited within the body of the text for any information or data presented in support of arguments or examples given. In-text citations go at the end of a sentence. They generally include the author's last name, followed by a comma, and the year of publication, all enclosed in parentheses, e.g. (Goldman, 2012), but there is some variation depending on the type of source and the number of authors.

Paraphrasing: If you are referencing ideas or information from another work and you feel the need to cite or quote the author in each and every line of your body of text, stop! Instead, you should paraphrase the work and include an in-text citation the first time the work is mentioned. Paraphrasing means synthesizing an author's original statements and then saying them in your own words (Purdue Online Writing Lab [OWL], 2014). Visit the Purdue OWL (<https://owl.english.purdue.edu/owl/resource/619/1/>) for tips on effective paraphrasing.

Quoting: If you do have the need to take some language word-for-word from another source, put it in quotation marks or block quotes.

Reference list: This should be ordered alphabetically by the last name of the first person listed on the paper or other source material (APA, 2009).

Formatting: For instructions and detailed examples of how to format in-text citations and reference lists for a variety of source types, consult the References Style Guide provided in Module 1, the Publication Manual of the American Psychological Association excerpts in Course Reserves, and/or the Purdue OWL APA style guide (<https://owl.english.purdue.edu/owl/resource/560/1/>). You may also contact the UF reference librarian for assistance (see the library resources section in your course syllabus). For additional help you may also create an account with a reference management system such as [EndNote](#). Note that if you put nonsense into a reference management program you will get nonsense out ... you must enter the information the way the program requires or your reference list will not be formatted properly or contain the needed information.

Academic Integrity: Online classes are subject to the same requirements of academic honesty as all on-campus classes. Please review and be familiar with the Student Conduct Code and Student Honor Code, which can be found at <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>. UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Student Honor Code specifies a number of behaviors that violate the code, and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor or course coordinator.

Plagiarism: Plagiarism is presenting another person's work as your own. Cheating and plagiarizing are against the University of Florida Student Conduct Code. Submissions in this course may be checked via Turnitin (<http://www.turnitin.com>), a service that compares documents with each other as well as with pages on the Internet and with other assignments previously submitted by other students. If portions of your document were directly copied and pasted from another student’s assignment (past or present) or from the Internet, that constitutes plagiarism. Cases of plagiarism will be investigated as set out by the [University of Florida Student Conduct Code](#). Students in this course caught cheating or plagiarizing, will be immediately given a failing grade, and may be brought before the UF Honor Court. From your citations and references, the reader of your paper should be able to tell the source of all your outside information. It may be acceptable to place a few comments in quotes with a citation, but it is never acceptable to copy and paste a long string of text from a source, even if it is cited and even if you change a few words. Anything from another source that is not in quotations must be paraphrased. Also, please note that UF policies require that you create original work for each course. Thus, students are not permitted to submit papers they prepared previously outside of this class, such as for high school or other UF courses.

Make-up policy: Since students are informed of topic areas and deadlines at the beginning of the semester, it is difficult for us to accept late assignments. As previously mentioned, by waiting until the last minute to begin working you may run the risk of computer problems. Inaccessible websites or

computer problems are not acceptable excuses for late work. For this reason, we strongly suggest that you work on all assignments and quizzes at least 1-2 days ahead of time. If you believe you have a legitimate reason for missing work, you may request an extension from the instructor before the deadline passes. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. View the UF policies regarding medical excuse from classes at <http://shcc.ufl.edu/forms-records/excuse-notes/>.

Extra Credit: There may be opportunities throughout the semester to earn extra credit. Attempting an extra credit assignment does not guarantee that you will earn a full bonus. You must complete the tasks thoroughly and exceptionally.

GatorEvals UF Faculty Evaluation: Your anonymous feedback is very important, as we use it to improve the course. Faculty evaluations are conducted online ... Simply click on the GatorEvals tool on the left-hand side of the page, then log in using your Gatorlink credentials. Evaluations are typically open during the last two or three weeks of the semester. Students will be told the specific times when evaluations are open. You may also go directly to the evaluations website at <https://ufl.bluera.com/ufl/> Summary results showing how the class anonymously evaluates an instructor are available if you go to the [GatorEvals site](#) and click on "Public Results."

Course Survey: In addition to the faculty evaluation above, students may be asked to complete a course survey. Please see the related announcements, if any, within the course.