

MOVEMENT DISORDERS

APK 6145 ~ 3 CREDITS ~ SPRING 2020

INSTRUCTORS:

Professor David E. Vaillancourt

Office: FLG 170 I or FLG 100

Office Phone: 352-294-1770

Email: vcourt@ufl.edu

Preferred Method of Contact: email

Professor Evangelos A. Christou

Office: FLG 132 E

Office Phone: 352-294-1719

Email: eachristou@ufl.edu

Preferred Method of Contact: email

OFFICE HOURS:

By appointment

MEETING TIME/LOCATION: Tuesday, Period 2-4 (8–11 am), FLG 100 conference

COURSE DESCRIPTION: The course covers the sensory and motor systems of the nervous system responsible for regulating movement in movement disorders. We cover movement disorders including Parkinson's disease, tics, Huntington's disease, dystonia, tremor, spinal cord injury, spasticity, cerebellar disorders, and speech and language disorders.

PREREQUISITE KNOWLEDGE AND SKILLS: None

REQUIRED AND RECOMMENDED MATERIALS: None

COURSE FORMAT: The typical structure of the class, which meets on Tuesdays for three hours, is the following: 1st hour - using Zoom, students will attend the weekly clinical meetings at the Fixel Institute to experience first-hand a clinical perspective of movement disorders; 2nd hour - lecture on the topic of the week; 3rd hour – relevant paper presentation.

COURSE LEARNING OBJECTIVES:

Upon completion of this course, the student will be able to:

1. Knowledge: a) Discuss, explain, and defend subject matter relevant to movement disorders. b) Understand the prevalence, pathophysiology, motor deficits, cognitive deficits, and treatments of each disorder. c) Understand the most up to date research studies from major journals about each disorder.
2. Skills: a) Understand and use the clinical database for the Parkinson's Progressive Marker Initiative. b) Observe and participate with practicing physical therapists, neurologists, neurosurgeons, and occupational therapists who treat and care for patients with movement disorders.
3. Professionalism: Present and explain vital, relevant concepts in movement disorders in a professional manner

COURSE AND UNIVERSITY POLICIES:

ATTENDANCE POLICY: Make every effort to attend all lectures. Attendance is taken for every class period and can affect your grades directly.

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

PERSONAL CONDUCT POLICY:

Technology: The use of cell phones* (and the like) is strictly prohibited during lectures and exams. Any cell phone or other electronic device used during an exam will be considered a violation of the student honor code (i.e., cheating) and will result in stiff penalties. Laptop computers are welcome in class as long as you are using it for class-related work. Surfing the web, checking your email, making Facebook posts, or anything of that nature is strictly prohibited. Violation of this policy will result in point deductions at the discretion of the instructor.

Communication: You are responsible for checking announcements and course postings on E LEARNING. This is how your course instructor will communicate with you. All course grades will be posted on E LEARNING. Any discrepancies should be pointed out to the instructor on or before the last day of finals week.

Academic Honesty: 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."

Any student found violating this honor code will receive a zero for that exam or assignment and may be assigned other educational sanctions at the instructor's discretion.

<https://sccr.dso.ufl.edu/process/student-conduct-code/>

EXAM MAKE-UP POLICY: Unexcused absences on quiz/exam days will result in a zero on the quiz/exam. If you are ill or have an emergency that prevents you from taking the quiz at the scheduled time, it is your responsibility to contact the instructor as soon as possible. Documentation of the illness or emergency will be required.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

COURSE EVALUATIONS: Students in this class are participating in GatorEvals. This evaluation system is designed to be more informative to instructors so that teaching effectiveness is enhanced and to be more seamlessly linked to UF's CANVAS learning management system. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Thank you for serving as a partner in this important effort.

GETTING HELP:

Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 392-1161
- University Police Department, 392-1111 (or 9-1-1 for emergencies)
<http://www.police.ufl.edu/>

Academic Resources

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>

- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

GRADING:

Course Examinations and Grading	
Activity/Assignment	Points
1. Attendance	30
2. Class Project	30
3. Article Presentation	20
4. In-class Discussion	20
TOTAL POINTS	100

Attendance (30%):

Required. Every unexcused absence will result in 5 point deduction.

Class Project (30%)

We reserved the first period of class for week 3 to explain in detail the requirements for the class project. Briefly, you will use data available from the clinical database for the Parkinson's Progressive Marker Initiative. You will come up with a research question and a hypothesis and test this hypothesis driven question with the available database data. The findings will be presented orally during the last two weeks along with the written paper.

Article Presentation (20%)

This presentation will be based on a research article that we will provide for you (see table at end of the syllabus). At the first class you will sign-up to a presentation slot.

The length of the presentation should be 15 minutes and should be in the format of a powerpoint presentation. The 15 minute limit is strict and you will be cut short if you go over your time. Our suggestion, therefore, is to practice the presentation ahead of time. Conciseness, clarity, and information delivery will be part of your grade. There will be a 2-5 minutes question-answer session after each presentation. This presentation will worth 20% of your course grade.

Each member will grade the other group members for participation in the presentation. The average score from your classmates will be multiplied with my grade. For example, if I gave you 100% for your presentation and your classmates scored your presentation at 50%, your individual score will be 10 (10/20 points).

GRADING SCALE: The total points earned from exams, quizzes, writing assignment, attendance, and presentation will be summed. There is no curve for this course. I reserve the right to round up grades for students who show exceptional participation in class. However, under most circumstances GRADES WILL NOT BE ROUNDED UP!!! If you earn a 79.94%, you will receive a C+, not a B. The following grading scale will be used to assess students in this course. For more detailed information on current UF grading policies, please see the undergraduate catalog web page:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies>

Any requests for additional extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.

Letter Grade	Points Needed to Earn Each Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	≥ 93	90.00-100%	4.0
A-	90-93	90.00-100%	3.67
B+	87.00-89.99	87.00-89.99%	3.33
B	80.00-86.99	80.00-86.99%	3.0
C+	77.00-79.99	77.00-79.99%	2.33
C	70.00-76.99	70.00-76.99%	2.0
D+	67.00-69.99	67.00-69.99%	1.33
D	60.00-66.99	60.00-66.99%	1.0
E	0-59.99	0-59.99%	0

WEEKLY COURSE SCHEDULE:

This approximates what the semester will consist of. This outline is subject to change at any point during the semester.

Week/Date	Material
Week 1 <i>Jan 7</i>	Syllabus explanation <u>Lecture:</u> Brain Anatomy (David)
Week 2 <i>Jan 14</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Lecture:</u> Methods for PET, MRI and fMRI, DTI, TMS, EEG, EMG (Evangelos) Assignment of papers 1-6 for Week 3.
Week 3 <i>Jan 21</i>	Project explanation <u>Presentations:</u> Papers 1-6 Assignment of papers 7-9 for Week 4
Week 4 <i>Jan 28</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Lecture:</u> Diagnosis of Parkinson's Disease (David) <u>Presentations:</u> Papers 7-9 Assignment of papers 10 and 11 for Week 5
Week 5 <i>Feb 4</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Lecture:</u> Pathophysiology of Parkinson's Disease (David) <u>Presentations:</u> Papers 10 and 11 Assignment of papers 12 and 13 for Week 6
Week 6 <i>Feb 11</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Lecture:</u> Treatments for Parkinson's Disease (Evangelos) <u>Presentations:</u> Papers 12 and 13 Assignment of papers 14-17 for Week 8
Week 7 <i>Feb 18</i>	Clinical: Zoom with Fixel Institute (8-9 am) Guest Speaker: Dr. Katie Moore, RLS and Sleep Disorders
Week 8 <i>Feb 25</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Presentations:</u> Papers 14-17 Assignment of papers 18 for Week 10
Week 9 <i>March 10</i>	Clinical: Zoom with Fixel Institute (8-9 am) Guest Speaker: Dr. Chris Hess, Myoclonus Disorder
Week 10 <i>March 17</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Lecture:</u> Huntington's Disease (Evangelos) <u>Presentation:</u> Paper 18 Assignment of paper 19 for Week 11
Week 11 <i>March 24</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Lecture:</u> Tremor (Evangelos) (Cerebellar Tremor, Essential Tremor, Psychogenic Tremor Only)

	<u>Presentations:</u> Paper 19
Week 12 <i>March 31</i>	Guest Speaker: Dr. Chris Hess, Tardive Syndromes
Week 13 <i>April 7</i>	Clinical: Zoom with Fixel Institute (8-9 am) Guest Speaker: Dr. Josh Wong, DBS current and state of the art
Week 14 <i>April 14</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Project Presentations</u>
Week 15 <i>April 21</i>	Clinical: Zoom with Fixel Institute (8-9 am) <u>Project Presentations</u>

Papers for presentation

Week/Date	Papers
Week 3 Jan 21	1. Park and Friston, 2013. Structural and functional brain networks: From connections to cognition. 2. Ogawa et al. 1992. Intrinsic signal changes accompanying sensory stimulation: Functional brain mapping with MRI. 3. Biswall et al. 2010. Toward discovery science of human brain function. 4. Spraker et al. 2007. Role of individual basal ganglia nuclei in force amplitude generation. 5. Portnow et al. 2013. The history of cerebral PET scanning. 6. Rothwell et al. 1991. Stimulation of the human motor cortex through the scalp.
Week 4 Jan 28	7. Vaillancourt et al. 2009. High-resolution diffusion tensor imaging in the substantia nigra of de novo Parkinson's disease. 8. Castellanos et al. 2015. Automated neuromelanin imaging as a diagnostic biomarker for PD. 9. Du et al. 2011. Combined R2 and diffusion tensor imaging changes in the substantia nigra in PD.
Week 5 Feb 4	10. Bergman et al. 1990. Reversal of experimental parkinsonism by lesions of the STN. 11. Kordower et al. 2013. Disease duration and the integrity of the nigrostriatal system in PD.
Week 6 Feb 11	12. Deuschl et al. 2006. A randomized trial of DBS for PD. 13. Olanow et al. 2009. A double-blind, delayed-start trial of rasagiline in PD.
Week 8 Feb 25	14. Corcos et al. 2013. A two-year randomized controlled trial of progressive resistance exercise for PD. 15. Li et al. 2012. Tai Chi and postural stability in patients with PD. 16. Rascol et al. 2000. A five-year study of the incidence of dyskinesia in patients with early PD who were treated with ropinirole or levodopa. 17. Herz et al. 2014. The acute brain response to levodopa heralds dyskinesias in PD.
Week 10 March 17	18. Rosas et al. 2008. Cerebral cortex and the clinical expression of Huntington's disease: complexity and heterogeneity.
Week 11 March 24	19. Bastia et al. 2018. Consensus statement on the classification of tremors.

SUCCESS AND STUDY TIPS:

Successful students in my class typically do the following:

1. Do not miss classes throughout the semester. A lot of the quiz and test material are given in class. A significant amount of information is not on the slides.
2. Take the presentation very seriously and start preparing ahead of time. The presentation requires anywhere from 10-15 hours of outside class work.
3. Take the class project very seriously and start preparing ahead of time. The group presentation and associated paper for the class project requires anywhere from 20-30 hours of outside class work.