

 <b>FLORIDA ATLANTIC UNIVERSITY</b>	<b>NEW COURSE PROPOSAL</b> <b>Graduate Programs</b>		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner _____ Catalog _____
	<b>Department Biomedical Science</b> <b>College Medicine</b> <i>(To obtain a course number, contact <a href="mailto:erudolph@fau.edu">erudolph@fau.edu</a>)</i>		
<b>Prefix</b> GMS  <b>Number</b> 6708	<i>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</i> <b>Lab Code</b>	<b>Type of Course</b> Lecture	<b>Course Title</b> Principles of NeuroImmunology
<b>Credits</b> <i>(Review Provost Memorandum)</i> 3	<b>Grading</b> <i>(Select One Option)</i>  <b>Regular</b> X  <b>Sat/UnSat</b>	<b>Course Description</b> <i>(Syllabus must be attached; see <a href="#">Guidelines</a>)</i> This course is designed to provide the fundamental knowledge and essential concepts in the emerging field of psychoneuroimmunology (PNI). PNI is an interdisciplinary science that studies the connection and influence between the central nervous system, the immune system, and behavior. Understanding the interplay between these systems leads to discoveries of novel mechanisms of physiology and pathology, developments of novel therapies for the treatments of inflammatory diseases, neurodegenerative and affective disorders. The course seeks to provide a basic understanding of the neuroscience, immunology, physiology and behavioral science underlying PNI interactions and to use PNI research as a platform to present students with modern strategies for understanding molecular mechanisms involved in the immunomodulation of neural functions and neuromodulation of immune activities.	
<b>Effective Date</b> <i>(TERM &amp; YEAR)</i> Spring 2021	<b>Prerequisites</b> NONE		
<b>Prerequisites, Corequisites and Registration Controls are enforced for all sections of course.</b>		<b>Academic Service Learning (ASL) course</b> Academic Service Learning statement must be indicated in syllabus and approval attached to this form.	
		<b>Corequisites</b> NONE	<b>Registration Controls</b> <i>(For example, Major, College, Level)</i>  Instructor Permission Required
<b>Minimum qualifications needed to teach course:</b> Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)		<b>List textbook information in syllabus or here</b>	
<b>Faculty Contact/Email/Phone</b> Dr. Ning Quan <a href="mailto:nquan@health.fau.edu">nquan@health.fau.edu</a> (561) 799-8552		<b>List/Attach comments from departments affected by new course</b>	

<b>Approved by</b> Department Chair _____ <i>Jant D Bobshaw</i> College Curriculum Chair _____ <i>Marc Kantorow</i> College Dean _____ <i>Phillip M. Brubaker, MD</i> UGPC Chair _____ <i>Christopher Beetle</i> UGC Chair _____ <i>Paul R. Peisor (Nov 18, 2020 08:43 EST)</i> Graduate College Dean _____ <i>Robert W. Smith</i> UFS President _____ Provost _____	<b>Date</b> 10/7/20 _____ 10/7/2020 _____ 10/12/2020 _____ Nov 17, 2020 _____ Nov 18, 2020 _____ Nov 18, 2020 _____ _____ _____
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Email this form and syllabus to [UGPC@fau.edu](mailto:UGPC@fau.edu) 10 days before the UGPC meeting.

## Principles of Neuroimmunology

**Course Director:** Ning Quan, Ph.D.  
MC17 Room 209, Jupiter Campus  
[nquan@health.fau.edu](mailto:nquan@health.fau.edu)

Number Credit Hours: 3

Course Requisites: Instructor Permission

Course hours: Wednesdays 3-5:50 PM

Room/Time: TBD

Office hours: request an appointment from Monday-Friday via email

**Text Book:** Psychoneuroimmunology Fourth Edition, Academic Press

**Editor:** Robert Ader

### **Course Catalog Description:**

This course is designed to provide the fundamental knowledge and essential concepts in the emerging field of psychoneuroimmunology (PNI). PNI is an interdisciplinary science that studies the connection and influence between the central nervous system, the immune system, and behavior. Understanding the interplay between these systems leads to discoveries of novel mechanisms of physiology and pathology, developments of novel therapies for the treatments of inflammatory diseases, neurodegenerative and affective disorders. The course seeks to provide a basic understanding of the neuroscience, immunology, physiology and behavioral science underlying PNI interactions and to use PNI research as a platform to present students with modern strategies for understanding molecular mechanisms involved in the immunomodulation of neural functions and neuromodulation of immune activities.

### **Additional Information on the Course:**

Students will be expected to learn course material through presentations made in the class by instructors and by students, in-class discussions, and out-of-class reading and research.

Exams will be based on the content presented in the class. Students will be evaluated on mid-term (25%), final (25%) exams and their presentations (25%), and class participation (25%).

**Course Objectives:** To understand the mechanistic principles of PNI including: 1) shared molecular mechanisms and factors in the immune and nervous system, 2) pathways of neuroimmune communication, 3) contribution of neuroimmune activity to the pathogenesis of diseases, 4) current methods in PNI research, and 5) application of PNI principles to medical practice.

Course Schedule:

### **January**

Wednesday 13: Intro to the course

Wednesday 20 Afferent pathways of neuroimmune communication

Wednesday 27 Efferent pathways of neuroimmune communication

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5353 Parkside Drive  
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### **February**

Wednesday 3: Cellular component of neuroinflammation (microglia)

Wednesday 10: Cellular component of neuroinflammation (astrocyte)

Wednesday 17: Cellular component of neuroinflammation (endothelial cell)

Wednesday 24: Regulation of innate immunity in the CNS

### **March**

Wednesday 3: Exam 1

Wednesday 10: Regulation of adaptive immunity in the CNS

Wednesday 17: Humoral immunity and CNS function

Wednesday 24: Cellular immunity and CNS function

Wednesday 31: Excitotoxicity and neuroinflammation

### **April**

Wednesday 7: Neuroinflammation and pain

Wednesday 14: Neuroinflammation in autism and schizophrenia

Wednesday 21: Neuroimmune influence on Parkinson's disease

Wednesday 28: Neuroimmune influence on Major depression

### **May**

Wednesday 5: Final exam

### **Course Grading Scale:**

A	100 - 94
A <sup>-</sup>	93 - 91
B <sup>+</sup>	90 - 87

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B	86 – 84
B <sup>-</sup>	83 – 81
C <sup>+</sup>	80 – 77
C	76 – 74
C <sup>-</sup>	73 – 70
D	69 – 60
F	<60

**Policy on makeup exams:** Make up exams will not be given unless a written and verifiable reason is approved either prior to the exam or within 48 hours of the exam date. Unexcused absence from an exam or quiz will result in a zero score being recorded.

**Classroom Etiquette Policy:** The use of cell phones or other communication devices for talking/texting is prohibited during class. Phones need to be turned off before class begins. Students are permitted to use computers during class for note-taking and other class-related work only.

**Attendance Policy Statement:** *Students are expected to attend all their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.*

*Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.*

**Disability policy statement:** *In compliance with the Americans with Disabilities Amendments Act (ADAAA), students who require reasonable accommodation due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, SU 131 (561-297-3880); in Davie, LA 131 (954-236-1222); in Jupiter and all Northern Campuses, SR 111F (561-799-8585). Disability services are available for students on all campuses. For more information, please visit SAS website at [www.fau.edu/sas/](http://www.fau.edu/sas/).*

**Code of Academic Integrity policy statement:** *Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the university mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 and the WHC Academic Honor Code at <http://www.fau.edu/honors/academics/honor-code.php>.*

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**Counseling and Psychological Services (CAPS) Center**

*“Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU’s Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>”*