



## NEUROSCIENCE PROGRAM COURSE LISTING

(see <http://www.usuhs.mil/graded/coursedescriptions.html> for descriptions of each course)

### NEUROSCIENCE PROGRAM REQUIRED COURSES:

<b>NSO506</b>	Introduction to Neuroscience; 5 QH, grade, Fall Quarter
<b>NSO902</b>	Introduction to Research in Neuroscience; 1 QH, Winter Quarter
<b>NSO802</b>	Advanced Topics and Techniques in Neuroscience; 3 QH, grade, Spring Quarter (alternate years)
<b>NSO507</b>	Neurobiology of Disease; 4 QH, grade, Spring Quarter (alternate years)
<b>NSO510</b>	Introduction to Developmental Neurobiology 2 QH, grade, Spring Quarter
<b>ATO1012</b>	Neuroanatomy/Neurophysiology (part of MS-I Course); 11 QH, grade, Winter/Spring Quarter
<b>PYO514</b>	Membrane and Endocrine Physiology (part of MS-I Course); 2 QH, grade (Fall and Spring Quarter)
<b>PHO509</b>	Principles of Pharmacology (part of MS-1 course); 1 QH, grade, Winter Quarter
<b>PHO510</b>	Neuropharmacology (part of MS-II Course, Med. Pharmacol); 3 QH, grade, Jan-Mar.
<b>IDO502</b>	Experimental Statistics: 3 QH, grade, Fall Quarter
<b>NSO601</b>	Neuroscience Seminar; 1 QH, credit, seminar series, taken each Fall, Winter & Spring Quarter
<b>NSO701</b>	Neuroscience Tutorial; 1 QH, grade, Spring or Winter Quarter; student presented seminars, re-taken each year
<b>NSO901</b>	Neuroscience Research; variable credit, covers rotations and dissertation research
<b>IDO704</b>	Ethics and responsible conduct of research, 1 QH, credit, Fall Quarter (required by graduate school)

### HIGHLY RECOMMENDED ELECTIVE COURSES:

<b>NSO520</b>	Molecular Basis of Nervous System Function; 1 QH, Fall Quarter
<b>NSO530</b>	Interactions Between Behavior, Environment, and Neurobiology; 2 QH, Fall Quarter
<b>MCB509</b>	Cell Biology; 6 QH, Spring Quarter
<b>BCO520/521</b>	Advanced/Graduate Biochemistry I & II; 6 QH grade, Fall & Winter Quarters

### OTHER TYPICAL ELECTIVE COURSES:

<b>MCB520</b>	Current Concepts in Neuroendocrinology and Endocrinology; 3 QH, Fall Quarter
<b>MCB501</b>	Introduction to Computers; 3 QH, Fall Quarter
<b>IDO515</b>	Grant Writing for Graduate Students; 2 QH, Summer Quarter
<b>MCO504</b>	Fundamentals of Immunology; 2 QH, Fall Quarter

Additional courses are available through diverse departments of the USUHS Graduate and Medical School (see <http://www.usuhs.mil/graded/coursedescriptions.html> for full list of available courses at USUHS).

Additional course credits can also be applied at USUHS from courses taken through the Foundation for Advanced Education in the Sciences Graduate School program that is associated with the National Institutes of Health (<http://www.faes.org/>)

(48 credit hours in graded courses are required for advancement to candidacy at the end of the second year)

### *Typical/Suggested Schedule, Year 1:*

<b>Fall Quarter:</b>	<b>Q Hrs</b>	<b>Winter Quarter:</b>	<b>Q. Hrs.</b>
Introduction to Neuroscience	5	Neuroanatomy/Neurophysiology (continues in Spring)	11
Ethics and Responsible Conduct in Research	1	Neuroscience Research Rotation (II)	Variable (>1)
Experimental Statistics	2	Neuroscience Seminar	1
Membrane & Endocrine Physiol. (register for 2 QH in fall: attend 1 QH in fall, 1 QH in spring )			3
Intro to Research in Neuroscience	1		
Neuroscience Seminar	1		
Neuroscience Research rotation (I)	variable (>1)		
<b>Spring Quarter:</b>		<b>Summer Quarter:</b>	
Adv. Topics & Techniques in NES	3	Neuroscience Thesis Research	12
Developmental Neurobiology (Alternate years with Neurobiology of Disease)	2 (3)		
Membrane & Endocrine Physiol. (continued from fall, attend 1 QH in spring)	0		
Neuroscience Seminar	1		

Neuroscience Tutorial (student seminar)	1
Neuroscience Research rotation (III)	variable (>1)

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**Students are to choose a thesis lab after the third rotation.**

### ***Typical/Suggested Schedule, Year 2:***

<b>Fall Quarter:</b>	<b>Q Hrs</b>	<b>Winter Quarter:</b>	<b>Q. Hrs.</b>
Neuroscience seminar	1	Principles of Pharmacology	1
Advanced Biochemistry I	3	Neuropharmacology	4
Neuroscience Thesis Research	variable (>1)	Advanced Biochemistry II	3
Molecular Basis of Nervous System Function	1	Neuroscience tutorial (student seminar)	1
Interactions Environment, Behavior, Neurobio	2	Neuroscience Thesis Research	variable (>1)
Elective courses:		Neuroscience seminar	1
Fundamentals of Immunology	2	Elective courses:	
Introduction to Computers	2		
Neuroendocrine/Endocrine	3		
<b>Spring Quarter:</b>		<b>Summer Quarter:</b>	
Neurobiology of Disease (Alt years Developmental Neurobiology)	3 (2)	Neuroscience Thesis Research	12
Cell Biology	6	Elective courses:	
Neuroscience seminar	1	Grant Writing for Graduate Students	2
Neuroscience Thesis Research	variable (>1)		

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**The qualifying examination (written and oral components) are to be taken in the Spring/Summer of the second year.**

**The thesis advisory committee is to be assembled by the end of the second year**

### ***Typical/Suggested Schedule, Year 3 and beyond:***

<b>Fall Quarter:</b>	<b>Q Hrs</b>	<b>Winter Quarter:</b>	<b>Q. Hrs.</b>
Neuroscience Thesis Research	11	Neuroscience Thesis Research	11
Neuroscience Seminar	1	Neuroscience Seminar	1

<b>Spring Quarter:</b>		<b>Summer Quarter:</b>	
Neuroscience Thesis Research	10	Neuroscience Research	12
Neuroscience tutorial (student seminar)	1		
Neuroscience Seminar	1		

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**Students defend a proposal of their dissertation research project to their Thesis Advisory Committee by end of Year 3.**

**During subsequent years, students meet with their Thesis Advisory Committee every 6 months.**

**Students have a maximum of 7 years to complete the doctoral degree in any USUHS graduate program.**