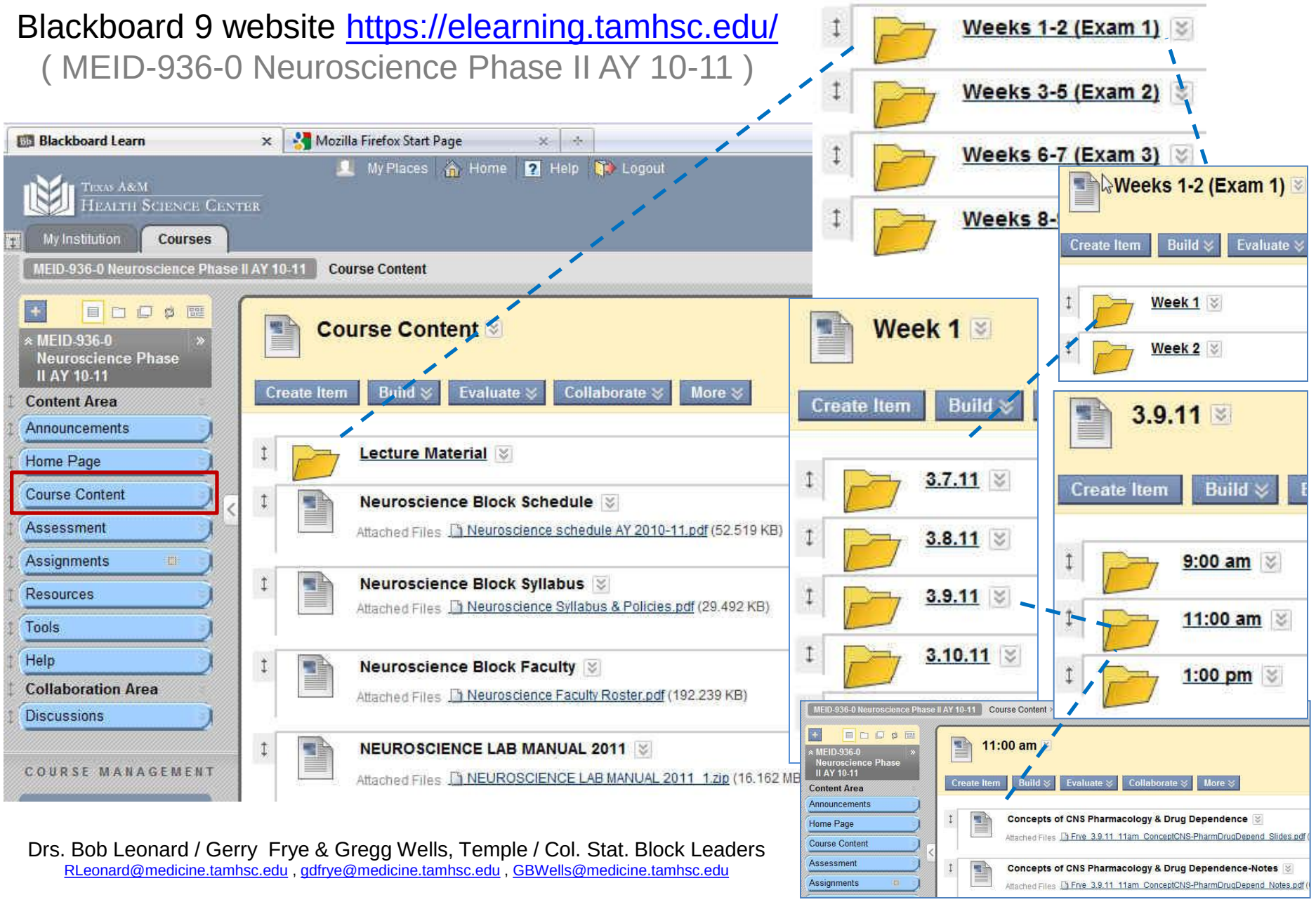
Neuroscience Block (MEID 936) 2010-2011

Blackboard 9 website https://elearning.tamhsc.edu/

(MEID-936-0 Neuroscience Phase II AY 10-11)



Drs. Bob Leonard / Gerry Frye & Gregg Wells, Temple / Col. Stat. Block Leaders

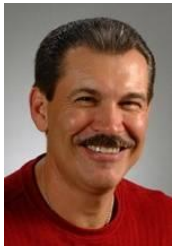
RLeonard@medicine.tamhsc.edu , gdfrye@medicine.tamhsc.edu , GBWells@medicine.tamhsc.edu































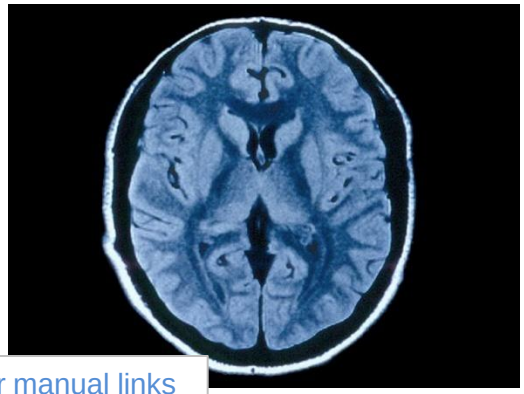









Neuroscience Lab Manual & Slides



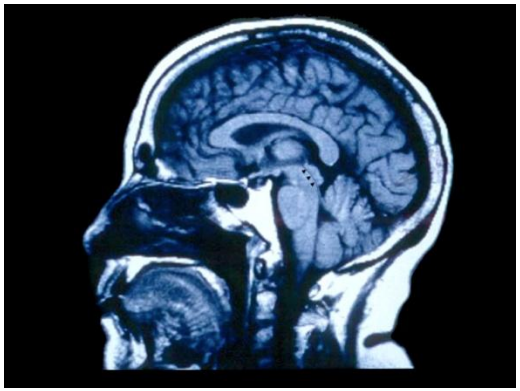


Image files for manual links

Home Page
Course Content
Assessment
Assignments
Resources
Tools
Help
Collaboration Area
Discussions

COURSE MANAGEMENT

Control Panel
Course Tools
Course Links
Evaluation
Users and Groups

Lecture Material

Neuroscience Block Schedule
Attached Files: Neuroscience schedule AY 2010-11.pdf (52.519 KB)

Neuroscience Block Syllabus
Attached Files: Neuroscience Syllabus & Policies.pdf (29.492

Neuroscience Block Faculty
Attached Files: Neuroscience Faculty Roster.pdf (192.239 KB)

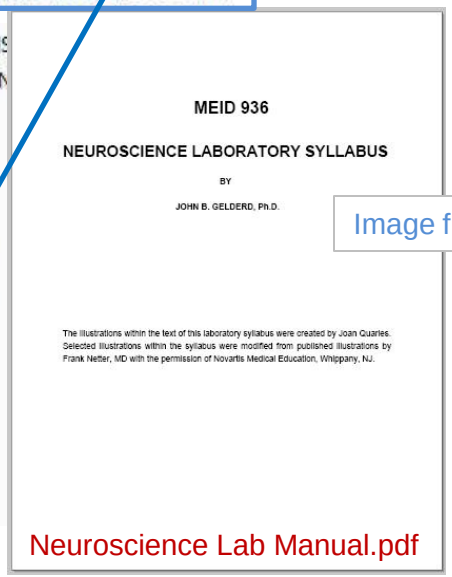
NEUROSCIENCE LAB MANUAL 2011
Attached Files: NEUROSCIENCE LAB MANUAL 2011_1.zip (16.162 MB)
This is a zipped file containing both the Neuroscience Slide Set and Ne
unzip/extract its contents and keep the Slide Set and Manual in the sar

Neuroscience Lab Manual Supplement
Attached Files: Neuroscience Lab Manual Supplement.pdf (3.693 MB)

Download and unzip

Desktop
Libraries
Computer
(C:) Local Disk
(F:) SimpleDrive
(G:) Removable Disk
NEUROSCIENCE LAB MANUAL 2011_1
NEUROSCIENCE LAB MANUAL 2011
NEURO SLIDE SET
NEUROSCIENCE LAB MANUAL 2011_1
(H:) Toshiba Portable Hard Drive

48-HORIZ-OPTIC RADIATIONS
49-HORIZ-FORAMEN OF MO
50-HORIZ-MIDBRAIN MRI
51-HORIZ T2-X2 MRI
52-MIDSAG-CORD MRI
53-MIDSAG CORD T2 MRI
54-MIDSAG CBL LESION MRI
55-MIDSAG CBL LESION MRI
56-MRI X9
57-MRI X9
58-MRI C SPINE T2 AX
59-MRI T2 caudal medulla
60-MRI T2 Rostral Medulla
61-MRI Ax CN VII & VIII


MEID 936

NEUROSCIENCE LABORATORY SYLLABUS

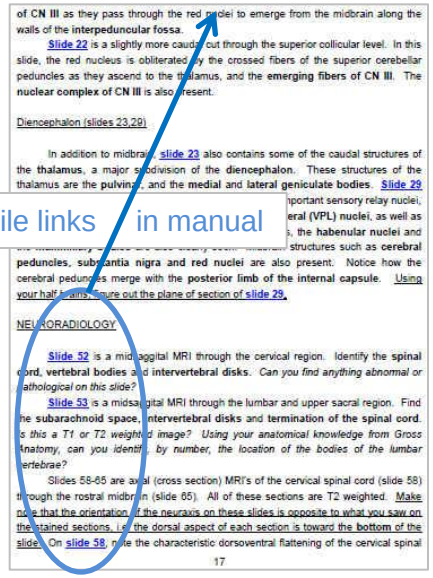
BY

JOHN B. GELDERD, Ph.D.

The illustrations within the text of this laboratory syllabus were created by Joan Guarles. Selected illustrations within the syllabus were modified from published illustrations by Frank Netter, MD with the permission of Novartis Medical Education, Whippany, NJ.

Neuroscience Lab Manual.pdf

Image file links in manual


of CN III as they pass through the red nuclei to emerge from the midbrain along the walls of the **interpeduncular fossa**.

Slide 22 is a slightly more caudal cut through the superior collicular level. In this slide, the red nucleus is obliterated by the crossed fibers of the superior cerebellar peduncles as they ascend to the thalamus, and the **emerging fibers of CN III**. The **nuclear complex of CN III** is also present.

Diencephalon (slides 23,29)

In addition to midbrain, slide 23 also contains some of the caudal structures of the **thalamus**, a major subdivision of the **diencephalon**. These structures of the thalamus are the **pulvinar**, and the **medial** and **lateral geniculate bodies**. Slide 29

pedunculi, substantia nigra and red nuclei are also present. Notice how the cerebral peduncles merge with the **posterior limb of the internal capsule**. Using your half brains, figure out the plane of section of slide 29.

NEURORADIOLOGY

Slide 52 is a midsagittal MRI through the cervical region. Identify the **spinal cord, vertebral bodies** and **intervertebral disks**. *Can you find anything abnormal or pathological on this slide?*

Slide 53 is a midsagittal MRI through the lumbar and upper sacral region. Find the **subarachnoid space, intervertebral disks** and **termination of the spinal cord**. *Is this a T1 or T2 weighted image? Using your anatomical knowledge from Gross Anatomy, can you identify, by number, the location of the bodies of the lumbar vertebrae?*

Slides 58-65 are axial (cross section) MRI's of the cervical spinal cord (slide 58) through the rostral midbrain (slide 65). All of these sections are T2 weighted. Make note that the orientation of the neuraxis on these slides is opposite to what you saw on the stained sections, i.e. the dorsal aspect of each section is toward the **bottom** of the slide. On slide 58, note the characteristic dorsoventral flattening of the cervical spinal

17

Neuroscience* is unique** because it focuses on one organ system (brain, spinal cord & peripheral nerves) from ***two clinical perspectives **(e.g., neurological, brain-nerve disorders and psychiatric, mental-mind disorders), . . .**

. . . . ***basic structural features*** of the human central nervous system (CNS) followed by ***structural information specific to CNS functions and mechanisms*** such as those mediating pain, sensation, motor control, coordination, consciousness, cognition and emotion. A ***three dimensional (3D), functional integrated understanding . . . .***

. . . . ***core principles . . . clinical logic and systematic procedures*** for first ***identifying***, ***localizing and evaluating*** the significance of ***lesions in the central and / or peripheral nervous system*** of patients with disorders such as peripheral neuropathy, spinal cord or head injury, stroke, epilepsy, meningitis, Parkinson's or Alzheimer's diseases among others.

Brain pathology caused by ***diverse mechanisms*** such as microbial agents, toxins, trauma, congenital defects, metabolic, immune, circulatory or neurodegenerative processes and tumors . . . .

. . . ***concept of mental health***, its relationship to neuroanatomy . . . the ***substantial impact of mental illness across medical practice*** . . . . ***characteristics of prominent mental illnesses . . .*** depression, schizophrenia, dementia, psychosis, . . .disorders post traumatic stress, anxiety, personality, mood, self-image, violence, substance abuse and suicide . . .

CNS and autonomic nervous system active drugs are introduced in close association with the prominent clinical disorders for which they are prescribed. The goal is to ***integrate*** current ***knowledge of mechanism of action, dose-response and prominent side effects . . .***

GRADING

0%	= Pretest
20%	= Exam I *
23%	= Exam II *
21%	= Exam III *
25%	= Exam IV
3%	= Neuroscience Lab Quizzes
1%	= Neuropathology Laboratory
2%	= Pharmacology Self Study Modules (2)
2%	= Humanities Selective Final Project
2%	= Professionalism
1%	= Evidence Based Medicine Homework
____	
100%	

Letter grades will be based on the scale: A (90-100), B (80-89), C (70-79), or F (69 and below).

A decision of the College of Medicine Grading Committee has mandated that final grades for blocks be rounded down (e.g., an 89.99 will be rounded to an 89, a “B”). However, course examination grades will not be rounded down (or up).

*Practical portion of Exams I, II & III each represent 8% of the final course grade.

Week 1 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 1

HOUR	MONDAY MARCH 7	TUESDAY MARCH 8	WEDNESDAY MARCH 9	THURSDAY MARCH 10	FRIDAY MARCH 11
8		**Pharmacology** Neurotransmitters, Receptors & Drug Actions (Griffith)		**Pathology** Vascular Disorders (Wells)	
9	**Overview** - Phase II Neuroscience (Leonard/Frye)	**Physiology** Basic Neural Mechanisms and Circuitry (Peterson)	**Introduction to Clinical Skills II** Small Groups: Physical - Musculoskeletal & Skin	**Pharmacology** Local Anesthesia & Local Anesthetics (Frye)	**Neurology** Clinical Neurology of Sensory Systems (Clark) **Temple**
10	**Neuroscience** Blood Supply to CNS: Blood Brain Barrier; Meninges (Hubbard) **Temple**	**Neuroscience** Discriminative Touch, Pressure, Vibration & Proprioception from the body (McCord)		**Pharmacology** Therapy for Migraine (Reddy)	**Neuroscience Lab** Meninges and Blood Supply, CSF and ventricles
11	**NEUROSCIENCE PRETEST (ExamSoft)**	**Physiology** Neurotransmission/ Neuromuscular Junction (E. Wilson)	**Pharmacology** Concepts of CNS Pharmacology & Drug Dependence (Frye)	**Neuroscience** Pain & Temperature from the Body; Gate Theory of Pain (Rimer)	
12					
1	**Neuroscience** Ventricles and CSF (Hubbard) **Temple**	**Professionalism** (Ogden / Herring)	**Neuroscience Lab** Introduction to the Macroscopic Anatomy of the Neuroaxis	**Biochem-Genetics** Genetic Disease Impacting the Nervouse System (Dobin) **Temple**	**Biochem-Genetics** Protein Folding Diseases (Bondos)
2	**Neuroscience Lab** Lab Policies Overview - Gross Anatomy of the Brain				**Neuroscience** Sensory Pathways for the Head (Hubbard) **Temple**
3					
4					

No Class

Neuroscience
AY 2010-2011

HOUR	MONDAY MARCH 14	TUESDAY MARCH 15	WEDNESDAY MARCH 16	THURSDAY MARCH 17	FRIDAY MARCH 18
8	SPRING BREAK				
9					
10					
11					
12					
1					
2					
3					
4					

Week 2 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 2

HOUR	MONDAY MARCH 21	TUESDAY MARCH 22	WEDNESDAY MARCH 23	THURSDAY MARCH 24	FRIDAY MARCH 25
8		**Pharmacology** Pain Medications: Theoretical Concepts in Pain Management (Winzer-Serhan)			
9	**Neuroscience** Approach to Solving Neurological Lesion Questions (McCord)	**Pharmacology** Pain Medications: NSAIDs (Winzer-Serhan)	**Introduction to Clinical Skills II** Small Groups: Neurological Exam		**Neuroscience** Introduction to Neuroradiology (McCord)
10	**Neuroscience Lab** Ascending Sensory Pathways	**Neuroscience Lab** Sensory Pathways for the Anterior 2/3 of the Head		**Neuroscience** Corticobulbar Tract - Anatomy & Function (Hubbard) **Temple**	**Pharmacology** Acute Alcohol Toxicity (Frye)
11			**Pharmacology** Pain Medications: Opioids (Winzer-Serhan)	**Physiology** Spinal Reflexes, Muscle Tone (Peterson)	**Pharmacology** Chronic Alcohol Toxicity (Frye)
12					
1	**Remediation for Introduction to Disease Block exams**	**Humanities** Selective Session II-1 (Borchardt / Wick)	**Pharmacology** Pain Management in Clinical Practice (Roberson) **Temple**	**Neuroscience Lab** Pyramidal System	**Introduction to Sterile Technique** Scrub, Glove & Gown *College Station & Temple*
2			**Neuroscience** Corticospinal Tract - Anatomy & Function (McCord)		
3					
4					

Week 3 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 3

HOUR	MONDAY MARCH 28	TUESDAY MARCH 29	WEDNESDAY MARCH 30	THURSDAY MARCH 31	FRIDAY APRIL 1
8	NO CLASS - STUDY TIME	**Neuroscience** Cranial Nerves V & VII (Earnest)	**Introduction to Clinical Skills II** Exam II		
9		**Neuroscience** Cranial Nerves IX, X & XI (Allen)	**Introduction to Clinical Skills II** Small Groups: Practice Day	**Neuroscience** Basal Ganglia - Structure, Function & Movement Disorders (Leonard) **Temple**	**Pathology** Demyelinating Disorders (Leibowitz)
10		**Neuroscience Lab** Cranial Nerves		**Pathology** Degenerative Disorder Pathology (DiPatre) **Temple**	**Pharmcology** Classification of Cholinergics (Zimmer)
11			**Neuroscience** Important Neuroanatomical Syndromes (McCord)	**Pharmacology** Drug Therapy for Neurodegenerative Disorders (Frye)	**Pharmacology** Parasympathomimetics (Zimmer)
12					
1	**NEUROSCIENCE EXAM I** **(Practical Exam covers: 03/07/11-03/25/11)**	**Humanities** Selective Session II-2 (Borchardt / Wick)	**Psychiatry** Introduction to the Neuroanatomy of Psychiatry (Kotria) **Temple**	**Neuroscience Lab** Basal Ganglia	**Introduction to Skills** Suturing College Station & Temple
2	**NEUROSCIENCE EXAM I** **(ExamSoft; covers: 03/07/11-03/25/11)**		**Psychiatry** Interviewing Patients (Antunes) **Temple**		
3					
4					

Week 4 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 4

HOUR	MONDAY APRIL 4	TUESDAY APRIL 5	WEDNESDAY APRIL 6	THURSDAY APRIL 7	FRIDAY APRIL 8
8	**Microbiology** Meningitis & Brain Abscesses (Plemmons) Temple	NO CLASS - STUDY TIME	**Introduction to Clinical Skills II** Physical Exam Practical Evaluation (1/3 of class)		
9	**Microbiology** Encephalitis (V. Wilson)			**Physiology** Physiology of Hearing (Peterson)	**Pharmacology** New Drug Development: Placebo in Medicine; Dietary Supplements (Frye)
10	**Neuroscience** Cerebellum: Anatomy, Pathways & Function (Rimer)			**Physiology** Vestibular System - Anatomy & Physiology of Vestibular Apparatus (Peterson)	**Psychiatry** Alcohol Abuse (Antunes) Temple
11			**Pharmacology** Antimuscarinics (Zimmer)	**Neuroscience** Vestibular System - Central Pathways; Nystagmus (Leonard) Temple	**Psychiatry** Somatoform Disorders (Antunes) Temple
12					
1	**Pharmacology** Cholinesterase Inhibitors / Chemical Weapons Neurotoxicology (Zimmer)		**Pharmacology** Neuromuscular Blockers (Zimmer)	**Neuroscience Lab** The Vestibular System & Auditory System	**Humanities** Selective Session II-3 (Borchardt / Wick)
2	**Neuroscience Lab** Cerebellum - Gross Anatomy; Afferent & Efferent Connections		**Microbiology** Viral Teratogens (V.Wilson)		
3			**Neuroscience** Auditory System - Anatomy & Auditory Pathways (Leonard) Temple		
4					

Week 5 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 5

HOUR	MONDAY APRIL 11	TUESDAY APRIL 12	WEDNESDAY APRIL 13	THURSDAY APRIL 14	FRIDAY APRIL 15
8	**Pathology** CNS Tumors (Wells)		**Introduction to Clinical Skills II** Physical Exam Practical Evaluation (1/3 of class)		**NO CLASS - STUDY TIME**
9	**Pathology** Toxic, Metabolic & Traumatic Neurological Disorders (Wells)				
10	**Neuroscience** Limbic System: Anatomy & Function (Earnest)	**Pathology** Viral Infections (Leibowitz)			
11	**Neuroscience** Hypothalamus: Anatomy & Function (Ganghera) **Temple**	**Microbiology** Slow Viruses (V. Wilson)	**Pathology** CNS Non-Viral Infection (Wells)	**Neuroscience** Neurosurgical Intervention for Intracranial Disease (Friedman)	
12					
1	**Neuroscience Lab** Olfaction & Taste; Hypothalamus; Limbic System	**Humanities** Selective Session II-4 (Borchardt / Wick)	**Psychiatry** Delirium (Antunes) **Temple**	**NO CLASS - STUDY TIME**	**NEUROSCIENCE EXAM II** **(Practical Exam covers: 03/29/11 - 04/15/11)**
2			**Psychiatry** Dementia (Antunes) **Temple**		**NEUROSCIENCE EXAM II** **(ExamSoft; covers: 03/29/11-04/15/11)**
3					
4					

Week 6 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 6

HOUR	MONDAY APRIL 18	TUESDAY APRIL 19	WEDNESDAY APRIL 20	THURSDAY APRIL 21	FRIDAY APRIL 22
8	**Pathology** Ocular Neovascularization (Bayless)	**Pathology** Introduction to Ocular Pathology (Rosa) **Temple**	**Introduction to Clinical Skills II** Physical Exam Practical Evaluation (1/3 of class)		NO CLASS
9	**Neuroscience** Visual System - Globe of the Eye (Hubbard) **Temple**	**Physiology** Physiology of Vision (Peterson)		**Pathology** Peripheral Nerve Disorders (Wells)	
10	**Neuroscience** Primary Visual Pathways (Earnest)			**Neuroscience** Cortex - Anatomy and Function (Hubbard) **Temple**	
11	**Neuroscience** Visual Reflex Pathways (Earnest)		**Neuroscience** Perihperal Nerve Injuries (Allen)	**Physiology** Physiology of the EEG; Sleep & Wakefulness (Peterson)	
12					
1	**Neuroscience Lab** Visual System	**Humanities** Selective Session II-5 (Borchardt / Wick)	**Evidence Based Medicine** Part I (Via) **Temple**	**Neurosciencence Lab** Cortex	
2					
3					
4					

Week 7 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 7

HOUR	MONDAY APRIL 25	TUESDAY APRIL 26	WEDNESDAY APRIL 27	THURSDAY APRIL 28	FRIDAY APRIL 29
8		**Pediatrics** Introduction to Pediatric Neurology & Epilepsy (Sicilio)	**Psychiatry** Personality Disorders (Antunes) **Temple**	**Pharmacology** Adrenergics 4 (Trzeciakowski)	**Neurology** Introduction to Clinical Neurology - continued (Clark) **Temple**
9	**Pathology** Perinatal Injury and Malformation (Bix)	**Pharmacology** Adrenergics 3 (Trzeciakowski)	**Psychiatry** Mood Disorders (Antunes) **Temple**	**Pharmacology** Sympatholytics (Trzeciakowski)	
10	**Pharmacology** Antiepileptics (S. Reddy)	**Pharmacology** Self-Study Review-Discussion Session: Complications of Pain Management & Drug Dependence (Frye / Winzer-Serhan)	**Psychiatry** Suicide and Violence (Antunes) **Temple**	**Neurology** Introduction to Clinical Neurology (Clark)	**Neurology** Neurological Exam Basics (Clark) Temple Only
11	**Pharmacology** Adrenergics 1 (Trzeciakowski)		**Pharmacology** Antidepressant Drugs (Griffith)		**Neurology** Neurological Exam Training Small Groups Temple Only - Lunch Provided
12				**Neurology** Neurological Exam Basics (Clark) College Station Only - Lunch Provided	
1	**Pharmacology** Adrenergics 2 (Trzeciakowski)	**Humanities** Dependency Panel (Borchardt / Wick)	**Evidence Based Medicine** Part II (Via) **Temple**		
2					
3					
4					

Week 8 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 8

HOUR	MONDAY MAY 2	TUESDAY MAY 3	WEDNESDAY MAY 4	THURSDAY MAY 5	FRIDAY MAY 6
8	NO CLASS - STUDY TIME	**Pediatrics** Child Abuse (Sicilio)		**Pharmacology** Self-Study-Discussion Session: Pharmacotherapy for Epilepsy (Frye / S. Reddy)	
9		**Pharmacology** Stimulant Therapy for Attention Deficit Hyperactivity Disorder (S. Reddy)	**Psychiatry** Anxiety Disorders (Antunes) **Temple**		**Pathology** Sex Differences in Neurodegenerative Diseases and Stroke (Sohrabji)
10		**Psychiatry** Childhood Disorders (Moore) **Temple**	**Pharmacology** Anxiolytics, Sedatives, Muscle Relaxants (Frye)	**Psychiatry** Psychotic Disorders (M. L. Brown)	**Pharmacology** General Anesthesia (Frye)
11		**Psychiatry** Adolescent Disorders (Moore) **Temple**		**Pharmacology** Antipsychotic Drugs (Griffith)	**Pharmacology** Inhalation / Intravenous General Anesthetic Agents (Frye)
12					
1	**NEUROSCIENCE EXAM III (Practical Exam covers: 04/18/11 - 04/29/11)**	**Professionalism** (Ogden / Herring)	**Evidence Based Medicine** Part III (Via) **Temple**	**Humanities** Epilepsy & Parkinson's Disease Panel (Borchardt / Wick)	
2	**NEUROSCIENCE EXAM III (ExamSoft; covers: 04/18/11-04/29/11)**				
3					
4					

Week 9 Neuroscience MEID 936

Neuroscience
AY 2010-2011
Week 9

HOUR	MONDAY MAY 9	TUESDAY MAY 10	WEDNESDAY MAY 11	THURSDAY MAY 12	FRIDAY MAY 13
8				NO CLASS - STUDY TIME	NO CLASS - STUDY TIME
9		Neuroscience Neuroanatomy Review (McCord)			
10		Neuropathology Laboratory (Wells)			
11					
12					
1	Neurology Neurological Exam Training Small Groups (College Station only)		Evidence Based Medicine Part IV (Via) Temple		NEUROSCIENCE EXAM IV (ExamSoft; covers: 05/03/11-05/12/11 + comprehensive content)
2					
3					
4					

Phase II / Year I NBME Customized Exam

Neuroscience
AY 2010-2011

HOUR	MONDAY MAY 16	TUESDAY MAY 17	WEDNESDAY MAY 18	THURSDAY MAY 19	FRIDAY MAY 20
8					Phase II NBME CUSTOMIZED EXAM
9					
10					
11					
12					
1					
2					
3					
4					