MARSHALL UNIVERSITY
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School of Pharmacy

SYLLABUS
Therapeutics IV
PHAR 751
(Fall, 2014)

This syllabus is not to be construed as a contract with the student and is subject to change.

The School of Pharmacy reserves the right to change the course syllabus. *The School should notify the students through the course notification system or by an email preferably through the Blackboard system.*

Course meeting days and time	Monday, Wednesday, Thursday 3:15 – 4:45 PM
Location	Studio Classroom (SC) L10
Team Leader / Instructor	Janet Wolcott, Pharm.D
Office	MEB 150
Phone	304-696-7337
Email	wolcottj@marshall.edu
Office hours	Wednesday 1 pm – 2 pm

Faculty	Email	Office	Phone Number	Office Hours / Appointments
Megan Peterson, R.Ph	Petersonm@marshall.edu	149	507-244-1539	Friday 12 pm – 1 pm
Shekher Mohan, Ph.D.	mohans@marshall.edu	234A	304-696-7371	Monday 11am –12:15 pm
Ashley Brown, PharmD	Brownas@marshall.edu	149	614-208-9884	Friday 9 am – 10 am

Each faculty member will be available to meet with students outside of office hours by appointment

Student: If the instructor accepts appointments, then please email the instructor for availability. The student can expect the instructor to respond to E-mails and phone messages within 72 hours.

Course Description: Students will learn treatment and prevention of neurological and psychiatric diseases including the physiology, pathophysiology, pharmacology and therapy. This course emphasizes the pharmacist as a health care provider.

Prerequisites: P-3 status

Text Books:
Required:

Dipiro, JT, Talbert, RL, et. al. Pharmacotherapy: A Pathophysiologic Approach, 8th ed. McGraw-Hill Medical. 2011. ISBN-10: 0071703543 | ISBN-13: 978-0071703543

Schwinghammer T, et al. Pharmacotherapy Casebook: A Patient-Focused Approach, 8th ed. ISBN – 10: 0071746269 ISBN-13: 978-0071746267 ©2011

Recommend:

Course Objectives:

Number	Objective	Linkage to MUSOP Abilities (list ability numbers)	How Assessed
1	Obtain, organize, interpret, and evaluate patient-specific information needed to prepare a patient care plan or to identify, prevent, and resolve drug therapy problems.	1,5,6,7,44	Examination IRAT/GRAT Active Learning Exercise
2	Interpret and evaluate pharmacology and pharmaceutical related information, including drug dosage form, delivery system, drug-drug interactions, and drug-nutrition interactions, needed to prepare the care plan.	1,5,6,7	Examination IRAT/GRAT Active Learning Exercise
3	Prepare an individualized patient care plan and adjust or modify the care plan as needed based on patient specific parameters.	1,5,6,7,8,45	Examination IRAT/GRAT Active Learning Exercise
4	Perform ongoing patient monitoring, evaluation, and follow-up to identify pharmacotherapy related problems or patient adherence issues.	1,5,6	Examination IRAT/GRAT Active Learning Exercise
5	Provide counseling to patients on the proper use, side effects, storage, and handling of medications to ensure the patient's care plan is successful.	1,6,20	Examination IRAT/GRAT Active Learning Exercise

6	Educate patients and/or caregivers on non-pharmacological and lifestyle modifications to help ensure the patient care plan is successful.	1,8,20	Examination IRAT/GRAT Active Learning Exercise
7	Describe the basic anatomy and pathophysiology of different neurologic and psychiatric conditions.	1	Examination IRAT/GRAT Active Learning Exercise
8	Describe the pharmacology and pharmacokinetics of the various agents that are used to manage neurologic and psychiatric conditions disorders.	1,5,6,7	Examination IRAT/GRAT Active Learning Exercise
9	Analyze and interpret scientific literature and other information in order to draw best evidence conclusions that address specific needs or problems.	1,7,8,56	Examination IRAT/GRAT Active Learning Exercise

Schedule of Activities: (*Instructor: List each day class meets, exam schedule, major project schedule, map learning outcomes to course objective or MUSOP abilities.)*

	Date	**Meeting Format**	**Meeting Topic**	**Course Student Learning Outcomes**	**Instructor**
1	Monday August 25 3:15– 4:45	SC	Introduction to principles and concepts of CNS disorders	• Understand the hierarchy of the CNS (1) • Describe the different cells of the brain (1) • Describe the different neuronal circuitry and signal transduction of the normal brain (1) • Describe the functions of the major neurotransmitter of the brain (7, 8)	Dr. Mohan/ Dr. Wolcott
2	Wednesday August 27 3:15– 4:45	SC	Introduction to principles and concepts of CNS disorders	• Classify and apply the different neurotransmitters of the brain to CNS disorders (1)	Dr. Mohan/ Dr. Wolcott
3	Thursday August 28 3:15– 4:45	SC	Pathophysiology of pain / anesthetics / review of headache	• Compare and contrast and concepts of transduction, transmission, modulation and perception (1) • Understand the pathways of pain and the transmitters involved (1) • Describe the components involved in the classification of pain (1) • Apply components of the nociceptive pathway (ascending and descending) to current method of pain management (1) • Understand the pathophysiology behind migraine headaches (1)	Dr. Mohan

	Monday September 1 3:15– 4:45	SC	**No Class** **Labor Day**		
4	Wednesday September 3 3:15– 4:45	SC	Pharmacology of pain medications / anesthetics / headache	• Define the physiological role of opioids (7) • Describe the mechanism of non-opioid analgesics (7) • Describe and define the unique adverse effects associated with acetaminophen (5) • Predict the adverse effects associated with opioid analgesics (5) • Describe the mechanism of local anesthetics (7) • Describe the adverse effects of local anesthetics (5) • Identify the drug classes used to treat migraines (7)	Dr. Mohan IRAT/GRAT
5	Thursday September 4 3:15– 4:45	SC	Pharmacotherapy of pain medications / anesthetics / headache	• Differentiate between the kinetics, administration, side effects, and monitoring parameters of opioid and non-opioid agents (7) • Recommend treatment strategies for chronic non-cancer pain vs acute pain vs cancer pain (1,7,8,56) • Differentiate between the kinetics, administration, efficacy, side effects, and monitoring parameters of anesthetics used for local anesthesia, conscious sedation, and deep sedation (6,7) • Describe the role of neuromuscular blockers including their administration, safety, and required monitoring (6,7) • Describe the kinetics, dosage form, dosing, administration, side effects and monitoring parameters for pharmacologic treatment of acute migraine, tension, and cluster headaches (7) • Develop a therapeutic plan for migraine management appropriately combining acute and prophylactic therapy (1,7,8,56)	Dr. Peterson GRAT
6	Monday September 8 3:15– 4:45	SC	Pathophysiology of substance abuse disorders	• Describe the reward pathway within the limbic system (7) • Describe the major neuropeptides involved in addiction and receptors (7, 8, 9)	Dr. Mohan

				• Define addiction taking consideration the psychological and physiological components (7) • Compare and contrast reinforcement, withdrawal and rebound (7) • Identify the major drug-mediated CNS depressants and stimulants (7) • Describe the characteristics of opioid withdrawal	
7	Wednesday September 10 3:15– 4:45	SC	Pharmacology of substance abuse disorders	• Describe in detail how alcohol effects the excitatory role of NMDA receptors, GABA and glutamate synaptic signaling (7,8) • Describe the mechanism of Disulfiram and Naltrexone in the treatment of alcohol abuse • Compare and contrast the difference between treating substance intoxication and withdrawal (1) • Describe the pharmacology of lorazepam used to treat cocaine intoxication (7, 8)	Dr. Mohan IRAT/GRAT
8	Thursday Sept 11 3:15-4:45	SC	Pharmacology of substance abuse disorders	Continuation of Wednesday September 10	Dr. Mohan
9	Monday September 15 3:15 – 4:45	SC	Pharmacotherapy substance abuse disorders I	• Differentiate between physical dependence and addiction to drugs and other substances • Recognize the signs and symptoms associated with the abuse of the central nervous systems depressants, including benzodiazepines, gamma hydroxybutyrate, and the opiates • Recommend appropriate treatment for abuse and dependence on the various central nervous system depressants • Recognize the signs and symptoms of abuse of central nervous stimulants such as cocaine and methamphetamine • Outline the circumstances under which office-based opiate detoxification and maintenance would be appropriate using buprenorphine • Discuss the role of Marijuana risk vs benefit within the United States	Dr. Wolcott
10	Wednesday Sept 17 3:15– 4:45	SC	Pharmacotherapy Substance Abuse disorders II	• List the adverse health effects brought about by the use/abuse of alcohol, nicotine, and caffeine	Dr. Wolcott

				• Recommend specific drugs and dosing regimens for preventing withdrawal from alcohol • Evaluate the role of naltrexone and disulfiram as long-term treatments for alcohol dependence. • Make evidence-based recommendations for helping people to stop smoking • Select an appropriate product to be used as nicotine replacement therapy in a given patient, considering cost, convenience, efficacy, and side effects • Compare and contrast the five first-line pharmacotherapies that reliably increase long-term smoking abstinence rates	
11	Thursday September 18 3:15– 4:45		Pathophysiology / Pharmacology Strokes	• Describe in detail the difference between ischemic and hemorrhagic strokes (1, 7, 8) • Identify the major cellular components responsible for neuronal death following stroke (7, 8) • Outline mechanism of TPA and its adverse effects (8) • Outline the mechanism of ASA (7)	Dr. Mohan
12	Monday September 22 3:15– 4:45	SC	Pharmacotherapy of stroke treatment	• Describe the acute treatment of ischemic stroke including the implications of Antihypertensives regarding permissive hypertension and the dosing, administration, contraindications, efficacy, cost, and risks of reperfusion with tPA (6,7,45) • Recommend acute treatment of hemorrhagic stroke based on the kinetics, dosing, administration, efficacy, risks, and monitoring parameters of medications used for reversal of anticoagulation (1,6,7,20) • Analyze the controversial use of Aspirin for primary prevention of ischemic stroke (45, 56) • Develop a plan for secondary prevention of ischemic stroke including statins, Antihypertensives, antiplatelet agents, and oral anticoagulants based on their indications, dosing, side effects, drug interactions, pharmacogenomics, efficacy, and monitoring parameters (7,8,56)	Dr. Peterson Graded ALE

13	Wednesday September 24 3:15– 4:45	SC	Pathophysiology/ Pharmacology of Epilepsy	• Define, compare and contrast between seizures and epilepsy (1, 7, 8) • List the components that contribute to imbalances between excitatory and inhibitory process of the brain (7, 8) • Differentiate between partial and generalized seizures (7, 8) • Describe the mechanism and major adverse effects of the following AED's: carbamazepine, clobazam, gabapentin, ethosuximide, lamotrigine, phenytoin, topiramate and valproic acid (1, 7, 8) • List both the pharmacodynamics and pharmacokinetic related drug interactions (7, 8)	Dr. Mohan IRAT/GRAT
14	Thursday September 25 3:15– 4:45	SC	Pharmacotherapy of Epilepsy	• Connect medication options to the appropriate seizure type (7) • Describe kinetics, dosage forms, side effects, and monitoring parameters of anti-epileptic medications (7) • Develop a therapeutic plan for patient's based on seizure type, concurrent medications or disease states, and patient's individual needs (including cost, coverage, and compliance) (8,20,45) • Modify a given therapeutic care plan based on patient's current condition, results of follow-up monitoring, and goals of treatment (5,6,7) • Modify care plans based on assessment of patient's progress toward treatment goals to achieve optimal outcomes (1)	Dr. Brown/ Dr. Wolcott
15	Monday September 29 3:15– 4:45	SC	Pharmacotherapy of Epilepsy	• Describe the clinical presentation of status epilepticus (3) • Describe the kinetics of benzodiazepines, preferred route of administration for each, and why one is preferred over another in a given situation (1,7) • Explain the goals of both initial and secondary treatment of status epilepticus (2,3) • Choose the optimal agents for both initial and secondary treatment of status epilepticus based on patient presentation, patient history, and laboratory information (1,5,6,7,8)	Dr. Brown /Dr. Wolcott ALE GRADED
16	Wednesday October 1 3:15– 4:45	SC	Pathophysiology & Pharmacology of Alzheimer's disease	• Define Alzheimer's disease (7)	Dr. Mohan IRAT/GRAT

				• Compare and contrast between Amyloid plaques, neurofibrillary tangles and inflammatory mediators as factors involved in AD (7, 8) • List the cognitive and noncognitive symptoms of AD (7,8) • Explain the mechanism of donepezil and memantine (7, 8)	
17	Thursday October 2 3:15– 4:45	SC	Therapy of Alzheimer's disease (AD): cognitive dysfunctions	• Describe the diagnostic criteria and treatment goals of AD, both pharmacologic and nonpharmacologic (7) • Recommend pharmacologic therapy for treatment of cognitive symptoms of AD based on patient specific parameters, dosage form, efficacy, side effects, and monitoring parameters of cholinesterase inhibitors and antiglutamatergic agents (1,7,8) • Develop a treatment plan for noncognitive symptoms AD based on the dosing, patient specific parameters, dosage form, efficacy, drug interactions, side effects, and monitoring parameters of medications used to treat psychotic symptoms, misbehavior, and depression (1,7,8) • Compare and contrast the presentation, diagnostic similarities vs differences, and treatment that differentiates AD from Dementia of Lewy Body and Frontal Lobe Dementia (1,7,44)	Dr. Peterson GRAT
	Friday October 3 2pm – 4pm		EXAM I	Material through September 22	
18	Monday October 6 3:15– 4:45	SC	Pathophysiology & Pharmacology of Parkinson's disease	• Define the histopathological hallmarks of PD (7, 8) • Understand the role of the basal ganglia in PD (7, 8) • Compare the mechanistic differences between anticholinergics, DA agonist, MOA-B inhibitors and Carbidopa/levodopa agents (7, 8) • Prepare a discussion of adverse effects associated with drugs used to treat PD (2, 8)	Dr. Mohan
19	Wednesday October 8	SC	Progressive, therapeutic	• Describe the clinical presentation and progression of PD (1,44)	Dr. Peterson Graded ALE

	3:15– 4:45		management of Parkinson's disease	• Describe the kinetics, dosing, administration, efficacy, adverse effects, and monitoring parameters of PD medications including anticholinergics, decarboxylase inhibitors, levodopa, dopamine agonists, COMT inhibitors, and MAO-B inhibitors (7) • Develop a treatment plan for initial treatment of PD (1,7,8) • Modify treatment plan based on patient specific factors including management of motor fluctuations, peak-dose dyskinesia, hallucinations, and psychosis (1,5,7,8) • Evaluate the medication regimen for drugs that may exacerbate PD (1,5)	
20	Thursday October 9 3:15– 4:45	SC	Progressive, therapeutic management of Parkinson's disease	• See learning objectives from previous session	
21	Monday October 13 3:15– 4:45	SC	Pathophysiology & Pharmacology of Multiple Sclerosis	• Define autoimmunity (7) • Describe the role of T-cells in MS (7) • Explain the mechanism and adverse effects of interferon-beta, and DMT agent's mitoxantrone, fingolimod and dimethyl fumarate (7, 8)	Dr. Mohan IRAT/GRAT
22	Wednesday October 15 3:15 – 4:45	SC	Pharmacotherapy of Multiple Sclerosis	• Describe the three categories of MS clinical presentation as well as the classifications of the clinical course of illness (1,44) • Differentiate strategies for treatment of MS exacerbations including high-dose steroids, plasma exchange, and IVIG including administration, safety, drug interactions, efficacy, cost, and monitoring parameters (5,45) • Develop a plan for disease-modifying therapy based on the administration, safety, efficacy, monitoring parameters, and cost, following current treatment guidelines (1,7,20,56) • Modify treatment plan based on symptomatic management of comorbid complications including but not limited to UTIs, tremor, spasticity, depression, and fatigue (1,5,8)	Dr. Peterson GRAT

23	Thursday October 16 3:15– 4:45	SC	Pathophysiology pharmacology of Depression and Anxiety	• Understand the etiopathology of depression and anxiety disorders (7, 8) • Differentiate between emotional and physical symptoms (4) • Identify similarities and differences between mechanism of action of TCA's (e.g. SSRI's) and MOAI's (8) • List the major adverse effects associated with common SSRI's and TCA's agents (8) • Identify the dietary and medication restrictions associated with MOAI's (2, 5, 6, 8) • Compare and contrast between NE, GABA and 5-HT dysregulation in anxiety disorders (7) • Describe the difference between generalized anxiety disorder, panic and social anxiety disorders (1, 8) • Identify the first and second-line agents for the treatment of generalized anxiety disorder (8) • Predict adverse effects associated with SSRI's (8)	Dr. Mohan IRAT/GRAT
24	Monday October 20 3:15– 4:45	SC	Pathophysiology and pharmacology of schizophrenia	• List the major cellular changes evident in schizophrenia (7) • Identify at least five characteristic symptoms of schizophrenia as defined by the DSM-IV diagnostic criteria (3) • Explain the mechanism for second-generation antipsychotics (7, 8) • Explain why antipsychotics may have adverse effects on the endocrine and cardiovascular systems (8) • Know why antipsychotics may have adverse effects on the CNS in the form of dystonia and akathisia (7, 8)	Dr. Mohan
	Tuesday October 21 6pm – 8pm		**EXAM II**	**Material from Sept 24 – October 15**	
25	Wednesday October 22 3:15– 4:45	SC	Pathophysiology and pharmacology of bipolar disorder	• Define bipolar disorder (7) • Describe the role of monoamines and GPCR in the etiopathology of bipolar disorders (7, 8) • Identify key cellular changes of brain (7, 8) • List the first, second and alternative-line of therapy for mania (2, 8)	Dr. Mohan IRAT/GRAT

				• List the major adverse effects associated with lithium and lithium-like agents (8) • Identify the FDA-approved anticonvulsants (8)	
26	Thursday October 23 3:15– 4:45	SC	Pathophysiology and pharmacology of Attention Deficit / Hyperactivity Disorder	• Define ADHD (7) • List the candidate genes found to linked to ADHD and potential environmental factors involved in the etiology of ADHD (7) • Compare the mechanistic differences between stimulants and nonstimulants (7, 8) • Identify the method of manage common adverse effects associated with stimulant agent used to treat ADHD (7, 8)	Dr. Mohan
27	Monday October 27 3:15– 4:45	SC	Pharmacotherapy of Depression	• List the major symptoms exhibited in a patient suffering from major depression as defined in the *DSM-5* (1) • Describe the general approach to treatment for special populations (i.e. geriatrics, elderly, pediatric, and pregnant patients) (1,5) • Modify a given therapeutic care plan based on based on patient's current condition, results of follow-up monitoring, and goals of treatment (1,5,6,7,8,20) • Identify treatment options for patients who are treatment- resistant (1,5,6,7,8,20, 45) • Define the role of the pharmacist in the screening, recognition, and treatment of depression when a collaborative approach is utilized (46) • Recommend appropriate nonpharmacologic and pharmacologic treatment approaches for depressive disorders (1,5,6,7,8,20,45) ○ Recommendations should include when applicable: ▪ Dosing / directions for use ▪ Contraindications ▪ Side effects ▪ Monitoring ▪ Patient counseling	Dr. Wolcott GRAT
28	Wednesday October 29 3:15– 4:45	SC	Pharmacotherapy of anxiety disorders I	• Describe the clinical presentation of generalized anxiety, panic, and social anxiety disorders (1)	Dr. Wolcott

				• Recommend starting doses of first-line pharmacotherapy options in each anxiety disorder (1,5,8) • Design a pharmacotherapy treatment regimen for each anxiety disorder (1,5,6,7,8,29,45) • Formulate a plan of how to discontinue pharmacotherapy with antidepressants for each of the anxiety disorders (1,5,7,20) • Recommend appropriate nonpharmacologic and pharmacologic treatment approaches for depressive disorders (1,5,6,7,8,20,45) o Recommendations should include when applicable: ▪ Dosing / directions for use ▪ Contraindications ▪ Side effects ▪ Monitoring ▪ Patient counseling	
29	Thursday October 30 3:15– 4:45	SC	Pharmacotherapy of anxiety disorders II	• Describe the clinical presentation of posttraumatic stress disorder and Obsessive-Compulsive Disorder (OCD) (1) • Recommend a first-line agent for the pharmacotherapy of posttraumatic stress disorder and OCD (1,5,8) • Recommend appropriate nonpharmacologic and pharmacologic treatment approaches for depressive disorders (1,5,6,7,8,20,45) o Recommendations should include when applicable: ▪ Dosing / directions for use ▪ Contraindications ▪ Side effects ▪ Monitoring ▪ Patient counseling • Modify a given therapeutic care plan based on patient's current condition, results of follow-up monitoring, and goals of treatment (5,6,7) • Modify care plans based on assessment of patient's progress toward treatment goals to achieve optimal outcomes (1,5,6,7,20,45)	Dr. Wolcott IRAT/GRAT
30	Monday November 3 3:15– 4:45	SC	Pharmacotherapy of schizophrenia	• Describe kinetics, dosage forms, side effects, and monitoring parameters of antipsychotics (7) • Select appropriate initial therapy based on patient's condition, diagnosis, and family history (1,8,20)	Dr. Brown

				• Develop appropriate goals of therapy based on patient's presenting complaints, patient's baseline level of functioning, and patient's individual needs (including cost, coverage, and compliance) (5,7,8,20,45) • Modify a given therapeutic care plan based on patient's current condition, results of follow-up monitoring, and goals of treatment (1,5,6,7) • Modify care plans based on assessment of patient's progress toward treatment goals to achieve optimal outcomes (1) • recognize the positive and negative symptoms if schizophrenia, and differentiate disease signs and symptoms from medication side effects •	
	Wednesday November 5 3:15 – 4:45pm		Pharmacotherapy of bipolar disorder	• Describe kinetics, dosage forms, side effects, and monitoring parameters of mood stabilizing medications (7) • Explain the difference between primary, alternate, and adjunctive treatment, and list medications used for each (7) • Select appropriate initial therapy based on patient's condition, diagnosis, and family history (1,8,20) • Develop appropriate goals of therapy based on patient's presenting complaints, patient's baseline level of functioning, and patient's personal goals (5,7,20) • Modify a given therapeutic care plan based on patient's current condition, results of follow-up monitoring, and goals of treatment (1,5,6,7) • recognize symptoms of various bipolar episodes including depression, mania, hypomania, euthymia, episodic, and cycling	Dr. Brown GRADED ALE (Simulated patients?)
32	Thursday November 6 3:15– 4:45	SC	Management of Attention Deficit/ Hyperactivity Disorder	Compare and contrast predominantly inattentive, hyperactive/impulsive, and mixed presentation of ADHD (1,44) Analyze existing clinical controversies of ADHD treatment as well as the new DSM-V changes in diagnostic criteria (1,56) Compare and contrast kinetics, administration, adverse effects, efficacy, and monitoring parameters of stimulants,	Dr. Peterson IRAT/GRAT

				atomoxetine, TCAs, bupropion, and α–2 agonists in the primary treatment of ADHD (7) Modify treatment plan based on patient specific parameters including the management of stimulant adverse effects and comorbid conditions (1,5,8)	
33	Monday November 10 3:15– 4:45	SC	Pathophysiology and pharmacology of eating disorders	• Understand the role of the hypothalamic-pituitary-adrenal/thyroid/gonadal system (7) • Compare and contrast the symptoms and signs of anorexia and bulimia (3) • Know the mechanism of fluoxetine as a common agent used to manage anorexia and bulimia (8)	Dr. Mohan
34	Wednesday November 12 3:15– 4:45	SC	Pharmacotherapy of eating disorders	• Describe the differences between anorexia nervosa, bulimia nervosa, and eating disorder NOS (44) • Develop a treatment plan based on administration, safety, efficacy, and monitoring parameters of antidepressants, antipsychotics, and benzodiazepines when indicated for treatment of anorexia nervosa and bulimia nervosa (1,7,8) • Modify treatment plan for an obese patient based on patient specific parameters, administration, efficacy, adverse effects, safety, and monitoring of stimulants, antidepressants, anticonvulsants, and lipase inhibitors (1,5,6,8)	Dr. Peterson GRAT
35	Thursday November 13 3:15– 4:45	SC	Pathophysiology and pharmacology of sleep disorders	• List the neurotransmitters and neurochemicals involved in the induction, maintenance, REM and wakefulness (7, 8) • Identify benzodiazepine receptor agonists used to treat insomnia (8) • Explain the mechanism of non-benzodiazepine agents and there advantages over benzodiazepine agonist (8) • Define narcolepsy (7) • Discuss the pharmacological option used to treat narcolepsy (8)	Dr. Mohan
	Friday Nov 14 8:am– 10:am		**EXAM III**	**Material from Oct 15 – Nov 10th**	

36	Monday Nov 17 3:15– 4:45	SC	Pharmacotherapy of sleep disorders	• Appropriately identify and evaluate specific sleep disorders; insomnia, sleep apnea, narcolepsy, restless legs syndrome, periodic limb movements, circadian rhythm disorders (1) • Develop patient specific nondrug and drug treatment plans for specific or coexisting sleep disorders, including insomnia, sleep apnea, narcolepsy, restless legs syndrome, periodic limb movements, and circadian rhythm disorders. (1,5,6,7,8,20,45) • Identify adverse effects and precautions of therapies for restless legs syndrome (1,20,45, 46) • Describe the differences in significance and management between PLMS and RLS (1) • Assess the effectiveness of and optimize nonpharmacologic and pharmacologic therapies for sleep disorders (1, 5,6,8,45) • Educate and counsel patients on the importance of sleep and good sleep hygiene (1,20,46) • Discuss how unrecognized and poorly treated sleep disorders may affect the treatment and severity of concomitant systemic diseases (46)	Dr. Wolcott GRAT
37	Wednesday November 19 3:15– 4:45	SC	Pathophysiology & pharmacology of intellectual ability disorders	• Compare and contrast the pathophysiology of Autism, Asperger's and Rett's syndromes (7) • Know the mechanism and adverse effects of haloperidol, aripiprazole and risperidone used to treat symptoms of autism (8)	Dr. Mohan IRAT/GRAT
38	Thursday November 20 3:15– 4:45	SC	Pharmacotherapy of intellectual ability disorders	• Compare and contrast the signs and symptoms of Down syndrome, autistic disorder, and Rhett syndrome (1) • Discuss the medical implications of common comorbid conditions in a patient with Down syndrome (Alzheimer's, leukemia) (1,5,7,20,46) • Compare and contrast treatment modalities utilized in persons diagnosed with intellectual ability disorders (1) • Develop and modify a pharmacotherapy treatment plan for intellectual ability disorders (1,5,6,7,8,20, 45) • Develop pharmacotherapy treatment plans to address potential clinically significant	Dr. Wolcott GRAT

				drug interactions associated with the use of atypical antipsychotic agents in the intellectually disabled population (1,6,20,45,46)	
	Monday Nov 24 3:15– 4:45	SC	**No Class** **Fall Break**		
	Wednesday Nov 26 3:15– 4:45		**No Class** **Fall Break**		
	Thursday Nov 27 3:15– 4:45		**No Class** **Fall Break**		
39	Monday December 1 3:15– 4:45		Misc. Psychotropic adverse events	• Identify serious potential adverse events (NMS, TD, Serotonin Syndrome, Extrapyramidal symptoms) (1) • Compare and contrast potential adverse events (NMS, TD, Serotonin Syndrome, extrapyramidal symptoms) • Develop treatment plan to address adverse events (NMS, TD, Serotonin Syndrome, Extrapyramidal symptoms) (7, 20,45) • Educate healthcare providers, patient, family members and caregivers to identify, prevent, and treat potential adverse events (5,45, 46)	Dr. Wolcott GRADED ALE
40	Wednesday December 3 3:15– 4:45	SC	Acute management of the brain injury patient	• Describe the most common causes of severe traumatic brain injury (TBI) and the typical age distribution for patients sustaining such injuries. • Evaluate the neurological state of a severe brain injury patient using the Glasgow Coma Scale (GCS) and factors that may affect the GCS in addition to TBI • Summarize the impact of the Brain Trauma Foundation Guidelines for the Management of Severe Brain Injury on the consistency of care for severe TBI patients. • Formulate a general treatment plan for a severe TBI patient during the initial resuscitation and post resuscitative care periods. • Devise an overall monitoring and treatment plan for the acute management of increased intracranial pressure (ICP) in a TBI patient including pharmacologic and nonpharmacologic strategies	Dr. Wolcott/ Dr. Mohan

				• Compare and contrast the relative advantages and disadvantages of the commonly used analgesics, sedatives, and paralytics in the management of the TBI patient Outline the evidence for the off-label use of several CNS pharmacologic agents in the acute management and rehabilitation of TBI patients	
41	Thursday December 4 3:15– 4:45	SC	Pharmacotherapy of Glaucoma	• Differentiate between the presentation of open-angle vs closed angle glaucoma (1) • Compare and contrast the efficacy, side effects, and administration of ocular agents for open-angle glaucoma and closed-angle glaucoma (7) • Identify the medications that are high risk for exacerbation of open-angle or closed-angle glaucoma (7) • Perform the appropriate technique for administration of ophthalmic drops (1)	Dr. Peterson
	Monday December 8 8:00 – 10:00		FINAL EXAM		

SC = Studio Classroom

Course Evaluation (grading)

Point or Percentage Distribution:

3 Exams = 45%*
Comprehensive Final Exam 20% * (70% needed on final examination to successfully pass this course)
IRATs= 10%
GRATs = 10%
Active Learning Events/Assignments/Participation = 15%

***Major Assessments**

IRAT = Individual readiness assurance test
GRAT = Group readiness assurance test

Letter grades distribution: A = 89.50 to 100%
B = 79.50 to less than 89.50%
C = 69.50 to less than 79.50%
F = Less than 69.50%

Course Evaluation (assessment):

Student Evaluation:

Survey: each student will have the opportunity to evaluate each instructor as well as course content via the school's universal evaluation survey

Faculty Evaluation: Faculty members participating in the course will attend class as often as possible to evaluate overall performance

Assignment and examination grades will be posted in Blackboard within 7 days unless otherwise stated.

Classroom materials: Students are expected to have a physical or electronic copy of required textbooks available for use in the classroom during all scheduled class times. Students are also expected to have applicable Turning Point hardware and/or software available during all scheduled class times. Turning Point hardware and/or software is expected to be registered and interfaced with Blackboard by the student.

Attendance policy:
Each student is expected to attend class. Attendance is mandatory at graded events. Only excused absences are accepted-see University and school polices. In the event of an excused absence, the student will be able to make up any IRATs or ALEs missed. The ALE may be a different activity / assignment as from the ALE in the classroom. However, given the natures of the GRATs, GRATs will be unable to be made up. Once a student has received an excused absence, any make-up work will be completed within 7 days or the student will forfeit the right to make-up those assignments. It is the student's responsibility to contact the faculty to discuss missed work.

Late-Work Policy: It is the expectation that all work is turned in on time according to deadlines set forth in the syllabus and on assignment documents. Unless discussed with the professor prior to the due date, 1% will be deducted from the assignment grade for each day the assignment is late.

UNIVERSITY POLICIES

University policies regarding **Academic Dishonesty, Students with Disabilities, University Computing Services' Acceptable Use**, **Affirmative Action, and Sexual Harassment can be found at http://www.marshall.edu/wpmu/academic-affairs/policies/.**

School of Pharmacy Policies

SOCIAL JUSTICE POLICY STATEMENT

Marshall University is committed to bringing about mutual understanding and respect among all individuals and groups at the University. As part of Marshall University, School of Pharmacy has made a commitment to social justice. Therefore, no one will be discriminated against on the basis of race, gender, ethnicity, age, sexual orientation, religion, social class, or differing viewpoints. Each student will be viewed as a valuable member of this class and as the faculty for the course; I will strive to facilitate an atmosphere/learning environment where mutual understanding and respect are actualized.

ACADEMIC, ETHICAL, AND PROFESSIONAL CONDUCT

Student expectorations for academic, ethical, and professional conduct are defined within the school's Ethical and Professional Conduct Policy and the university's Academic Dishonesty Policy.

Second Chance and Remediation Policy

Second chance and remediation are mechanisms designed to assist students who have struggled within the classroom environment in demonstrating achievement of classroom and curricular learning outcomes. These processes are described in sections 200.001.003 (Second Chance) and 200.001.004 (Remediation) of the Academic Standards for Grading, Progressions, Dismissal, and Re-admission Policy.

Test Security Policy

In order to ensure the security of all examinations, the School of Pharmacy has adopted the following policies:

1. Test Administration

A. Non-electronic testing
   a. Students may not access any electronic equipment during the exam that has not been approved by the faculty, including but not limited to calculators, and laptops.
B. Electronic testing
   a. Only those resources (electronic or otherwise) approved by the instructor may be used or accessed during the testing session.
   b. Students enrolled within courses using electronic testing must download and install the Respondus Lockdown Browser. The installation will require an installation code that must be acquired from Computing Services.

C. Testing environment
   a. No unauthorized food or drinks
   b. Only prescription glasses allowed, no hats, no hoodies
   c. Write name on scratch paper and turn in after completion of examination
   d. If calculators are necessary MUSOP calculators will be provided
   e. Only items allowed in examination room is laptop, writing utensil, and mouse. (All personal belongs are to be outside the classroom)

2. Test Review

A. Students will not be allowed to view any exam without direct supervision of course faculty or site facilitator
B. Students must review tests within time specified by the course faculty.
C. Limited numbers of students may be allowed to view the exam at one time depending on office size, space, and faculty preference.
D. Students will be allowed to review the exam only one time, and time limits may be placed on review as specified by course faculty.
E. NO notes can be taken by the student while reviewing the test, and students are not allowed to access any electronics while reviewing the tests. NO copies electronic or written!
F. Individual student printouts for exams are to be retained by the faculty.
G. Faculty has the right to place further restrictions on test review as deemed necessary.

3. Examination / IRAT/GRAT inquiries:

A. Examination:

1. Complete a test question review form (located on blackboard in course content – Test Folder
2. Form must be submitted to a course team member within 48 hours of examination score release (if no supporting documentation is provided the inquiry will not be reviewed.)
3. The team will provide a response within 48 hours.

B. IRAT / GRAT:
1. Complete an IRAT/GRAT question review form (located on blackboard in course content – Test Folder
2. Form must be submitted to course team member by 10:00am the day after the IRAT / GRAT administered. (If no supporting documentation is provided with the form the inquiry will not be reviewed.)
3. The team will provide a response within 48 hours