

**Psychopharmacology**  
**Dr. Elena Molchanova, MD (Psychiatry)**  
**PSY 300**  
**ID 2817**

Office: AUCA; Psychology Department  
Pre-requisites: General Psychology  
Meeting times: Tue 12.45; Wed 12.45  
Credit hours: 3 credits  
E-mail: molchanova\_e@mail.auca.kg  
Phone: 66-67-64 (+238)

Readings:

1. Carlson, N. (2007). *Psychopharmacology* in: Physiology of Behavior (9th edition). Boston: Allyn-Bacon
2. Richard P. Halgin, Susan K. Whitbourne (2000) *Abnormal Psychology: clinical perspectives on psychological disorders*, 3rd edition

Extra-texts:

American Psychiatric Association (1994). *DSM-IVTR: Diagnostic and Statistical Manual of Mental Disorders (4th Edition)*

All necessary recourses are available at [www.e-course.auca.kg](http://www.e-course.auca.kg).

Key word: DRUG (in capital letters)

**Course description**

The primary objective of this course is to introduce undergraduate students to the field of psychopharmacology by reviewing biological and practical elements related to psychotropic medications. The course will be divided into three sections, *the first of which* will be general pharmacology. There will be detailed emphasis on the neurotransmitters and their functions, areas of pharmacodynamics and pharmacokinetics. *The second section* will focus on psychopharmacology, in which specific classes of currently used psychotropic medications and their mechanisms of action will be presented. *The third section* will consist of psychopharmacotherapy; essentially, the practical application of psychotropic medications to mental disorders. In this section, current practice guidelines and issues related to pharmacologic treatment with various agents will be reviewed.

**Course objectives**

Upon completion of the course, the student will:

1. Describe the structure and function of neurons, as well as key elements of synaptic neurotransmission.
2. Identify the key elements of signal transduction, psychopharmacological dynamics, psychopharmacological kinetics, and transporter/receptor function.
3. Identify ion channels and enzymes as targets of psychopharmacological drug actions.
5. Examine important psychopharmacological circuits and be able to deconstruct psychiatric syndromes to introduce rationale treatment strategies
6. Describe medication strategies for modern and novel treatments of mental disorders.
8. Analyze how the deconstruction of the psychotic disorders aids psychopharmacological interventions.

**Course requirements**

1. Quizzes: Three quizzes (after each section) will be given during the semester. Quizzes will encompass the information surveyed the core text chapters, discussions, case examples, videos and other illustrative material. Each quiz will be running over first 25 minutes of class. Quiz is worth 15 points each and 45 points you will be able to receive as a total.

2. Presentation: Each student will be required to elaborate thematic presentation on topics listed below (see Class Schedule). Please see me to discuss topic of presentation and other relevant issues ahead of time. This assignment is worth 10 points and you will be evaluated by your classmates.
  
3. Case studies (20 points)  
This clinical –oriented course suggests a number of case studies. Each of you will have to analyze a case, make a diagnosis and suggest a treatment plan with indicating concrete medications and their dosage.
  
4. Final Exam:  
The final will be given during the session time (see Class Schedule below). This exam will cover all factual materials of the course plus the information from class presentations. No excuse is necessary to miss a scheduled examination. The exam will be multiple choices, analysis of study cases, and short answers. The exam will be worth 25 points.

### Grading scale

A = 95-100 points; A- = 90-94 points; B+ = 88 - 89 points; B = 80 - 87 points; B- = 78 -79 points; C+ = 76 - 77 points; C = 70 -76 points; C- = 65-69 points; D = 55 - 64 points; F = below 55 points

### Course Cheating Policy

AUCA Academic Honesty Regulations 2010 will be applicable to proven cases of academic misconduct. Please see AUCA electronic resources for detail. To prevent any cases of academic dishonesty get accurate with references. Follow APA Student Writer’s Manual (1999) to document bibliography sources properly.

### Course schedule (Also available at e-course.auca.kg)

<b>First section: General Psychopharmacology</b>	
1 week	Introduction to Course. Review of Course Syllabus and Requirements Structure of the course and course requirements. Interactive lecture (review): communication within neuron and between neurons. Structure of synapse.
2 week	Neurotransmission overview, Neurotransmitters (NT), classification of NT. their functions. Basic Definitions, principles of drug action on synaptic transmission.
3 week	Pharmacokinetics, pharmacodynamics, routes of drug administration, therapeutic dosages, lethal dose, tolerance and sensitization, drug efficacy. <b>Quiz 1</b>
<b>Second section: psychotropic medication</b>	
4 week	Chemistry of different mental disorders. Classification of psychotropic medications. Tendency in the development of modern psychopharmacology. Notion of neuroplasticity. Modern classifications of mental disorders.
5 week	Psychosis. Dopamine receptors un the brain. Antipsychotics, classification and mechanisms of action. Side effects. New generation of antipsychotics. <b>Topics to present:</b> <i>Negative symptoms of schizophrenia and modern antipsychotics;</i> <i>Cultural features of schizophrenia and antipsychotic medication</i> <i>Differential analysis between schizophrenia and other psychotic disorders</i>

6 week	<p>Mood disorders. Neurochemistry and neurophysiology of depression. Different types of depression. Somatopsychiatry and psychosomatics. Classification of antidepressants. Basic mechanisms of action. Modern antidepressants: myths and reality.</p> <p><b>Topics to present in class:</b>  <i>Atypical depressions and manias</i>  <i>Differential diagnosis between mood disorders with psychotic symptoms and schizophrenia</i>  <i>Ethical aspects of using antidepressants in primary care.</i></p>
7 week	<p>Mood stabilizers (neuromodulators). Classification and mechanisms of action. Modern mood stabilizers, indication for use. Notion of comorbidity. Symptom Circuitry, differential diagnosis in complicated cases, basic principles of treatment in complicated cases.</p> <p><b>Topics to present:</b>  <i>Comorbidity: pseudo- and real comorbidity</i>  <i>Psychopharmacology in personality disorders</i>  <i>Psychopharmacology in ADHD</i></p>
8 week	<p>Anxiety disorders and anxiolytics. PTSD. Somatoform and Dissociative Disorders: Conversion Disorder. Somatization Disorder. Basic principles of psychopharmacology.</p>
9 week	<p>The Dementias. Neurochemistry and neurophysiology of dementias. Classification of dementias. Basic principles of psychopharmacology</p>
10 week	<p>Substance abuse. Basic principles of psychopharmacology</p> <p><b>Topics to present:</b>  <i>Psychopharmacology</i></p> <p><b>Quiz 2</b></p>
<b>Psychopharmacotherapy</b>	
11 week	<p>Analysis of symptom dynamics, different structures of a similar clinical picture. Therapy <i>ex uvantibus</i>. Pitfalls and plums of clinical protocols and algorithms.</p>
12 week	<p>Case studies analysis. Schizophrenia with <i>anesthesia psychica dolorosa</i>  Schizophrenia and depression. Atypical schizophrenia and atypical depression. Treatment plans</p>
13 week	<p>Case studies analysis. Anxiety disorders. Psychopharmacology and psychotherapy. Psychotherapeutic support of psychopharmacotherapy. Compliance and psychotherapeutic dyad. Positive and negative placebo effects.</p>
14 week	<p>Case studies analysis. Comorbidity. Interaction between depression and anxiety symptoms. Pseudo- and real comorbidity. Basic principles of psychopharmacology in comorbid cases.</p> <p><b>Quiz 3</b></p>
15 week	<p>Preparation for final exam. Final exam week</p>