**Know Your Recreational Drugs**

Arts and Sciences 138.?, Freshman Seminar

Spring and Autumn Quarters, 2 Credits

Wednesday, 1:30-3:18PM, Building?, Room?

**Instructor Office**

Gopi A. Tejwani 5072 Graves Hall

**E-mail Office Hours**

Tejwani.1@osu.edu M-W-F 10:00 a.m. – 3:00 p.m.

**Course Description**

Have you ever used an illicit drug such as marijuana, cocaine, amphetamines? If yes, you are one of every three Americans who have used these drugs. Millions of Americans abuse legal drugs such as alcohol, tobacco/nicotine and narcotics. Do you know how these drugs change your physiology, mind and behavior? Medical scientists, legislators and media personnel have devoted considerable attention to drugs, yet most of us have limited information about their short- and long-term effects on our body. We will discuss in simple language, the biochemical, behavioral and social factors associated with the use of recreational drugs. We plan to understand the mechanism of action and use of amphetamines, methamphetamine, opiates, marijuana, cocaine, crack, hallucinogens, and club drugs, as well as legal substances as alcohol, tobacco and prescription drugs. Why do some people get addicted to the drugs? We will focus on the physiology of drug addiction as well as scientific procedures employed to treat drug abuse. No prior knowledge of physiology or biochemistry is needed to join this class. Students will learn not only about the drug effects on the body but will also become familiar with very basic concepts in physiology, biochemistry and pharmacology. In addition, they will know the impact of these drugs on our culture through their use in movies, clubs and other social venues. All classes will have a 'discussion' format except the first class. Students will be evaluated based on the discussion in the class and their presentations, by the instructor and a student's peers.

**Texts**

All PowerPoint presentations made by the instructor will be posted on the Carmen Course web site before the first day of class . The course material posted on the web site should be enough to have a good discussion in the class. The following two books are useful to learn more about the subject. It is not necessary to buy these books.

1. ***Drugs of Abuse***by Simon Wills, 2nd edition, Pharmaceutical Press, Chicago, ISN 0-85369-582-2.

2. ***The American Drug Scene*** by J. Inciardi and K. Mcelrathy, 6th edition, Oxford, 2011, ISBN 9-78019-97-3929-5.

**In addition, the following web sites are very useful to learn more about the drugs discussed in the class.**

Drugs and Pharmacy

<http://www.globalrph.com/index.htm>

Prescription Drugs

<http://www.rxlist.com/>

FDA

<http://www.fda.gov/cder/drug/default.htm>

Wikipedia

[http://en.wikipedia.org/wiki/Category:Pharmacology](http://en.wikipedia.org/wiki/Category%3APharmacology)

National Institute on Drug Abuse

<http://www.nida.nih.gov>

Drug Scope

<http://www.drugscope.org.uk>

World Health organization

<http://www.who.int/substance_abuse/en/>

Virtual Clearinghouse on Alcohol, Tobacco and Other Drugs

<http://www.atod.org/>

US Drug Enforcement Administration

<http://www.usdoj.gov/dea>

Daily Dose

<http://www.dailydose.net>

Victoria Government (Australia) Drugs Site

<http://www.drugs.vic.gov.au>

National Treatment Agency UK

<http://www.nta.nhs.uk/>

Harm Reduction

<http://www.harmreduction.org>

**Course Policies**

Students are expected to read the material posted on the course web site. They will be encouraged to bring the print-outs of the lecture material and take notes on it in the class where the instructor and students get involve in seminar type of discussion in the class. A list of the reading material for every drug/lecture topic will be posted on the Carmen course web site and students are expected to participate and give their input during the discussion in the class.

During the first week of the class, after the 45 minutes introduction of the contents by the instructor he will lead discussion of the topic in the second and subsequent class. Students can participate by narrating drug experience by any one, peer pressure, impact of movies, research papers or quoting some other publications, Power Point presentation, etc.

**Grading**

The course will be graded satisfactory/unsatisfactory, with at least 70% score needed to get a satisfactory grade.

The grade (100%) will be based on student’s class participation that includes asking a questions, sharing information about the discussion topic verbally or bringing in printed information or digital information (a figure, picture, video, news item about the drug) as mentioned above. The instructor will decide 60% of the grade. Students will decide 40%of grades of their peers. Part of grades by both the instructor and studens will be based on the PowerPoint presentation by the students in the class that will be critiqued by the instructor and the peers. Out of the 60% grade, the instructor’s evaluation will be equivalent to 30% in class discussion and the remaining 30% grade will be decided by the evaluation of the presentation by the students in the class.

The peers will objectively evaluate the topic presented and determine its interest and subject value being discussed. Their 40% evaluation is based on class discussion and the presentations.

**Grade**

The overall grade will be as following:

30% of the grade--class discussion, evaluated by the instructor.

30% of the grade-in class presentation, evaluated by the instructor.

20% of the grade-class discussion, evaluated by peers.

20% of the grade- class presentations, evaluated by peers.

Out of total 100 points, 70% are needed to get **satisfactory** in the class.

**Course policies**

Attendance, class-discussion and presentation are essential for success in this course. All the students are supposed be in the class except those who are permitted for exceptional reasons in advance.

**Academic Integrity**

For all the assignments of this course, the code of Student Conduct of The Ohio State University is in effect. Academic misconduct is defined as: any activity that tends to compromise the academic integrity of the university, or subvert the educational process.

**Students with Disability**

Any student who feels a need of accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office for Disability Services at 614-292-3307 or visit them in Room 150 Pomerene Hall to coordinate reasonable accommodation for students with documented disabilities. You can also visit their web site: <http://www.ods.ohio-state.edu> for more information.

**Weekly Schedule**

***Week 1: Overview of basic concepts***

A review of physiology of the nervous system; how do neurons communicate with each other? Pharmacokinetics (how is a drug absorbed, distributed, metabolized, and eliminated from the body?) and Pharmacodynamics (how does a drug work in the body?). Define neurotransmitters, receptors, agonists, antagonists. All these topics will be discussed in simple language so that first year students can understand without having any background in physiology, biochemistry.

***Students Discussion Topics and Presentations***

***Week 2: Alcohol***

Ethanol: history, pharmacologic effects, calorie content, side effects and toxicity, teratogenic effects, interactions with other drugs, alcoholism.

***Week 3: Tobacco and Nicotine***

Tobacco: history, active ingredients, nicotinic receptors, nicotine addiction, active and passive smoking, smoking and cancer, smoking cessation programs.

***Week 4: Cannabis (marijuana), Cocaine, Amphetamines***

History of marijuana, cannabinoid receptor and active ingredient of marijuana, marijuana smoking and cancer pain, abuse and concurrent illness.

History of cocaine, mechanism of action, cocaine dependence and treatment.

Amphetamine related drugs use in ADHD (Attention-Deficit-Hyperactivity-Disorder), for weight loss; amphetamine dependence.

***Week 5: Performance enhancing drugs such as anabolic steroids and Viagra***

Anabolic steroids: natural hormones, growth promoting effects, exploitation of athletes.

Viagra: Sildenafil, erectile dysfunction, physiology of erection, other Viagra type of drugs.

***Week 6: Drug abuse and treatment***

Extent of drug problem, tolerance, dependence and abstinence, drugs as behavioral reinforcers, drug education and treatment for drug abuse.

***Week 7\*: Student presentation and evaluation***

***Week 8\*: Student presentation and evaluation***

***Week 9\*: Student presentation and evaluation***

***Week 10\*: Student presentation and evaluation***

**\*Topics for student presentations:**

**Presentation topics**

Drug Absorption, Drug Distribution, Drug Metabolism, Drug Elimination, Drug Receptors, Central Nervous System, Neurons, Neurotransmitter, Ethanol, Inhalants, Gamma Hydroxybutyrate, Opioids, Endorphins, Morphine, Heroin, Methadone Maintenance Program, Cannabis, Cocaine, Amphetamines, Methamphetamines, LSD, Phencyclidine, Anabolic Steroids, Drugs for Erectile Dysfunction, Caffeine, Tobacco, Nicotine, Drug Abuse, Tolerance, Dependence and Abstinence, Smoking Cessation Programs, Drugs and Laws.

**Presentations:**

***During weeks 6-10*:** Each week 2-6 students, individually will give a PowerPoint presentation to the class for 10 minutes followed by 5 minute question – answer session. The presentation should include 10-15 slides including animations and video clips. The instructor and other students will evaluate and grade the presentation in the class. Following the presentation in the class, each student will submit their modified PowerPoint presentation for instructor’s grading to the instructor during the final exam week.

In lieu of PowerPoint presentation a student may write one short paper (about two pages) discussing any of the above presentation topics.

**Dr. Tejwani (Biographical Paragraph).**

Dr. Gopi A. Tejwani is an Associate Professor and the ex-Vice Chair in the Department of Pharmacology, College of Medicine, The Ohio State University. He received his Ph.D. degree in Biochemistry from the All-India Institute of Medical Sciences in New Delhi in 1973 and subsequently traveled to the US for postdoctoral training. Dr. Tejwani has been on the faculty of The Ohio State University in Columbus since 1976, where he does research in neuropharmacology and teaches graduate, undergraduate and medical students. Dr. Tejwani has published more than 80 original research papers in biochemistry, enzymology, neuropharmacology and medical education. He has presented his research work at international meetings in more than twenty countries. More than two dozen graduate students, postdoctoral fellows and faculty members have received training in his laboratory. During the last seven years he has received the following teaching awards at OSU.

2004 School of Biomedical Science “Teaching Incentive Award”, College of Medicine

2005 “Excellence in Teaching Award”, College of Medicine, OSU

2006 “Faculty Teaching Award”, College of Medicine, OSU

2006 School of Biomedical Science “Excellence Award in Teaching or Research”

2007 “Distinguished Educator Award”, College of Medicine, OSU

2008 “Excellence in Teaching Award”, College of Medicine, OSU

2008 School of Biomedical Science “Excellence Award in Teaching or Research”

2009 “Excellence in Teach Award” from the IP Committee of the College of Medicine