

USC School of Pharmacy
RXRS 201: The History and Geography of Drugs

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Office Hours: Health Sciences Campus, CHP-140 – Friday 10am – 2pm
University Park Campus, UPC – By appointment, tdchurch@usc.edu

Course Weight: 4 units

Days/Time/Location: Tues, Thurs; 2:00pm-3:20pm; SOS B-46

Catalogue description: Global perspectives; discovery and use of drugs (legal/illegal); poisons. How they helped shape, modify or change history as described in classical literature through present day.

Introduction

Since the beginning of time, humans have sought out or discovered by accident compounds that have medicinal, hedonic (mood-altering) or deleterious (poisonous) effects. These effects were, in part, due to the coevolution between the animal and botanical kingdoms whose efforts to survive gave us compounds that could have medicinal, mood-altering or poisonous effects. The origins of herbal medicine lie in the common empirical experience of humanity, in observing which plants the animals ate when they were feeling sick, and following their example. The societal consequences of improper drug and poison use have been documented as early as 4500 B.C. and attempts to regulate their uses have been documented as early as 2240 B.C. This course will consider the benefits and consequences of drug use (legal and illegal) from both a historical and geographical perspective. Additionally, the course will consider the role of poisons as a political as well as felonious tool. Topics will be presented that highlight how drugs and poisons were used throughout the world to shape, modify or change history.

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Objectives

This course is designed to meet the requirements of the GE H (Global Perspectives: Traditions and Historical Foundations) for undergraduates. Students will explore how humans used drugs and poisons to change the economic, political, cultural and/or social settings of their time. Moreover, this course will examine the historical and cultural foundations of drug use from a contemporary and historical perspective by studying literary, political, economic, philosophical, legal, ethical and religious traditions as they relate to drug use. As an example, the “opium wars” of the nineteenth century between Britain and China and the implications of this historical event is one example of how we will explore links between illegal use of prescription opioids and the increase in accidental opioid overdose deaths. Students will also learn about the historical use and misuse of poisons for good and evil. The Sumerians as far back as 4500 B.C. documented the toxic effects of certain plants, and developed poisons such as curare for hunting. In Greek literature, the death of Socrates in 399 B.C. represented one of the earliest recorded incidents where a poison was used for political reasons. In recent time, polonium-210 was used to kill the Russian spy Alexander Litvinenko. A recent public inquiry concluded that President Putin probably approved the assassination. Differences surrounding the ethics of the development and deployment of poisons and biological agents (for example, as a weapon) will be presented that are designed to lead to lively discussions during class.

Chapters from the core textbook will be supplemented with a variety of source materials including online resources, media outlets and cinema.

Upon successful completion of this course, the student should be able to participate in a thoughtful debate about:

- The historical nature of the discovery of drugs and poisons throughout the world
- Medicines from ancient Egypt
- Medicines in the Classical Age of Greece and Rome
- The historical and recent biological, psychological, social-psychological, and sociological perspectives related to drug use and abuse
- Modern day pharmaceuticals – the good, the bad, the ugly
- The consequences of improper drug use and abuse and its relationship to health, economy, wellbeing and society as presented in the literature.
- The history of the development of forensic toxicology as a discipline to provide evidence of exposure to poisons
- The use of poison to influence history during the Renaissance Era
- Chemical and biological warfare in antiquity and modern day
- Concurrent practice of Eastern and Western medicines

Communication Method

If you have questions or concerns, please contact Dr. Church via email (tdchurch@usc.edu). Your email will be attended as quickly as possible within a 48 hour window. For more urgent or pressing

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issues, please contact Dr. Church via telephone at 323.442.0241.

Evaluation and Grading:

Evaluation will be based on one midterm examination, a final examination, course quizzes, four written reaction / reflection essays and class participation.

<i>Description</i>	Points	Weight
<i>Quizzes 4 (@ 10 pts each)</i>	40 pts	(15%)
<i>Midterm exam</i>	60 pts	(25%)
<i>Final exam (partially cumulative)</i>	100 pts	(35%)
<i>Written Essays (@ 25 pts each)</i>	100 pts	(25%)
Total	300 pts	(100%)

15% Quizzes: There will be 4 quizzes over the course of the semester to count towards their grade. The quizzes will be based on questions from the lecture and from the textbook and will include multiple choice, T/F and fill-in the blank questions.

25% Midterm: There will be 1 midterm for this course that will cover the first 8 weeks of course material. The midterm will consist of a series of questions involving short answers as well as a longer question requiring critical thought and its articulation in written responses. This midterm exam will help students to generate a critical assessment of key topics in this course, to develop a suitable argument, and to convey their ideas and interpretations through the written word.

35% Final: The Final Exam will be in the form of an in-class examination during exam week. The final exam will be composed of two parts, each having equal weight towards the final grade. The first part of the exam will include questions from the lectures and from the textbook in the form of multiple choice, T/F and fill-in the blank questions (10%). The second part of the final examination will consist of short written answers to demonstrate the students' knowledge regarding topics covered in the course (25%). This latter part of the final exam will allow students to express their ideas based on facts derived from the course.

25% Four Short Essays: (each worth 6.25% of your class grade) The short essays will be written outside of class and submitted via Blackboard under the Assignments Tab. These short essays are designed to help students generate a critical assessment of key topics in this course, to develop a suitable argument, and to convey their ideas and interpretations through the written word. The short essays will be response / reaction papers to the course material and will require two things: summarize the material covered in class and provide a reaction to the material. Students are free to choose which topics they wish to write about and must submit 4 response / reaction papers throughout the semester. **No late essays will be accepted for any reason short of a serious, documented emergency.** An official note explaining why you were unable to write the essay will be required for an extension.

Please note, below is the “Approximate” grading scale breakdown. However, this scale is not set in stone and may slightly shift up or down based on overall scores. There are no pluses (+) or minuses (-) assigned to grades in this course.

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Percent	Letter Grade
90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	F

There are no make-up exams. If exceptional circumstances prevent you from attending an exam, your reason for missing it must be accompanied by a written statement from a third party (e.g. a note from a medical doctor).

Notes, books, calculators, electronic dictionaries, regular dictionaries, cell phones or any other aids are not allowed during exams.

Students will be asked to complete an anonymous critical evaluation of the course at its completion.

Course Readings

Required Readings (selected, short, easy to read chapters)

Antonio Escobedo. (1999). *A brief history of drugs: from the stone age to the stoned age*. Simon and Schuster.

Supplemental Readings (selected essays, videos, and other media)

Other topical materials including but not limited to the syllabus, supplemental reading assignments and additional handouts will be posted on <http://blackboard.usc.edu/>. Students will also be encouraged to use the online discussions sessions (via Blackboard) as an additional learning tool.

Course Outline

This course will be in the format of a directed seminar/lecture under the guidance of the instructor for the specific session. During each biweekly session the instructor will engage the students with questions and draw comments or interpretations primarily based on the assigned reading. Students are expected to ask questions and participate in an interactive fashion. Because this is an area of rapid change in policies, the readings may vary from one term to the next. Additional readings for each section that may be of added use are listed in the table below.

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Week & Date	Topic	Subtopics to be Included	Assigned and Supplemental Reading
Week 1 <i>Jan 14, 16</i>	Dr. Church Introduction: expectations and goals of this class.	Outline of course and introduction to Pharmacology. Course expectations and review of writing assignment / submission schedule. 14 Jan – Introduction 16 Jan – Course overview and expectations	What is Pharmacology: https://www.youtube.com/watch?v=PQ2m-nrf2z8&feature=youtu.be Basics on Pharmacokinetics (PK) / pharmacodynamics (PD): https://www.youtube.com/watch?v=NKV5iaUVBUI Very brief overview of PK and PD: https://www.youtube.com/watch?v=tobx537kFaI
Week 2 <i>Jan 21,23</i>	Dr. Church Remote Antiquity	Humans discover the medicinal and hedonic effects of plants. The discovery of opium The discovery of fermented plants – wine in the old testament 21 Jan – Paleolithic Age 23 Jan – Neolithic Age	A Brief History of Drugs Chapter 1 “Pharmacological Influences on the Neolithic Transition” Wadley, G and Hayden B (2015) – on Blackboard
Week 3 <i>Jan 28, 30</i> Quiz #1 – Jan 30	Dr. Church Ancient Egyptian Medicine	The healers from pharaonic times are poorly documented as compared with those from Greece and Rome -- the understanding and use of medicines is only partially understood. 28 Jan – Dynastic Egypt 30 Jan – Ptolemaic Kingdom	“Herbal Medicine in Ancient Egypt” Aboelsoud, NH (2010) – in Blackboard

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Weeks 4 <i>Feb 4, 6</i>	Dr. Church Graeco-Roman Medicine	Understand the early development of medicines in Ancient Greece and Rome Gain insights into the practices of Greek and Roman healers regarding their understanding of disease and remedies 4 Feb – Greece 6 Feb - Rome	A Brief History of Drugs Chapters 2 & 3 http://www.greekmedicine.net/therapies/Herbal_Medicine.html
Week 5 <i>Feb 11, 13</i> Quiz #2 – 13 Feb	Dr. Church Silk Road Drug Exchanges The Americas	Discuss the ancient networks of trade of drugs, ideas, and culture. Understand how Arabian civilization curated medical knowledge after the fall of Rome. Introduction to Ayurvedic medicine. Introduction to Nei-Jing and Daoist herbal medicines. The conquistadors and the colonizers. Maya, Aztec, and Inca Medicines: Herbs of the America’s for healing, pleasure and sacrifice. 11 Feb – Silk Road 13 Feb –The Americas	A Brief History of Drugs Chapters 4 & 5 “Physicians of Ancient India” Saini, A (2016) – in Blackboard “The Use and Abuse of Wine in Ancient China” Poo, MC (1999) – in Blackboard Aztec Medicine: http://ambergiscaye.com/pages/mayan/aztec_medicine.html

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Week & Date	Topic	Subtopics to be Included	Assigned and Supplemental Reading
Week 6 <i>Feb 18, 20</i>	Dr. Church Maritime Empires The Opium Wars	The Age of Discovery led to geographical and political conflicts over trade in an era where pirates vied for their share of the bounty. Two armed conflicts in China in the mid-19th century between the forces of Western countries and of the Qing dynasty. 18 Feb – Maritime Empires 20 Feb – Opium Wars	A Brief History of Drugs Chapter 8
Week 7 <i>Feb 25, 27</i>	Dr. Church Dr. Culty 19 th Century Renaissance Poisons	Understand the development of assays to measure poisons Understand how forensic toxicology has progressed with time to enable determination of cause of death Understand how poisoning developed as an art during the Renaissance Era and how the Borgia and de'Medici families influenced history The influence of dye companies; chemists, pharmacists and doctors and their influence on psycho active drugs. "Snake Oil" 25 Feb – 19 th Century, Quackery (Dr. Church) 27 Feb – Renaissance Poisons (Dr. Culty)	A Brief History of Drugs Chapter 9
Week 8 Mar 3	Review Game for Mid Term		
Week 8 Mar 5	Mid Term Exam		

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Week & Date	Topic	Subtopics to be Included	Assigned and Supplemental Reading
Week 9 <i>Mar 10, 12</i> Quiz #3 – 12 Mar	Dr. Church 19 th Century 20 th Century	Scientific advances of the 19 th Century. Regulation of medical products in the 20 th Century 10 Mar – 19 th Century, Scientific Innovation 12 Mar – 20 th Century, Regulations	A Brief History of Drugs Chapter 13 & 14 “One hundred years of drug regulation: where do we go from here”, Woosley (2013) – uploaded to Blackboard
SPRING RECESS (16 Mar – 20 Mar)			
Week 10 <i>Mar 24, 26</i>	Dr. Church Drug enforcement, legal action, and ethical considerations of the 20 th and 21 st Centuries.	An overview of drug enforcement. This will include discussions of legal and ethical concerns. These events led to the establishment the Drug Enforcement Agency. 24 Mar – Legal Actions 26 Mar – Ethical Consequences	Required reading to prepare for class lecture: “Drug Enforcement in the United States: History, Policy, and Trends”, Sacco (2014) – uploaded to Blackboard
Week 11 <i>Mar 31, Apr 2</i>	Dr. Jakowec Pain and Opioids Sugar, The Worldwide Addiction	Opioids were once the cornerstone in treating severe disabling pain and are now known to underlie an epidemic of substance use disorders and overdose deaths. Is sugar addictive? Eating sugar triggers production of natural opioids in your brain. 31 Mar – Pain and Opioids (Jakowec) 2 Apr – Sugar, The Worldwide Addiction (Jakowec)	“The dynamic interaction between pain and opioid misuse”, Wilson-Poe (2018) – uploaded to Blackboard “Sugar addiction: the state of the science”, Westwater (2016) – uploaded to Blackboard

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Week & Date	Topic	Subtopics to be Included	Assigned and Supplemental Reading
Week 12 <i>Apr 7, 9</i> Quiz #4 – 9 Apr	Dr. Church Synthetic music and drugs	Music festivals and raves have grown more popular in recent years. Festival drugs, music, and synthetic drugs will be discussed. 6 Apr – 1970s and Disco 8 Apr – Raves and EDM	“Adolescents and Drug Abuse: 21 st Century Synthetic Substances”, Yin (2019) – uploaded to Blackboard
Week 13 <i>Apr 14, 16</i>	Dr. Church 1980s Drug Panic Chemical and biological warfare in antiquity and modern day	The big drug scare of 1980s and how media and politics changed drug education policy. Intense public concern about drug abuse between 1986 and 1989 – the new synthetics on the block. Discuss the ethical considerations of the use of chemical agents on populations and the data collected. 14 Apr – 1980s Drug Panic 16 Apr – Duck and Cover	“The American drug panic of the 1980s: social construction or objective threat?”, Goode (1990) – uploaded to Blackboard A Brief History of Drugs, Chapter 15
Week 14 <i>Apr 21, 23</i>	Dr. Church Dr. Davies History of the Diagnosis of Addiction Alcohol Clinical Case Review	Clinical Case review of alcohol at LAC+USC Understand the development and uses of chemical and biological warfare 21 Apr – Diagnosis of Addiction (Church) 23 Apr – Alcohol Case Review (Davies)	“History of the Concept of Addiction” Nathan, P. (2016) – uploaded to Blackboard
Week 15 <i>Apr 28, 30</i>	Dr. Church Legacy of Drugs Review for Final	The legacy of synthetic drugs and the future of human drug consumption. 27 Apr – Legacy of Drugs 29 Apr – Review for Final Exam	
<i>Final Exam Week</i> <i>Thursday, 7 May; 2pm-4pm</i>			

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STATEMENT ON ACADEMIC CONDUCT AND SUPPORT SYSTEMS

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 / Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

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Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

uscsa.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

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Short Essays (4 in total)

Grading will be based upon the quality of your analysis and how clearly you present the information within your essay. You are expected to incorporate key terms and concepts you have learned in this course. Points will be deducted for grammar, punctuation, spelling, and technical errors. You should start with a brief outline for your essay, create a rough draft, and then produce a final draft. **The final draft of each essay is the only document you need to submit.**

These are reaction / response essays to the material covered in lecture; your essays must consist of:

- A. **An Introduction paragraph**, which contains a minimum of two sentences that introduces your answer to the reader and establishes a foundation for the remainder of your answer.
- B. **Body paragraph(s)**, which present the major content of your answer. Include at least one body paragraph with three or four sentences within the paragraph.
- C. **A conclusion paragraph**, which contains a minimum of two sentences and summarizes the major points contained in the body paragraphs.

In writing a good reaction paper, it is not enough to simply praise the strengths or criticize the weakness of the lecture or reading material. More than that, students must be able to justify their “reaction”. It is important to provide the reasons why, for example, the information related to prohibition was compelling, or why the argument of a particular historical figure resonates a strong message with you.

Format Requirements

Carefully follow the format requirements below. Any variation will result in lost points or no credit.

- Margins = 1 inch
- Font type = Arial, Times New Roman, or any Sans type font
- Font size = 11 point
- **2 pages (double spaced) – (references not included)**
- Use week number to indicate your topic (e.g. Week 3 – Rome)
- Filename should have your last name and first name (e.g. **Trojan Tommy ShortEssay1**)
- Acceptable file formats:
 - Word (DOC or DOCX)
 - **No other formats will be accepted!**

Direct Quotations

These essays are expected to be written in your own words therefore no more than 5% of the essay should be quoted or copied word – for – word. If you submit an essay with more than 5% quoted material, you will be penalized one point for each percentage above 5%. If you submit an essay with more than 15% quoted material, you will receive an automatic zero.

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APA Citations

THIS IS NOT AN APA paper; however, you are expected to demonstrate understanding of the rules of plagiarism and expected to use APA style citations appropriately, which include in-text and full citations with a Reference page.

You are expected to cite at least 2 sources (class books and articles, articles from journals, books, etc) per essay. You will be penalized -5 points for each missing resource.

Do NOT use Wikipedia or any other similar form of wiki to write these essays.

General Topics and Weekly Submission Dates

(Essays are due the week after their presentation date, see table below for submission dates)

Essay Topic	Essay Topic	Due Date
Week Number		<i>(by 2pm)</i>
2	Paleolithic and Neolithic Ages	28 Jan
3	Dynastic Egypt and Ptolemaic Kingdom	4 Feb
4	Greco-Roman Ethics and Blood	11 Feb
5	Silk Road and The Americas	19 Feb
6	Renaissance Poisons	25 Feb
7	Maritime Empires & Opium Wars	3 Mar
9	Industrial Revolution	24 Mar
10	Legal and Ethical Issues	31 Mar
11	Opioids and Sugar	7 Apr
12	Disco and EDM	14 Apr
13	Panic and Modern Warfare	21 Apr

Students will sign up to submit topics through Blackboard by going to the Content tab; selecting the Reaction Paper Sign-up link.

Students are required to submit 4 reaction / response papers based on the weekly class topics summarized in the table above. Once the due date has passed, no papers will be accepted for that topical week. Which means an essay on prehistoric drugs (Week 2) cannot be submitted when we are in Week 9.

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General Essay Template

Introduction
<p>The introduction serves two key functions –</p> <ol style="list-style-type: none">1) it gets your reader interested in the topic and encourages them to read your argument; and2) it acts as a roadmap of what you are going to say and provides the overarching point you plan on making – i.e. your thesis statement. <p style="text-align: center;">All topic sentences should relate to the thesis statement.</p>

Body Paragraph 1 <i>(repeat format for each of the body paragraphs)</i>
<p>Topic Sentence</p> <ul style="list-style-type: none">• Evidence... <i>Citation -</i>• Evidence... <i>Citation -</i>• Evidence... <i>Citation -</i>
<ul style="list-style-type: none">• Analysis...

Concluding Paragraph
<p>In a concluding paragraph, you must summarize what you have written about in your essay.</p> <p>You should bring back your main statement.</p> <p>The conclusion should leave the readers with something to consider.</p> <p>Concluding paragraphs should convey a sense of completeness and closure to the topics discussed.</p> <p>There should be a sense of the lingering possibilities of the topic, perhaps its broader meaning... or its implications.</p> <p>The final paragraph should close your topic without closing it off.</p>

Paragraph Transitions
<p>Do the paragraphs build directly on the one before? How?</p>

References – use in-text citations throughout your essay and provide a complete Works Cited / Bibliography at the end.