

RXRS 418: More than Prescriptions: An Integrative Approach to Modern Healthcare

Previous Title: Plant Medicines in Modern Medicine

Instructors:

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Course Weight: 4 units

Days/Time/Location: Tuesday, Thursday: 11:00 – 12:20PM (Online)

Introduction

As 21st century health care evolves, there is a shift from a disease-based approach to a more patient-centered system. This transition aims to address a variety of factors including biochemical/physiology individuality, adherence to therapies, lifestyle, and social determinants of health. In addition to allopathic pharmacotherapy approaches (prescription and over the counter drugs), the National Institute of Health has also designated the National Center for Complementary and Integrative Health (NCCIH) to assess the current uses and scientific evidence for these treatment modalities. Integrative medicine combines conventional medical approaches with complementary medical approaches in an organized, evidence-based, approach. It has been defined as a principle of medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, informed by evidence, and makes use of all appropriate therapeutic and lifestyle approaches, health-care professionals, and disciplines to achieve optimal health and healing. Many of these alternative/complementary approach include uses of herbals, herbal extracts, vitamins, minerals, and other nutraceutical supplements. Interestingly, many prescription drugs were originally isolated and purified from plants and other natural sources, especially drugs used for

chronic diseases, cancer, and anti-infectives. To date, many disease states require a comprehensive multimodal approach to achieve health goals, and the market for nutraceuticals is estimated at 117 billion USD. This course will explore dietary supplements, herbal-based medicines, and nutraceuticals from a pharmacologic and evidence-based perspective. Students will be given the opportunity to critically assess and integrate pharmacological principles in evaluating the efficacy and safety of these agents and explore the role of these agents in clinical applications.

Objectives

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

- Compare the requirements for evidence of effectiveness and safety of dietary supplements (herbal compounds, nutraceuticals, etc.) compared to FDA-approved pharmaceuticals.
- Discuss drug interactions of supplements, herbs, nutraceuticals, and pharmaceuticals
- Discuss potential adverse effects of supplements in terms of bleeding risks, liver injury, addiction, or cardiovascular emergencies.
- Evaluate the role of supplements in health and wellness from an evidence-based perspective
- Compare and contrast advantages/disadvantages of utilizing one type of supplement over another
- Critique and debate nutritional supplements and their roles through various health conditions

Evaluation and Grading:

Evaluation will be based on class participation, quizzes, one midterm exam, one final exam, and one group presentation.

| <i>Description</i> | <i>Points</i> |
|--|----------------|
| <i>3 Quizzes @ 30 pts each</i> | 90 pts |
| <i>Discussion Board Participation</i> | 20 pts |
| <i>Spot the Snake Oil Interactive Activity</i> | 100 pts |
| <i>Midterm Exam</i> | 80 pts |
| <i>Final Exam</i> | 110 pts |
| Total | 400 pts |

Attendance at all classes is expected. It is expected that the students read the assigned papers prior to the lecture, prepare for group presentations and be prepared to discuss the background, current understanding, treatments, and gaps in knowledge for the topic in each lecture.

Quizzes: There will be 3 quizzes over the course of the semester to count towards the overall grade. The quizzes will be based on questions from the lecture, readings, and content discussed in class. Quizzes will include multiple-choice, T/F, and fill-in-the-blank questions.

Midterm: There will be 1 midterm for this course that will cover the first 8 weeks of course material. The midterms will also include multiple-choice questions T/F questions fill-in-the-blank questions and possibly short answers. This midterm exam will help students to generate a critical assessment of critical topics in this course, to develop a suitable argument, and to convey their ideas and interpretations.

Final: The Final Exam will be administered during exam week. The final exam will be composed of two parts, one to assess comprehension of course content and the latter to

assess application knowledge of these principles. The final exam (110 points) will consist of multiple choice and T/F questions as well. The final exam will be cumulative but will emphasize material related to the application and evaluating scientific merit of supplements

Spot the Snake Oil: Starting Week 4 of class and continuing once a week (Thursday) until the end of the semester, students will participate in an educational activity to try and spot the “trick” or “snake oil” therapeutic hiding among three established, evidence-based therapeutics for a given disease state. The therapeutics will be specific for disease state that is discussed in the first lecture of each week (Tuesday). For example, Week 4’s topic is Insomnia and Agents for Sleep, so the Thursday activity will focus on therapeutics associated with addressing this disease state. A detailed description on of the assignment is found on Blackboard under Assignment. Each session is 10 points each.

Discussion Board Participation: Each student will participate in Discussion Board posts during the semester or other deliverable assignments on Blackboard. The points will be allocated below

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.

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.

| Percent | Letter Grade |
|-----------|--------------|
| 92-100% | A |
| 90-91% | A- |
| 88-89% | B+ |
| 82-87% | B |
| 80-81% | B- |
| 78-79% | C+ |
| 72-77% | C |
| 70-71% | C- |
| 60-69% | D |
| Below 60% | F |

Class Policies Regarding Class Discussions and Etiquette

An overview of the class policies and how they relate to the discussions and interactions that will occur in this class can be found below. We expect each student to review, understand and adhere to these policies.

Respect

- Listen actively and attentively
- No name calling or other character attacks
- Always use a respectful tone
- Be aware of the fact that tone of voice and body language are powerful communicators. Some postures or facial expressions can silence, intimidate, or hurt your classmates (e.g. crossed arms, eye rolls). Other postures or facial expressions can show you are listening respectfully (e.g. making eye contact, staying quiet, nodding).

Constructiveness

- If you wish to challenge something that has been said, challenge the idea not the individual sharing it
- Ask for clarification if you are confused
- Commit to learning, not debating

Inclusivity

- Try not to silence yourself out of concern for what others will think about what you say
- Try not to let your question (or answer) run on. Give others the chance to speak, too.
- Do not remain silent. Make sure to contribute to the discussion
- Take responsibility for the quality of the discussion

Online learning Etiquette

- If it is not possible to have your webcam on during the entire class, do your best to have it on when speaking
- Turn off your microphone when not speaking
- If you need to step away from your computer during class (e.g. get a drink of water, use the bathroom, attend to a family member/pet) please do so quietly and without disturbing your classmates. Return to the class when you can.
- Be aware the contents of conversations typed into the chat box, even private conversations, are visible by the instructors

Course Readings

Required Readings

The text is mandatory for this course as it will greatly improve your grasp on the course content. The text is fully available through USC Library and free of cost. Login through USC is required for access. The chapters identified for your assigned reading in the text will support your learning process throughout the semester.

[Integrative Medicine by David Rakel, MD](#)

Edition: 4th ISBN-10 : 0323358683

Publisher(s): Elsevier; 4th edition (April 27, 2017)

Supplemental Readings

Supplemental readings are posted on the course website (<http://blackboard.usc.edu/>). These readings have been compiled from a variety of source materials to provide you with current evidence-based practices from the field of pharmacology and augment lecture materials.

Selected chapters from the textbook and supplemental readings should be read according to the course outline below; these materials are relevant for group presentations, quizzes, and exams.

Course Outline

This course will be in the format of a directed 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.

The course schedule is as follows:

| Week | Date | Topic | Lecturer |
|------|-----------|---|-----------|
| 1 | 1/19/2021 | Class Orientation. History of Plant-Based Medicine <ul style="list-style-type: none">Allopathic, Osteopathic, Naturopathic, Integrative Medicine, Functional Medicine Assigned Readings Chapter 1: Philosophy of Integrative Medicine Chapter 4: The Whole Health Process Chapter 101: Motivational Interviewing | T. Phan |
| 1 | 1/21/2021 | Introduction: How Pharmacologic Principles are Integrated in Non-Allopathic Medicine <ul style="list-style-type: none">Pharmacodynamics and Pharmacokinetics Assigned Reading Chapter 104: Prescribing Botanicals Chapter 105: Prescribing Probiotics | T. Phan |
| 2 | 1/26/2021 | Drug Interactions | T. Phan |
| 2 | 1/28/2021 | Toxicity | T. Phan |
| 3 | 2/2/2021 | Regulation of Pharmaceuticals Quiz 1 – Available on BlackBoard from 3-8pm (California Time) | T. Church |
| 3 | 2/4/2021 | Aroma Therapy: Taking Advantage of Olfaction | T. Phan |
| 4 | 2/9/2021 | Insomnia and Agents for Sleep Assigned Reading Chapter 9: Insomnia | T. Phan |
| 4 | 2/11/2021 | In Class Interactive Activity - Spot the Snake Oil Learning Opportunity Regulatory Science: East Asian Perspectives - Eunjo Pacifici with Terry Church on "Eastern Medicines, Western Regulation" (ZOOM 5 - 6PM) | |

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| 5 | 2/16/2021 | Gut Health Assigned Reading: Chapter 42. Gastroesophageal Reflux Disease Chapter 43. Peptic Ulcer Disease Chapter 46. Constipation | T. Phan |
| 5 | 2/18/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 6 | 2/23/2021 | Liver and Alcohol Assigned Reading Chapter 83. Alcoholism and Substance Abuse | D. Davies |
| 6 | 2/25/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 7 | 3/2/2021 | Stress and Mood Assigned Reading: Chapter 5. Depression Chapter 6: Anxiety Chapter 39. Adrenal Fatigue Quiz 2 – Available on BlackBoard from 3-8pm (California Time) | T. Phan |
| 7 | 3/4/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 8 | 3/9/2021 | Alertness and Attention Assigned Reading: Chapter 7: Attention Deficit Disorder | T. Phan |
| 8 | 3/11/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 9 | 3/16/2021 | Pain Management Assigned Reading Chapter 12. Headache Chapter 47. Fibromyalgia Chapter 49. Rheumatoid Arthritis Chapter 67. Chronic Low Back Pain | T. Phan |
| 9 | 3/18/2021 | Midterm Exam | |
| 10 | 3/23/2021 | Wellness Days | |
| 10 | 3/25/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 11 | 3/30/2021 | Cardiovascular Health Assigned Reading Chapter 24. Hypertension Chapter 26. Coronary Artery Disease Chapter 27. Dyslipidemia | A. Burkhardt |
| 11 | 4/1/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 12 | 4/6/2021 | Diabetes | A. Burkhardt |

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|-------|------------|---|--------------|
| | | Assigned Reading Chapter 32. Insulin Resistance and the Metabolic Syndrome Chapter 33. Diabetes Mellitus | |
| 12 | 4/8/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 13 | 4/13/2021 | Immune Health: Infections Assigned Reading Chapter 18. Viral Upper Respiratory Infection Chapter 19. HIV and AIDS Chapter 22. Urinary Tract Infection (UTI) Quiz 3 – Available on BlackBoard from 3-8pm (California Time) | A. Burkhardt |
| 13 | 4/15/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| 14 | 4/20/2021 | Immune Health Assigned Reading Chapter 29. Asthma Chapter 30. The allergic patient | A. Burkhardt |
| 14 | 4/22/2021 | Wellness Days | |
| 15 | 04/27/2021 | Cancer Assigned Reading Chapter 78. Breast Cancer Chapter 79. Lung Cancer | A. Burkhardt |
| 15 | 4/29/2021 | In Class Interactive Activity - Spot the Snake Oil | |
| FINAL | FINAL | FINAL | |

Statement on Academic Conduct and Support Systems

Academic Dishonesty

Academic dishonesty undermines the hard work of all students in the class who take responsibility for their learning. We encourage you to speak with the instructors if you learn of any incidents of academic dishonesty. Academic dishonesty includes, but is not limited to, cheating off another student during an exam, knowingly allowing another student to copy off your exam, misrepresentation or bribing someone for an academic advantage.

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, <http://policy.usc.edu/scientific-misconduct>.

This serves as your official notification of these policies and our expectation that you will adhere to them. Commit academic dishonesty at your own risk. Do work that you will be proud of and stand by your performance.

Support Systems:

Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call

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

National Suicide Prevention Lifeline – 1 (800) 273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on-call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class.
equity.usc.edu

Bias Assessment Response and Support

Incidents of bias, hate crimes, and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs

Provides certification for students with disabilities and helps arrange relevant accommodations.
dsp.usc.edu

Student Support and Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa

Diversity at USC

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students.
diversity.usc.edu

USC Emergency Information

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour

Supplement: Zoom and Blackboard

Zoom

[Zoom](#) is a videoconferencing application that enables audio and video conferencing between multiple users on both desktop computers and mobile devices. It can allow faculty to host class lectures, discussions, share screens and files, and chat with students using a PC, tablet, or even a cell phone equipped with a camera. Zoom is available to all faculty and students at no cost.

- Instructors may host live class sessions on Zoom at the same day and time as their regular class.
- Instructors are required to [record all Zoom lectures](#) and discussions for ADA (Americans with Disabilities Act) compliance, but also to accommodate students who may not be able to keep to the original class schedule.

Links to the recordings of lectures will be posted and organized in Blackboard as soon as they are available.

1. Getting Started with Zoom:

- You might be required to use Zoom in this course, please familiarize yourself with it by thoroughly reading all of the materials and [the step-by-step instructions](#).
- You will access the Zoom meeting space in one of two ways:
 1. Log in via blackboard after you have followed the instructions to initially download, install, and login. Then enter the meeting by going to the link **USC Zoom Meetings** in the left-hand navigation pane. You will need to click the “Join” button next to the classroom for the time set for the meeting.
 2. Copy and paste the URL (or click on the web link) provided by your instructor at the time specified for the meeting. Launch the app (after initially downloading, installing, and logging in), and you will enter the meeting immediately.
- You may choose to use Zoom on your mobile device (phone or tablet).

2. Things to Know About Zoom:

- Because you sign in using your USC information, you have your own profile in Zoom.
- Attendance and participation can be tracked using your USC profile.
- You can find the privacy and accessibility policies for Zoom by clicking on the Learner Support tab in the left-hand navigation pane of your Blackboard course.

Blackboard

[Blackboard](#) is the University's Learning Management System (LMS) used by instructors across campus to distribute course materials, communicate with students in discussion boards, and to collect and assess student work through assignments, quizzes, and tests. A Blackboard course is created for every course at USC and should be the primary tool used for classroom management and communication.

Visit <https://blackboardhelp.usc.edu> to learn more about the various functions of Blackboard.