

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

**Instructors:**

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**Course Weight:** 4 units

**Days/Time/Location:** Tuesday, Thursday: 11:00 AM – 12:20 PM CPA 258

**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 (@ 10 points each)</i>	100 pts
<i>Midterm Exam</i>	80 pts
<i>Final Exam</i>	110 pts
<b>Total</b>	<b>400 pts</b>

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. The quizzes will be offered asynchronously from 3-8PM PDT/PST on Blackboard. Students will have one opportunity to take the exam during this testing window.

**Midterm:** There will be 1 midterm for this course that will cover the first 6 weeks of course material. The midterm will include multiple-choice questions, T/F questions, fill-in-the-blank questions and 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 will include multiple-choice

questions, T/F questions, fill-in-the-blank questions and short answers. 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.

### **Late Work Policy**

Assignments that are submitted past the due date/time will be eligible for a maximum of 80% credit in the first 24 hours that they are late. For each subsequent week, an additional 5% credit will be deducted from the possible score (i.e. an assignment that is submitted 2 weeks late will be worth a maximum of 75% total points, an assignment that is submitted 3 weeks late will be worth a maximum of 70% total points, etc).

### **Alternative Assignment for In-Class Activity**

Students with University approved absences from in-class activities will have the opportunity to complete an Alternative Assignment for full credit. Students should contact the course coordinators to determine if they are eligible to complete this assignment. The Alternative Assignment Description and Rubric can be found on the course Blackboard page.

**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.

<b>Percent</b>	<b>Letter Grade</b>
<b>92-100%</b>	<b>A</b>
<b>90-91%</b>	<b>A-</b>
<b>88-89%</b>	<b>B+</b>

<b>82-87%</b>	<b>B</b>
<b>80-81%</b>	<b>B-</b>
<b>78-79%</b>	<b>C+</b>
<b>72-77%</b>	<b>C</b>
<b>70-71%</b>	<b>C-</b>
<b>60-69%</b>	<b>D</b>
<b>Below 60%</b>	<b>F</b>

### **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 you 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 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	1/10/2023	<b>Class Orientation. History of Plant-Based Medicine</b> <ul style="list-style-type: none"><li>Allopathic, Osteopathic, Naturopathic, Integrative Medicine, Functional Medicine</li></ul> <b>Assigned Readings</b> Chapter 1: <a href="#">Philosophy of Integrative Medicine</a> Chapter 4: <a href="#">The Whole Health Process</a> Chapter 101: <a href="#">Motivational Interviewing</a>	T. Phan
1	1/12/2023	Reading and Interpreting Scientific Literature Using the evidence rating scale for Spot the Snake Oil  <b>Sign up on Blackboard for Spot the Snake Oil by 11:59PM PST.</b>	A. Burkhardt
2	1/17/2023	<b>Introduction: How Pharmacologic Principles are Integrated in Non-Allopathic Medicine</b> <ul style="list-style-type: none"><li>Pharmacodynamics and Pharmacokinetics</li></ul> <b>Assigned Reading</b> Chapter 104: <a href="#">Prescribing Botanicals</a>	T. Phan

		Chapter 105. <a href="#">Prescribing Probiotics</a> <a href="#">Using the Evidence-Versus Harm Grading Icons</a>	
2	1/19/2023	Drug Interactions and Considerations When Using Supplements.	T. Phan
3	1/24/2023	Regulation of Pharmaceuticals <b>Quiz 1 – Available on Blackboard from 3-8pm PDT</b>	T. Church
3	1/26/2023	Aroma Therapy: Taking Advantage of Olfaction	T. Phan
4	1/31/2023	Insomnia and Agents for Sleep <b>Assigned Reading:</b> Chapter 9. <a href="#">Insomnia</a>	T. Phan
4	2/02/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
5	2/07/2023	Gut Health <b>Assigned Reading:</b> Chapter 42. <a href="#">Gastroesophageal Reflux Disease</a> Chapter 43. <a href="#">Peptic Ulcer Disease</a> Chapter 46. <a href="#">Constipation</a>	T. Phan
5	2/09/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
6	2/14/2023	Liver and Alcohol <b>Assigned Reading:</b> Chapter 83. <a href="#">Alcoholism and Substance Abuse</a>	D. Davies
6	2/16/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
7	2/21/2023	The UnWell Side of Supplements: Toxicity	T. Phan/Resident
7	2/23/2023	<b><u>MIDTERM EXAM – IN CLASS</u></b>	
8	2/28/2023	Stress and Mood <b>Assigned Reading:</b> Chapter 5. <a href="#">Depression</a> Chapter 6: <a href="#">Anxiety</a> Chapter 39. <a href="#">Adrenal Fatigue</a>	T. Phan
8	3/02/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
9	3/07/2023	Alertness and Attention <b>Assigned Reading:</b> Chapter 7: <a href="#">Attention Deficit Disorder</a> <b>Quiz 2 – Available on Blackboard from 3-8pm PDT</b>	T. Phan
9	3/09/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
10	3/14/2023	<b>Spring Break – NO CLASS</b>	
10	3/16/2023	<b>Spring Break – <u>NO CLASS</u></b>	
11	3/21/2023	<b>Pain Management</b> <b>Assigned Reading</b> Chapter 12. <a href="#">Headache</a>	

		Chapter 47. <a href="#">Fibromyalgia</a> Chapter 49. <a href="#">Rheumatoid Arthritis</a> Chapter 67. <a href="#">Chronic Low Back Pain</a>	
11	3/23/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
12	3/28/2023	Cardiovascular Health <b>Assigned Reading</b> Chapter 24. <a href="#">Hypertension</a> Chapter 26. <a href="#">Coronary Artery Disease</a> Chapter 27. <a href="#">Dyslipidemia</a>	A. Burkhardt
12	3/30/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
13	4/04/2023	Insulin Resistance Disorders <b>Assigned Reading</b> Chapter 32. <a href="#">Insulin Resistance and the Metabolic Syndrome</a> Chapter 33. <a href="#">Diabetes Mellitus</a>	A. Burkhardt
13	4/06/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
14	4/11/2023	Immune Health: Infections <b>Assigned Reading</b> Chapter 18. <a href="#">Viral Upper Respiratory Infection</a> <a href="#">Chapter 19. HIV and AIDS</a> Chapter 22. <a href="#">Urinary Tract Infection (UTI)</a>  <b>Quiz 3 – Available on Blackboard from 3-8pm PST</b>	A. Burkhardt
14	4/13/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
15	04/18/2023	Immune Health: The Allergic Patient <b>Assigned Reading</b> Chapter 29. Asthma Chapter 30. The allergic patient	A. Burkhardt
15	4/20/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
16	4/25/2023	Cancer <b>Assigned Reading</b> Chapter 78. <a href="#">Breast Cancer</a> Chapter 79. <a href="#">Lung Cancer</a>	A. Burkhardt
16	4/27/2023	<b>In Class Interactive Activity - Spot the Snake Oil</b>	
	5/09/2023	<b>Final Exam</b> <b>Tuesday, May 9 from 11 AM to 1 PM – In Class</b>	

### **Course Content Distribution and Synchronous Session Recordings Policies**

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

### **Statement on Academic Conduct and Support Systems**

#### **Academic Integrity:**

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

#### **Students and Disability Accommodations:**

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to



generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at [osas.usc.edu](https://osas.usc.edu). You may contact OSAS at (213) 740-0776 or via email at [osasfrontdesk@usc.edu](mailto:osasfrontdesk@usc.edu).

### **Support Systems:**

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

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

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

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.

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

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

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

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

[Diversity, Equity and Inclusion](#) - (213) 740-2101

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

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) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or [otfp@med.usc.edu](mailto:otfp@med.usc.edu)

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

## **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.