

**CHP 450: Complementary and Alternative Therapies: An Evidence-Based Approach**  
**Fall 2021**

**Credits:** 2  
**Meeting Times:** Asynchronous, online. YuJa videos will be available in the course Blackboard.  
**Prerequisite:** PHRM 480 (C or better) or Nursing 210 (C or better) or equivalents  
**Textbook/Resources:** None required  
**Faculty:** Donald Miller, PharmD  
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Office hours: Wednesdays 2-3 p.m., or drop-in whenever!

**Course Description:**

This course is designed to provide health professions students with an overview of each form of complementary and alternative medicine (CAM) commonly practiced in the United States. Students will develop knowledge, skills, and practical tools necessary to understand and evaluate CAM, and provide recommendations for appropriate use to patients or other health care professionals. While specific products will be discussed when appropriate, the emphasis is on broad systems of treatment.

**Instructional Methods:**       Lecture (YuJa)  Discussion Boards    Self-Directed Learning

In addition to instructor lectures, each class will have a discussion board for questions and discussion. Each student will lead their own presentation for one short, self-selected, topic.

**Pharmacy Ability Based Outcomes Addressed:**

**1. Foundational Knowledge**

Students will be able to develop, integrate, and apply knowledge from the foundational sciences (biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences) to explain drug action, solve therapeutic problems, and evaluate scientific literature, and advance population health and patient-centered care.

**Specific Competencies:**

1.3 Critically analyze scientific literature related to drugs and disease to enhance clinical decision making.

1.5 Identify and critically analyze emerging theories, information, and technologies that may impact patient-centered and population based care.

**2.3 Health and Wellness**

Students will be able to design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness

**Specific Competencies:**

2.3.2 Provide prevention, intervention, and educational strategies for individuals and communities to improve health and wellness.

**Course Objectives:**

1. Describe the state and federal regulatory frameworks for the practice of different forms of CAM (Pharmacy ABO 1.5).
2. Locate appropriate resources and references on CAM therapies (ABO 1.3).
3. Describe the theories and body of scientific evidence supporting the safety, efficacy and appropriate use of specific CAM practices and therapies (ABO 1.5).
4. Identify knowledge gaps in the scientific evidence for different forms of CAM (ABO 1.3)
5. Given a patient scenario involving the current or desired use of a CAM, develop an evidence-based recommendation for the patient (ABO 2.3.2).

### Approach to Each Topic

As much as possible, each form of therapy will be reviewed in the following outline:

- Definition, history, and origins
- Evolution in the practice over time
- Current practitioner licensing, accreditation or regulation
- Is it self-described as complementary or alternative to mainstream medicine?
- Any distinct forms and branches within the framework
- Theoretical basis and evidence in support of theory
- Unique diagnostic frameworks (e.g. saliva or hair testing, etc.)
- Evidence of efficacy for specific claims
- Evidence of harms
- When and how to recommend

### Planned Topics:

Each week is considered to be Monday to Friday. Each week's lecture will be posted by Monday, if not earlier. *Pre-class* discussion board entries must be done by Wednesday at 5 p.m. Post-lecture discussion board entries must be done by Friday at 5 p.m.

| Week    | Topic   |
|---------|---|
| Aug 23  | Course Overview. Definitions and history of CAM and its broad categories; Reasons for the appeal of CAM; References and resources on CAM<br>Framework for evaluating CAM – levels of evidence and problems with anecdotes |
| Aug 30  | Chiropractic and Osteopathy - body manipulation approaches  |
| Sept 6  | Homeopathy  |
| Sept 13 | Naturopathy and aromatherapy  |
| Sept 20 | <b>Quiz;</b> Functional Medicine  |
| Sept 21 | Energy therapies (Reiki, therapeutic touch, crystals, etc.)   |
| Oct 4   | Traditional Chinese medicine; acupuncture   |
| Oct 11  | <b>Midterm exam;</b> no lecture   |
| Oct 18  | Traditional east Indian Medicine and Ayurveda<br>( <i>DEADLINE to choose presentation topics and date</i> )   |
| Oct 25  | Religious and spiritual approaches  |
| Nov 1   | Mind-Body approaches (yoga, tai-chi, meditation, imagery, music therapy)  |
| Nov 8   | <b>Quiz;</b> Dietary manipulations and approaches – special diets, vitamin supplements, alkaline diets, macrobiotics, etc.  |
| Nov 15  | Student Presentations   |
| Nov 22  | <b>No class. Thanksgiving</b>   |

|        |  |
|--------|--|
| Nov 29 | Student Presentations                      |
| Dec 6  | Concluding Thoughts; Student Presentations |
| Dec 13 | <b>Final Exam</b>                          |

**EVALUATION:**

|                         |           |                         |
|-------------------------|-----------|-------------------------|
| Active learning         |           | 130 points              |
| Assignments             | 30 points |                         |
| Discussion Boards       | 60 points |                         |
| Class Presentation      | 40 points |                         |
| Exams                   |           | 200 points              |
| 2 Quizzes (21 pts each) | 42 points |                         |
| Midterm                 | 60 points |                         |
| Cumulative Final        | 98 points |                         |
|                         |           | <b>330 points total</b> |

**Assignments**

Three 10 point home assignments must be handed in over the semester. For each, review a single news article on a CAM topic from Medscape or the media. Evaluate the actual study or claims in light of the principles of evidence-based medicine.

**Discussion Boards**

Weeks 2 through 12 will require you to prepare for, and then respond to, the topic for that week. The pre-lecture discussion will ask you about your opinions and experience with that week’s topic (2 pts each week x 10). The post-lecture discussion will ask you about the most important things you learned, what questions you still have, and what you wish had been covered better (4 pts x 10). Posts cannot simply repeat earlier ones by you or classmates. Meaningful responses to previous student posts will count and are encouraged.

**Presentation**

One 10-15 minute slide presentation by each student on a specific product or therapy, including specific supplements for a specific indication (including any those listed below). Must be an evidence-based review emphasizing the highest level evidence from meta-analyses and large clinical trials when available. Lower level evidence may be presented when high level evidence is absent, or when large observational studies add significant information. The final slide should be a list of key take home (testable) points.

*Each student must pick a topic by October 23, and should submit a draft presentation to me no later than the Monday prior to their presentation week. At that time the presenter should also submit 3 potential test questions related to key points on the final slide. The final presentation and voice-over should be forwarded to me by the Friday prior to their presentation week.*

*Some possible topics:* detoxification-based therapies or cleanses, chelation, hyperbaric oxygen, prolotherapy, antineoplastons, cryotherapy, HGH supplements like SeroVital, ionized water, flotation chambers, specific herbal remedies, dietary supplements or nutraceuticals.

You should record a voice-over presentation on YuJa, which you can download at

<https://www.youtube.com/watch?v=BU8YYBuoDrI&feature=youtu.be> Alternatively, you can record it in a Sudro classroom by arrangement with me, or on another platform that is compatible with Blackboard.

**Final course grades:**

**A:** 90-100%

**B:** 80-89.9%

C: 70-79.9%  
D: 60-69.9%  
F: <60%

**Recommended Readings (will be available on Blackboard):**

Kaptchuk TJ, Eisenberg DM. Varieties of Healing. 1. Medical Pluralism in the United States. Ann Intern Med 2001;135:189-95

Kaptchuk TJ, Eisenberg DM. Varieties of Healing. 2. A taxonomy of unconventional healing practices. Ann Intern Med 2001;135:196-204

ACCP White Paper on Natural Products. Pharmacotherapy 2017;37(1):e1-e15 doi: 10.1002/phar.1874

**University Policies**

**Attendance Statement** According to [NDSU Policy 333 \(www.ndsu.edu/fileadmin/policy/333.pdf\)](http://www.ndsu.edu/fileadmin/policy/333.pdf), attendance in classes is expected. Veterans and student service members with special circumstances or who are activated are encouraged to notify the instructor as soon as possible and are encouraged to provide Activation Orders.

**Americans with Disabilities Act for Students with Special Needs** Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and contact the [Disability Services Office \(www.ndsu.edu/disabilityservices\)](http://www.ndsu.edu/disabilityservices) as soon as possible.

**Academic Honesty Statement** The academic community is operated on the basis of honesty, integrity, and fair play. [NDSU Policy 335: Code of Academic Responsibility and Conduct](#) applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the [Office of Registration and Records](#). Informational resources about academic honesty for students and instructional staff members can be found at [www.ndsu.edu/academichonesty](http://www.ndsu.edu/academichonesty).

**Instructional Continuity Plan** See College of Health Professions Policy 3.10 for more information. ([https://www.ndsu.edu/fileadmin/healthprofessions/documents/College\\_Policy\\_Manual\\_4.29.15.pdf](https://www.ndsu.edu/fileadmin/healthprofessions/documents/College_Policy_Manual_4.29.15.pdf)) In the event classroom time is interrupted, faculty will use Blackboard to communicate with students. Students with a medical condition should contact the course instructor regarding accommodations.