PHM292G Herbal and Botanical Supplements WB
Fall 2019

Course Coordinator: Nathan D. Pope, Pharm.D.
   Pronouns: he/him/his
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   Phone: 512-471-5657
   Office: 3.208D
   Office Hours: By appointment

Course Unique Number(s): 58580

Classroom(s): ONLINE ONLY

Class Days/Times: This course is web-based. It does not meet at a specified time or place. Students work through the course modules at their own pace within the required deadlines.

Course Faculty: Nathan D. Pope, Pharm.D. (see contact information above.

Teaching Assistants: None

Academic Assistants/Advanced Academic Assistants: None
Course Description:
A practice-based approach to learning about the most common herbal and botanical supplements in a pharmacy practice setting, including review of studies of popular uses, clinical indications, pharmacological effects, mechanisms of action, side effects, contraindications, and common dosage guidelines. Discussion of the legal, regulatory, and ethical aspects, in addition to analyzing manufacturing quality issues and counterfeit products is also addressed.

Rationale:
Many Americans use complementary and alternative medicine (CAM) in pursuit of health and well-being. The 2007 National Health Interview Survey (NHIS), which included a comprehensive survey of CAM use by Americans, showed that approximately 38 percent of adults use CAM. The Natural Product area of CAM includes use of a variety of herbal medicines (also known as botanicals), vitamins, minerals, and other "natural products." Many are sold over the counter as dietary supplements. (Some uses of dietary supplements—e.g., taking a multivitamin to meet minimum daily nutritional requirements or taking calcium to promote bone health—are not thought of as CAM.) Interest in and use of CAM natural products have grown considerably in the past few decades. The 2007 NHIS found that 17.7 percent of American adults had used a nonvitamin/nonmineral natural product. These products were the most popular form of CAM among both adults and children. The most commonly used product among adults was fish oil/omega 3s (reported by 37.4 percent of all adults who said they used natural products); popular products for children included echinacea (37.2 percent) and fish oil/omega 3s (30.5 percent).


Course Prerequisites/Co-Requisites:
PHM 282E (or Pharmacy 262D), 195Q (or Pharmacy163C), and 182F (or Pharmacy 172E)

Course Learning Objectives (CAPE Objectives):
The aim of this course is to prepare the student to respond to questions from patients and other health-care professionals regarding dietary supplements by covering current knowledge of dietary supplements and to assess the validity of emerging information.

By the end of this course, students will:
1. Describe the federal regulatory process for the production and sale of dietary supplements in the United States;
2. Discuss the potential problems and concerns with regulation of dietary supplements;
3. Compare and contrast the advantages of available dietary supplement resources and references;
4. Describe the body of scientific evidence supporting the safety and efficacy of individual dietary supplements reviewed during the course in terms of quantity, quality, and consistency;
5. Identify knowledge gaps in the scientific evidence for dietary supplements; and
6. Given a patient scenario involving the current or desired use of a dietary supplement, develop an evidence-based recommendation for the patient.

Course Success:
This is an online course and does not meet at a scheduled time. This course follows the Academic calendar with content starting on the first day of class for the respective semester and ending on the last day of classes for that semester. There is no final exam. In order to progress through the content of this online course, it is important to remain diligent about your work. This course is developed with the intent for all students to actively participate. This course is an elective and the hope is that you want to learn about this content. The more you participate, the more you will get from this course.

**Course Website:**
This course uses Canvas, a Web-based course management system in which a password-protected site is created for each course. Canvas will be used to distribute course materials, to communicate, and to post grades. Canvas is available at [http://canvas.utexas.edu](http://canvas.utexas.edu). Support is provided by the ITS Help Desk at 475-9400 Monday through Friday 8 am to 6 pm.

**Course Communications:**
Official course communications will take place in class, through e-mail and on the course Canvas website. Students are advised to configure their Canvas settings to forward course announcements to their official e-mail address. Canvas uses only the e-mail address listed on the official University of Texas directory, so please check the University’s online directory to ensure your e-mail address is listed correctly.

**Course Video Recordings:** Not applicable

**Introductory Pharmacy Practice Experience:** Not applicable
Course Policies

Course Grading Policies:

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Points possible</th>
<th>Percent of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clinical Study Summary 1</td>
<td>20</td>
<td>10%</td>
</tr>
<tr>
<td>2. Clinical Study Summary 2</td>
<td>20</td>
<td>10%</td>
</tr>
<tr>
<td>3. Online Discussion Post</td>
<td>40</td>
<td>20%</td>
</tr>
<tr>
<td>4. Online Discussion Post Response</td>
<td>20</td>
<td>10%</td>
</tr>
<tr>
<td>5. Quizzes (10)</td>
<td>100</td>
<td>50%</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>200</td>
<td>100%</td>
</tr>
</tbody>
</table>

Course Grade:
Letter grades will be assigned according to the following scale:

<table>
<thead>
<tr>
<th>Score</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>89.50-100</td>
<td>A</td>
</tr>
<tr>
<td>79.50-89.49</td>
<td>B</td>
</tr>
<tr>
<td>69.50-79.49</td>
<td>C</td>
</tr>
<tr>
<td>59.50-69.49</td>
<td>D</td>
</tr>
<tr>
<td>&lt;59.50</td>
<td>F</td>
</tr>
</tbody>
</table>

Since the course grade scheme already acknowledges rounding, no further rounding will occur, for example, a course score of 89.49 is considered a B, a course score of 79.49 is considered a C.

Assignments:

Module Quizzes:
Quizzes occur with each module. There are 10 modules and 10 quizzes. Quizzes are open book / open note. You will learn as you look for the answers. There is no time limit for this quiz, and you can retake 1 time if you are unhappy with your result. The highest result will be scored. All open-ended quiz questions will be reviewed, so please do not worry if it automatically marks you incorrect. I incorporated “popular” or “most common” spelling, phrasing, etc., but sometimes don’t anticipate all your answers. I will be reviewing and updating. Once I announce that I have reviewed the quizzes from each module, then feel free to submit questions/concerns about quizzes. Thanks!

Supplement Clinical Study Summary Tables
In this assignment, you are to search for and find one (1) piece of primary literature (clinical study) of one the supplements listed in the respective Google Doc for Modules 1-5 (Table 1 or 2) and Modules 6-10(Table 3 or 4). You can search Pubmed.gov or other familiar literature databases. The study must be a clinical study using the specified herbal or botanical in humans. Read the article and then add the key points of the study using the template provided in the Google doc. The goal of this activity is that you have a repository of primary literature references (including common preparations, doses, efficacy, and adverse events) in table format for various herbal supplements upon completion of the course. Use the appropriate Collaborations in Canvas.
Supplements in the Media Online Discussion Board

Participation in the discussion forums is critical in maximizing student-learning experiences in this course. Students are required to be a part of an online community of learners who collectively interact, through discussion, to enhance and support the professional performance of each other. Part of the assessment criteria for the course includes evaluating the quality and timeliness of your participation in the discussion forum. See Rubric for specific evaluation criteria.

As the instructor, I will facilitate student discussions but I will not address every single post. In most cases, I might share a related idea, intervene when the discussion goes off track, or tie student comments together to help deepen student learning. Consequently, I will not directly answer questions in the discussion area unless they are addressed to me. This assignment consists of 2 parts:

1. You are to submit one new posting that contains a summary with a link to or a copy of an article or other media regarding dietary supplements in the popular media. Only popular media sources are allowed in order to simulate the types of information patients readily have access to. In your discussion of this media post, you must present at least 2 pieces of primary literature confirming or rebutting the media’s statement. You must cite sources in the proper formatting.

2. You must also make at least 1 discussion entry on existing posts. These discussions can include opinions and beliefs but must be fact or evidence-based, therefore each post must show evidence of reviewing/reading the primary posts references in order to confirm or rebut the primary post.

Some characteristics I consider to be part of excellent discussion contributions are outlined below:

- Posts and responses should be thorough and thoughtful. Just posting “I agree” or “Good ideas” will not be considered adequate.
- Support statements with examples, experiences, AND references.
- Be brief. Keep each post to one or two paragraphs.
- Contributions to the discussions (posts and responses) should be complete and free of grammatical or structural errors.
- Posts should be on time.
- References should follow a professional format as if you were citing in a professional journal.

Attendance:

- Class Attendance: Not applicable
- Lab Attendance: Not applicable
- Excused Absences: Not applicable
- Attendance at Professional Meetings: Not applicable

Required Materials:

- Course materials, references, readings, power point presentations, etc. will be placed the Canvas web site. Also on this site, you can access the course syllabus, selected readings, grades, and other course resources.
  - Sometimes, resources are best presented as a video. Online access is required.
Recommended Materials: See required materials section

Classroom Expectations:
Cell Phones: Not applicable
Laptops: Not applicable

Dress Code for Lab: Not applicable
Quiz Policies

Quiz Format:
Quiz questions will cover learning objectives given at the beginning of each topic.
Quiz questions may include: multiple choice, true/false, fill-in-the-blank, matching and/or short answer.

Quiz Grading:
Grading of quizzes, along with statistical analysis and review of quiz questions, will be the responsibility of the course coordinator and faculty, who may choose to grant credit for statistically poor questions.

Quiz Return:
Quiz summaries will be shown on Canvas after quizzes are taken. Quiz scores will be posted on the course Canvas site.

Quiz Reconsideration Requests:
Please contact the course coordinator directly with any questions or reconsiderations regarding the quizzes.

Academic Integrity:
Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. See College Policies and Information, and University Policies and Information for more details.

Services for Students with Disabilities:
Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259 (voice) or 232-2937 (video phone) or https://diversity.utexas.edu/disability/. All University rules concerning accommodations must be followed, including the student arranging for special accommodations prior to each examination. In the absence of such prearrangement, it will be assumed that the student is not requesting special accommodations for that exam, and will be expected to take the exam with the rest of the class at the regularly scheduled exam time.

Please provide a copy of the letter to the course coordinator and the office of the Associate Dean for Academic Affairs as soon as possible after receipt.
<table>
<thead>
<tr>
<th>Module</th>
<th>Topic</th>
<th>Readings &amp; Video Content</th>
<th>Assignments</th>
</tr>
</thead>
</table>
| Module 1:  | DSHEA & the History of Herbal/Supplement Regulation | READ: Handbook of Nonprescription Drugs Chapter 50. Introduction to Dietary Supplements  
READ: Tyler’s Herbs of Choice Appendix: The herbal regulatory system pg. 223-236 | QUIZ         |
| Module 2:  | MULTIVITAMINS Drug-Induced Nutrient Depletions | READ: Handbook of Nonprescription Drugs Chapter 22. Essential and Conditionally Essential Nutrients (Nutrient Supplementation Section)  
| Module 3:  | HEADACHES AND MIGRAINES  
- Butterbur  
- Peppermint  
- Feverfew  
- Willow Bark  
- dMagnesium | READ: Handbook of Nonprescription Drugs Chapter 51: Natural Products  
READ: Tyler’s Herbs of Choice Chapter 7: pgs 136 - 140 | QUIZ         |
| Module 4:  | DIGESTIVES & PROBIOTICS  
- Dyglycyrrhizinized licorice  
- Ginger  
- Bromelain | READ: Handbook of Nonprescription Drugs Chapter 51: Natural Products  
READ: Tyler’s Herbs of Choice Chapter 3  
READ: Probiotics for the Prevention and Treatment of Antibiotic-Associated Diarrhea: A Systematic Review and Meta-analysis | QUIZ         |

ASSIGNMENT: Supplements in the Media (Original post) DISCUSSION

**MODULES 1 – 4: DUE SEPTEMBER 25, 2019 @11:59PM**

| Module 5: | CARDIOVASCULAR DISEASE  
- Red Yeast Rice  
- Garlic  
- Policosanol  
- Omega Fatty Acids | READ: Handbook of Nonprescription Drugs Chapter 51: Natural Products  
READ: Tyler’s Herbs of Choice Chapter 8: pgs 160-162  
READ: Tyler’s Herbs of Choice Chapter 6: Arteriosclerosis Only pg. 94-102 | QUIZ         |
| Module 6:  | MEN & WOMEN’S HEALTH  
- Saw Palmetto  
- Yohimbine  
- Chrysin | READ: Men’s - Tyler’s Herbs of Choice (Chapter 4: pgs 68-73, Chapter 7: pgs 143-145)  
READ: Women’s - Tyler’s Herbs of Choice (Chapter 4: pgs 65-68, Chapter 8: pgs 151-159) | QUIZ         |
| - Creatine         | READ: Handbook of Nonprescription Drugs Chapter 51: Natural Products |
| - Black Cohosh    |                                                                                  |
| - Soy/Flaxseed    |                                                                                  |

**Module 7:**  
MENTAL HEALTH  
- St Johns Wort  
- Passionflower  
- Camomile  
- SAMe  
SLEEP/INSOMNIA  
- Melatonin  

READ: Handbook of Nonprescription Drugs  
Chapter 51: Natural Products  
QUIZ

ASSIGNMENT: Supplements in the Media (Response post)  
DISCUSSION

ASSIGNMENT: Herbal-Botanical Clinical Trial Table Part 1

<table>
<thead>
<tr>
<th>MODULE 5 – 7: DUE OCTOBER 23, 2019 @ 11:59PM</th>
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| Module 8:  | WEIGHT LOSS  
- HCG  
- Green Tea  
- Ginseng  
- Hoodia  
- Sensa  | READ: Handbook of Nonprescription Drugs  
Chapter 26: Overweight and Obesity & Chapter 51: Natural Products  
QUIZ |

| Module 9:  | HOMEOPATHY  
- Oscillococcinum  
- Arnica  
- Calendula  
- Chamomilla  | READ: Handbook of Nonprescription Drugs  
Chapter 52: Homeopathy  
Extracurricular Reading: Chapter 52 - Naturopathy, Chinese Medicine, Chiropractic Care, Ayurveda, Massage  
QUIZ |

| Module 10: | DIABETES  
- Chromium  
- Cinnamon  
- Alpha Lipoic Acid  | READ: Handbook of Nonprescription Drugs  
Chapter 51: Natural Products  
QUIZ |

ASSIGNMENT: Herbal-Botanical Clinical Trial Table Part 2

| MODULES 8 – 10: DUE NOVEMBER 20, 2019 @11:59PM |