

Science Based Education for Therapeutic Use of Cannabis



Sample Syllabus *Cannabis* Science and Medicine Certificate Program

Faculty

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Program Description

The *Cannabis* plant has an interesting history, and recent policy changes have led to an explosion in *Cannabis* science. Modules intersperse historical, political, and social background information with more advanced scientific concepts in pharmacology and medicine.

This program will be divided into six areas of content: 1) history, law, policy, and business 2) biology, 3) production and safety, 4) pharmacology, 5) clinical research for pain, and 6) clinical research for motor disorders. The 7th week will be a summary of the entire program content.

This program will provide students with a foundation of up-to-date scientific knowledge in a complex and evolving area of medicine, while introducing key concepts in business, plant biology, and pharmacology.

Program learning goals

This program is intended to be a unique experience for students to develop a broad understanding of *Cannabis* and its medicinal use, with more advanced concepts relevant to biology and medicine in the context of the following specific objectives:

1. Utilize a balanced academic approach to dispel myths surrounding the benefits and toxicities associated with *Cannabis* use.
2. Discuss pharmacokinetics of *Cannabis* for therapeutic use.
3. Explain to patients the best evidence-based indications for clinical use of Cannabinoids and terpenes.
4. Identify the key legal issues around *Cannabis* for therapeutic use.
5. Describe the pharmacology and toxicology of *Cannabis* and cannabis-based products.
6. Critically review and assess the current evidence for safety and efficacy of *Cannabis* and cannabis-based products.

Materials

Required:

There is no required textbook, but readings will be distributed online to students.

Recommended Texts and Readings:

Ahmad, Samoon and Kevin P. Hill. 2021. *Medical Marijuana: A clinical Handbook*. New York: Wolters Kluwer.

Hanson, Bryan Abbot. 2005. *Understanding Medicinal Plants: Their chemistry and therapeutic action*. MI: Haworth Herbal Press. Print.

Holland, Julie, Ed. 2010. *The pot book: A complete guide to Cannabis*. ME: Park Street Press.

Koehn FE, Carter GT. 2005. The evolving role of natural products in drug discovery. *Nature Reviews Drug Discovery*. 4:206-20.

National Academies of Science. 2017. *The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research*. Washington D.C.:

National Academies Press.

Pertwee, Roger, Ed. 2014. *Handbook of Cannabis*. Oxford University Press.

Online Class Space:

As part of your enrollment in the Program, we will provide you login information to our online learning management system, Blackboard. Blackboard will house all of the curriculum materials, presentations, readings and resources for the Program. Blackboard will also be used for communication and networking, including the expected comments and responses required as part of assignments. Additionally, as part of your learning experience we have live seminars in our meeting space, Microsoft Teams. We have provided information about [joining Microsoft Teams as a guest](#).

Course Work

We estimate that students will be engaged in around 10 hours a week of course instruction. This will be a combination of readings, viewings, class discussions, live seminars, assignments, and research.

Performance Goals:

This is a noncredit, certificate-based course. At the conclusion students will receive a certificate of completion instead of a letter grade. To receive the certificate, students must earn a 70%, or greater, based on the following criteria:

1. Attendance and Participation
 - Students can miss a week without any penalty but will be required to make up the assignments at a *prior* date. Please notify us at the beginning of the program if you are not able to participate in an online module.
 - Timely completion and participation in class discussions online.
 - Participation in the live seminars by submitting a question for the speaker prior to the seminar. Students do not have to be actively logged in to participate. Please notify us at the beginning of the program if you are not able to participate in a live seminar.
2. Compilation of safety-reference guide.
3. Completion of case report.
4. Completion of proposed and approved Final Presentation. All students will be required to submit written assignments that will require outside research. Students will use the program material and at least one outside source to review and to form evidence-based projects on topics related to medical uses of *Cannabis*.

Grading Criteria:

Attendance and Participation in Discussions	35%
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Safety-Reference Guide	15%
Case Report	15%
Final Presentation	30%
Quizzes	5%

Discussion Boards and Peer Review:

Our class discussion forum is an important part of our learning experience. We will utilize peer review as a way to share your current expertise and apply our learning objectives. By participating in discussions, you will broaden your understanding of the course content and enhance your ability to think critically. Topics for class discussion and corresponding questions will be suggested for class discussion during weeks 1, 3, and 5. We also ask you to utilize YellowDig to post your introduction and final presentation assignments in weeks 1, 4, and 7.

Here is how it will work. You need to earn a total of 180 points for discussion for the course. We have 6 required postings on YellowDig:

1. Introduction (Week 1)
2. Class Discussion (Week 1)
3. Class Discussion (Week 3)
4. Final Presentation Selection (Week 4)
5. Class Discussion (Week 5)
6. Final Presentation Submission (Week 7)

The collection of points begins Monday at 12:01am and runs until the following Sunday by midnight. You need to earn 30 points by posting, commenting, and interacting with your classmates for each assignment in Yellowdig. You can *only* earn a maximum of 30 points for each assignment in YellowDig. It is up to you to earn your points each assignment by replying to the prompts provide in the modules. You can mix and match how you receive your max of 30 points/assignment. Your earned assignment points in Yellowdig will automatically be transferred into Blackboard. Each action is worth certain points as follows:

- A new post of at least 50 words earns 15 points
- A comment of at least 20 words on an existing post earns 10points
- If your post generates comments, you receive 2 points for each of them
- Receiving a reaction from another user earns 1 point

These ONLINE interactions help foster discussions, as well as allow us to get to know one another in a course where we have no in-person interactions. We expect your posts to be professional and courteous. Please keep the following in mind as you post in terms of the quality expected for posts:

- You respond to the assignment in depth, with concise posts (of 250 words or less) and responses (of 50 words or less) while making connections between evidence-based data and insights using multiple examples.
- You own and facilitate the conversation following your original post.

When you post to the discussion board, please keep the following in mind:

- Please review the document and references on Netiquette before submitting your first post.
- Keep your post focused on the topic, relate class materials from the current module in your post.
- Proofread and review before you submit your thoughtful and evidence-based response.
- Participate regularly. Improve your learning by being an active and engaged student. Successful students post early in the week, and then follow and participate in the assigned discussion throughout the module. You will be expected to log on at least three times a week while reading and participating in discussion.
- If you are unable to fully participate in a week, please contact us.

Quizzes:

In Modules 1-6 there will be a five-question quiz to test your learning of the key concepts presented in each module. The quiz questions will be objective (true/false, multiple choice) and you will have three opportunities to take each quiz. The quizzes are accessible via the assignments page.

Live Seminars:

There will be one course orientation live session and three live seminars; these seminars will be used to present material, discuss key concepts related to the modules, to ask questions of faculty, and to share peer-to-peer knowledge on the topic. **Live seminars will meet every other Thursday in Microsoft Teams at the time assigned in the module (please note all times are EST).** Please view the information about [joining Microsoft Teams as a guest](#) and try using Microsoft Teams before the start time. Live participation in the seminar is not required, but encouraged; however, it is required that each student submits one question for the speaker to get participation credit prior to the seminar, **by the assigned deadline.** Additionally, if you cannot participate in the live seminar, you will be expected to watch the recorded session at a different time.

Citations:

We require students to use MLA format to list your citations. What does this mean? MLA stands for Modern Language Association. Perdue's library gives a [great explanation](#). "MLA format follows the author-page method of in-text citation. This means that the author's last name and the page number(s) from which the quotation or paraphrase is taken must appear in the text, and a complete reference should appear on your Works Cited page."

The University of Maryland has a great [online guide on how to use MLA citations](#).

One example of citing an in print academic journal as shown in the [University of Maryland online guide](#):

Jordan, Stephanie. "Mark Morris Marks Purcell: 'Dido and Aeneas' as Danced Opera." *Dance Research*, vol. 29, no. 2, 2011, pp. 167-213.

Course Schedule: Below is an overview of the topics each week.

Online Session	Materials and Assignments	Subject Matter Experts
Program introduction; Cannabis Law, Policy, and Business	<ol style="list-style-type: none"> 1. Review the materials in the Getting Started section in Blackboard 2. Presentations (3): History; Law and Policy; Economics and Business 3. Class orientation (live) 4. Introduce yourself in YellowDig 5. Class Discussion in YellowDig 6. Quiz #1 	Monique McHenry, Willy Cats-Baril
Cannabis Plant Biology and Basic Science	<ol style="list-style-type: none"> 1. Presentations (4): Taxonomy; Plant Chemicals I, II; Endocannabinoid system 2. Live Seminar 3. Quiz #2 	Monique McHenry, Wolfgang Dostmann, John McPartland
Cannabis Production and Safety	<ol style="list-style-type: none"> 1. Presentations (3): Public Health; Post-Production; Extraction 2. Submit Safety-reference Guide 3. Class Discussion in YellowDig 4. Quiz #3 	Kalev Freeman, Monique McHenry, John McKay
Cannabis Pharmacology	<ol style="list-style-type: none"> 1. Presentations (2): Modes of administration; Toxicology 2. Final Presentation selection post to YellowDig 3. Live Seminar 4. Quiz #4 	Kalev Freeman, Karen Lounsbury
Cannabis Clinical Research: Pain and the Endocrine System	<ol style="list-style-type: none"> 1. Presentations (3): Pain and Inflammation; Pre-Clinical Research; Cancer and the Endocrine System 2. Submit Case-study Report 3. Class Discussion in YellowDig 4. Quiz #5 	Kalev Freeman, Fran Carr
Cannabis Clinical Research: Motor Disorders	<ol style="list-style-type: none"> 1. Presentations (2): Multiple Sclerosis, Parkinsons; Seizures 2. Live Seminar 3. Quiz #6 	Kalev Freeman, Karen Lounsbury
Program Summary	<ol style="list-style-type: none"> 1. Submit Final Presentation to Yellow Dig 2. Review your peers' final presentations 	You

Intellectual Property Statement/Prohibition on Sharing Academic Materials:

Students are prohibited from publicly sharing or selling academic materials that they did not author (for example: class syllabus, outlines or class presentations authored by the professor, practice questions, text from the textbook or other copyrighted class materials, etc.); and students are prohibited from sharing assessments (for example homework or a take-home examination). Violations will be handled under UVM's Intellectual Property policy and Code of Academic Integrity.

You are expected to maintain a high standard of academic honesty. Please read about UVM's Academic Honesty Policy at <http://www.uvm.edu/policies/student/acadintegrity.pdf>

Be particularly careful to avoid plagiarism when working on written assignments.

Religious holidays: You have the right to practice the religion of your choice. Please submit in writing to your instructors by the beginning of the first week of the program your documented religious holiday schedule for the semester. Faculty must permit students who miss work for the purpose of religious observances to make up this work.

Disclaimer and Disclosure

- We will discuss investigational drugs not approved for use in the United States during this program.
- Materials presented here represent faculty's own findings, views and opinions and should not be taken as a statement, position, opinion, or endorsement by the University of Vermont.
- Potential conflicts of interest exist between course faculty and multiple industry partners.
- All potential conflicts of interest have been resolved prior to the start of this program.