

Science Based Education for Therapeutic Use of Cannabis



Syllabus ***Cannabis* science and medicine Certificate** **Program Sample**

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:

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 enrollment in the Program, we will provide you login information to our online meeting space, Zoom. We will hold our live seminars at the following room in Zoom (<https://zoom.us/j/265765437>).

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.
 - 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.
2. Compilation of safety-reference guide.

3. Completion of case report.
4. Completion of proposed and approved Final Project. 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*.

We will use the following tentative evaluation scheme:

Attendance, Participation in Discussions and Seminars and quizzes	40%
Safety-Reference Guide	15%
Case Report	15%
Final Project	30%

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.

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 Project Selection (Week 4)
5. Class Discussion (Week 5)
6. Final Project Submission (Week 7)

The collection of points begins Wednesday at 12:01am and runs until the following Tuesday by midnight. You need to earn 30 points by pinning, 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 pin of at least 50 words earns 20 points
- A comment of at least 20 words on an existing pin earns 5 points
- If your pin generates comments, you receive 2.5 points for each of them

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.

Live Seminars:

There will be 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. Please plan to try using Zoom 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.

Grading of the live seminar will be based on the following rubric.

	Mastery	Adept	Proficient	Needs Improvement
	3	2	1	0
Participation in live seminar * please note live	posts question involving several aspects of the material and makes connections	posts question that demonstrates adequate development	posts question that demonstrates adequate development	No post prior to the live session

participation is not mandatory, please contact if you cannot attend	between evidence-based data with insights about the topics using multiple examples prior to the live session	citing specific examples for each question prior to the live session	prior to the live session	
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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	DATE	Materials and Assignments	Subject Matter Experts
Program introduction; Cannabis Law, Policy, and Business	M1:	<ol style="list-style-type: none"> 1. Review the materials in the Getting Started section in Blackboard 2. Presentations (4): Introduction; History, Legalization status, and Research policy; Business; and Law 3. Introduce yourself in YellowDig 4. Class Discussion in YellowDig 	Monique McHenry, Willy Cats-Baril
Cannabis Plant Biology and Basic Science	M2:	<ol style="list-style-type: none"> 1. Presentations (3): Plant biology, Chemistry, and Endocannabinoid system 2. Live Seminar 	Monique McHenry, John McPartland, Wolfgang Dostmann
Cannabis Production and Safety	M3:	<ol style="list-style-type: none"> 1. Presentations (2): Production preparations and Safety 2. Create safety reference guide 3. Class Discussion in YellowDig 	Monique McHenry, Kalev Freeman, John McKay
Cannabis Pharmacology	M4:	<ol style="list-style-type: none"> 1. Presentations (2): Modes of administration and Adverse effects 2. Final project selection post to YellowDig 3. Live Seminar 	Kalev Freeman and Karen Lounsbury
Cannabis Clinical Research: Pain and the Endocrine System	M5:	<ol style="list-style-type: none"> 1. Presentations (2): Chronic Pain and Inflammation, Cancer and the endocrine system 2. Create Case-study Report 3. Class Discussion in YellowDig 	Kalev Freeman and Fran Carr
Cannabis Clinical Research: Motor Disorders	M6:	<ol style="list-style-type: none"> 1. Presentations (2): MS & Parkinson's and epilepsy 2. Live Seminar 	Kalev Freeman, Karen Lounsbury
Program Summary	M7:	Final Project due!	You

Academic honesty: You are expected to maintain a high standard of academic honesty. Please read about [UVM's Academic Honesty Policy](#).

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.