

MEDICINAL AND AROMATIC PLANTS

Aromatic and medicinal plants are critical components of medications, food and perfumes. The use of essential oils as anointments is ancient. It is estimated that half of the world's drugs are based on compounds isolated from plants, often first identified by ancient folklore. The current search for potential drugs is so widespread that most countries have enacted laws about usage rights. In addition to the pharmacological use of patented, prescription and/or over the counter compounds, incorporation of plant products as a health regimen is still routinely accepted practice.

This growing market is an ideal opportunity for biochemistry majors to apply their specific skill set- extraction and characterization of biochemicals- in an applied program. Manufacturing, testing for purity and safety, and research on medicinal and aromatic plants is a growing field. One need only examine the explosion of cannabis products, including those containing CBD oils, which are not likely to produce a "high" but touted by medical professionals and research as safe and effective.

Medicinal and Aromatic plant studies require foundational courses in biology, biochemistry and chemistry. To learn this field also requires understanding of plant biology, extraction and characterization techniques, and the relevance of pharmacology and toxicity to any naturally derived compounds

Offering this program as a biochemistry certificate option builds upon the foundational training of biochemistry majors. By combining and stacking the required courses an *applied track* is created. The requirements are designed so that a biochemistry major only needs to take 2-3 additional courses, of which 2 would meet program requirements.

This certificate would appeal to students interested in health and wellness and there are ample opportunities to apply these certificate skills in a wide variety of industry, business, consulting and health opportunities, including areas such as: The study and application of alternative medications, Bioactive plant extraction purification and characterization, integrative medicine and many other fields.

Code	Title	Credit Hours
13 Credits Required		
Required Courses		
BIOL 333	Plant Biology	4
BCHM 413	Extraction, purification, and characterization of Medicinal and Aromatic Plants	3
Select one of the following:		3
BCHM 352	Introduction to Toxicology	
BCHM 480	Biochemical Pharmacology	
Select one of the following experiential options:		3
BCHM 495	Off-Campus Research in Biochem	
BCHM 499	Laboratory Research in Biochem	
LIBS 395	Co-op Education Work Assignmnt	
	or LIBS 396 Adv Co-op Work Assignment	
	or LIBS 397 Adv Co-op Work Assignment II	
Total Credit Hours		13

NOTES REGARDING THE MEDICINAL AND AROMATIC PLANTS CERTIFICATE:

1. A minimum grade of D+ is required for each class in the certificate.
2. BIOL 333 is the only course allowed as transfer credit from another institution.
3. Courses may share with other majors, minors, certificates.
4. Pass/Fail grade mode is permitted BCHM 495, BCHM 499 only.
4. A minimum 2.0 GPA in the courses counting toward the Medicinal and Aromatic Plants Certificate is required to earn the certificate.