DIVISION: Natural Sciences and Business

COURSE: AGR 1221 Advanced Cannabis Production

Date: Spring 2023
Credit Hours: 4

Complete all that apply or mark “None” where appropriate:

Prerequisite(s): AGR 1220 Introduction to Cannabis Production or Instructor Approval

Enrollment by assessment or other measure? ☐ Yes ☒ No
If yes, please describe:

Corequisite(s): None

Pre- or Corequisite(s): None

Consent of Instructor: ☐ Yes ☒ No

Delivery Method: ☒ Lecture 3 Contact Hours (1 contact = 1 credit hour)
☐ Seminar 0 Contact Hours (1 contact = 1 credit hour)
☒ Lab 2 Contact Hours (2-3 contact = 1 credit hour)
☐ Clinical 0 Contact Hours (3 contact = 1 credit hour)

Offered: ☒ Fall ☒ Spring ☐ Summer

CATALOG DESCRIPTION and IAI NUMBER (if applicable):
This course covers advanced strategies in cannabis production, cultivation, and processing. Topics covered include genetics and breeding, agronomics of indoor and outdoor cannabis production, and product testing and processing practices. The course will also explore various economic aspects of cannabis production and the industry.
ACCREDITATION STATEMENTS AND COURSE NOTES:
None

COURSE TOPICS AND CONTENT REQUIREMENTS:
1. Genetics and breeding
   a. Breeding targets
   b. Breeding methods
   c. Genetics and genomic diversity
   d. Germplasm resources
   e. Seed feminization
   f. Tissue culture
   g. Cloning
2. Outdoor cannabis production – fiber, flower, oilseed
   a. Seeding and planting
   b. Fertility
   c. Pest control
      i. Weeds
      ii. Disease
      iii. Insects
      iv. Mammals and birds
   d. Harvest and drying
   e. Storage
   f. Compliance testing
3. Indoor cannabis production
   a. Growth media
   b. Lighting
   c. Fertility
   d. Pest control
      i. Insects
      ii. Disease
   e. Irrigation
   f. Cultivation techniques
   g. Harvest and drying
   h. Storage
4. Testing
   a. Potency
   b. Heavy metals
   c. Pesticides
   d. Residual solvents
   e. Terpene profile
   f. Bacteria, fungi, mycotoxins
5. Extraction and processing
   a. Fiber extraction technologies
      i. Primary fibers
      ii. Secondary fibers
      iii. Hurds
b. Cannabinoid extraction technologies
   i. Crude
   ii. Distillate
   iii. Isolate
c. Product types

6. Economics
   a. Product market
   b. Product pricing
   c. Streams of commerce
   d. Distribution options
   e. Federal policy

INSTRUCTIONAL METHODS:
• Lecture
• Discussion
• Laboratory
• Guest speakers
• Field trips

EVALUATION OF STUDENT ACHIEVEMENT:
A= 90-100
B= 80-89
C= 70-79
D= 60-69
F= 0-59

Exams: 40%
Quizzes: 30%
Homework: 20%
Lab assignments: 10%

INSTRUCTIONAL MATERIALS:
Textbooks

Resources
None
LEARNING OUTCOMES AND GOALS:
Institutional Learning Outcomes
☐ 1) Communication – to communicate effectively;
☒ 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion;
☐ 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally;
☐ 4) Responsibility – to recognize how personal choices affect self and society.

Course Outcomes and Competencies
1. Differentiate between the various cannabis breeding targets and methods
2. Explain the role that genetic diversity plays in cannabis breeding practices
3. Identify and discuss the agricultural production practices associated with outdoor cannabis production
4. Identify and discuss the horticultural production practices associated with indoor cannabis production
5. Describe the testing methods used to analyze cannabis product quality
6. Describe the extraction and processing methods used to produce cannabis products
7. Evaluate the economic principles of the cannabis industry as they relate to production decisions