ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

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 Corequiste(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

Small, Ernest. Cannabis: A Complete Guide. CRC Press, 2017. ISBN: 978-1-4987-6163-5

Williams, D.W. Industrial Hemp as a Modern Commodity Crop. American Society of Agronomy, 2019. ISBN: 978-0-89118-632-8

Cervantes, Jorge. The Cannabis Encyclopedia. Van Patten Publishing, 2015. ISBN: 978-1-8788-2334-2

Green, Greg. The Cannabis Grow Bible. Green Candy Press. 2017. ISBN: 978-1-9378-6636-5

Thomas, Mel. Cannabis Cultivation: A Complete Grower's Guide. Green Candy Press. 2012. ISBN: 978-1-9311-6083-4

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