COLLEGE OF THE DESERT

Course Code AGPS-005

Course Outline of Record

1. Course Code: AGPS-005
2. a. Long Course Title: Plant Science
   b. Short Course Title: PLANT SCIENCE
3. a. Catalog Course Description:
   This course offers an opportunity to learn the basic structure and function of plants, their place in the world of human activity and the methods used to manipulate the botanical world to human advantage. Students can expect to be exposed to plant anatomy, morphology and physiology as well as such practical matters as plant propagation, pruning and fertilization.
   b. Class Schedule Course Description:
   This course offers an opportunity to learn the basic structure and function of plants, their place in the world of human activity and the methods used to manipulate the botanical world to human advantage.
   c. Semester Cycle (*if applicable*): *N/A*
   d. Name of Approved Program(s):
   - ENVIRONMENTAL HORTICULTURE AS Degree and Transfer Preparation
   - ENVIRONMENTAL HORTICULTURE AS Degree for Employment Preparation
   - ENVIRONMENTAL HORTICULTURE Certificate of Achievement
   - PLANT SCIENCE AS Degree for Employment Preparation
   - TURFGRASS MANAGEMENT AS Degree for Employment Preparation
   - TURFGRASS MANAGEMENT Certificate of Achievement
4. Total Units: 3.00 Total Semester Hrs: 54.00
   Lecture Units: 3 Semester Lecture Hrs: 54.00
   Lab Units: 0 Semester Lab Hrs: 0
   Class Size Maximum: 36 Allow Audit: No
   Repeatability No Repeats Allowed
   Justification 0
5. Prerequisite or Corequisite Courses or Advisories:
   Course with requisite(s) and/or advisory is required to complete Content Review Matrix (CCForm1-A)
   Prerequisite: ENG 061
6. Textbooks, Required Reading or Software: *(List in APA or MLA format.)*
   a. Parker (2007). *Introduction to Plant Science* (Revised/e). Delmar-Thomson Learning. ISBN: -
   College Level: Yes
   Flesch-Kincaid reading level: 12
7. Entrance Skills: *Before entering the course students must be able:*

a.
Read text and respond in writing at the literate level.

- ENG 061 - Use theses to organize paragraphs into coherent analyses.
- ENG 061 - Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

b.
Apply standard rules of grammar, punctuation, and mechanics in written responses.

- ENG 061 - Recognize features of style such as purpose, audience and tone integrate these elements into academic and professional writing.

c.

Practice fundamental study skills and learning habits.

- ENG 061 - Demonstrate the ability to think critically and express ideas using various patterns of development.
- ENG 061 - Demonstrate the ability to use research skills including library resources such as books, periodicals, electronic databases and online resources such as the internet.

d.

Introduce basic business writing.

- ENG 061 - Use theses to organize paragraphs into coherent analyses.
- ENG 061 - Demonstrate the ability to think critically and express ideas using various patterns of development.

8. Course Content and Scope:

Lecture:

1. The role of higher plants in the living world
    1. Fossil fuels
    1. Food chains
    1. Industrial products
    1. Lower forms of plant life

1. Structure of higher plants
    1. The life cycle of a plant
    1. The cell
    1. Cell structure
    1. The plant body

1. Naming and classifying plants
    1. Climate
    1. Botanical names
    1. Botanical classifications
    1. Plant taxonomy

1. Origin, domestication, and improvement of cultivated plants
    1. Origin of cultivated plants
    1. Domestication of plants
    1. Crop plants
    1. Germplasm
    1. Genetic concepts in plant improvement

1. Propagation of plants
    1. Sexual propagation
    1. Vegetative propagation

1. Vegetative and reproductive growth and development
    1. Vegetative growth and development
    1. Reproductive growth and development
    1. Plant growth regulators

1. Photosynthesis, respiration, and translocation
    1. Photosynthesis
    1. Plant respiration
    1. Electron transport system
    1. Assimilation

1. Soil and soil water
    1. Factors involved in soil formation
    1. Physical properties of soil
    1. Chemical properties of soil

1. Soil organisms
1. Soil organic matter
1. Soil water
1. Water quality

1. Soil and water management and mineral nutrition
    1. Land preparation
    1. Irrigation
    1. Mineral nutrition and fertilizer
    1. Soil conservation

1. Climatic influences on crop production
    1. Climatic factors affecting plant growth
    1. Climatic requirements of some crop plants
    1. Weather and climate
    1. Climatic influences on plant diseases and pests
1. . Crops/ Harvest Practices
1. Crops grown in region
2. Harvest practices
3. Post-harvest practices

12Biological competitors of useful plants

1. Weeds
1. Plant diseases
1. Plant pests
1. Nematodes
1. Rodents
1. Pesticide use
1. Biological control of pests

13.The scientific method

1. Developing a hypothesis
1. Scientific design
1. Application to plant/soil problems

Lab: *(if the "Lab Hours" is greater than zero this is required)*

9. Course Student Learning Outcomes:

1.
Identify various plant parts and be familiar with their functions.

2.
Describe various subjects as plant propagation, pruning, fertilization, and growing practices in a desert environment.

3.
Explain typical plant/water relations and their impact in the desert.

10. Course Objectives: *Upon completion of this course, students will be able to:*
    a. Categorize the roles of higher plants in the living world.
    b. Describe the structural components of higher plants.
    c. Explain the standard plant propagation methods.
    d. Describe sexual and asexual reproduction in higher plants.
    e. Explain photosynthesis, respiration, and translocation in higher plants.
    f. Describe the physical and chemical properties of soils and soil erosion problems.
    g. Describe the climatic influences on plant growth and development.

h. Categorize the biological competitors of higher plants.
i. Describe the scientific method and explain its application in solving problems in plant and soil.

11. Methods of Instruction: *(Integration: Elements should validate parallel course outline elements)*
    a. Discussion
    b. Distance Education
    c. Lecture
    d. Participation

    Other Methods:

    a. Reading textbook and supplementary assignments – homework from each chapter b. Duplication of certain diagrams explicating plant structure – presented as overheads and handouts c. Assimilate lecture material with text material – critically explore topics in detail d. Application of scientific method to solve problems – in depth study and exploration of Darwinism and Mendelian genetics.

12. Assignments: *(List samples of specific activities/assignments students are expected to complete both in and outside of class.)*
    In Class Hours: 54.00
    Outside Class Hours: 108.00
    a. In-class Assignments
        1. Detailed note taking will be essential
        2. Classroom participation is expected and required
        3. Exams will include: essay, multiple choice, matching and true/false questions
    b. Out-of-class Assignments
        1. Reading assignments from required text – homework assignments to parallel chapter presentation

13. Methods of Evaluating Student Progress: *The student will demonstrate proficiency by:*
    - Written homework
    - Mid-term and final evaluations
    - Student participation/contribution

14. Methods of Evaluating: Additional Assessment Information:

15. Need/Purpose/Rationale -- *All courses must meet one or more CCC missions.*
    IGETC Area 5: Physical and Biological Sciences (mark all that apply)
    B: Biological Science without a Lab
    CSU GE Area B: Physical and its Life Forms(mark all that apply)
    B2 - Life Science
    PO - Career and Technical Education
    Fulfill the requirements for an entry- level position in their field.
    Apply critical thinking skills to execute daily duties in their area of employment.
    Apply critical thinking skills to research, evaluate, analyze, and synthesize information.
    Display the skills and aptitude necessary to pass certification exams in their field.
    Exhibit effective written, oral communication and interpersonal skills.
    Transfer to a higher level learning institution
    IO - Personal and Professional Development
    Self-evaluate knowledge, skills, and abilities.
    IO - Scientific Inquiry
    Identify components of the scientific method.
    Collect and analyze data. Skills of data collection include an understanding of the notion of hypothesis testing and specific methods of inquiry such as experimentation and systematic observation.

16. Comparable Transfer Course

University System	Campus	Course Number	Course Title	Catalog Year

17. Special Materials and/or Equipment Required of Students:

18. Materials Fees: ☐ Required Material?

Material or Item	Cost Per Unit	Total Cost

19. Provide Reasons for the Substantial Modifications or New Course:

Change English prerequisite

20. a. Cross-Listed Course *(Enter Course Code)*: *N/A*
    b. Replacement Course *(Enter original Course Code)*: *N/A*

21. Grading Method *(choose one)*: Letter Grade Only

22. MIS Course Data Elements
    a. Course Control Number [CB00]: CCC000250468
    b. T.O.P. Code [CB03]: 10300.00 - Plant Science
    c. Credit Status [CB04]: D - Credit - Degree Applicable
    d. Course Transfer Status [CB05]: A = Transfer to UC, CSU
    e. Basic Skills Status [CB08]: 2N = Not basic skills course
    f. Vocational Status [CB09]: Possibly Occupational
    g. Course Classification [CB11]: Y - Credit Course
    h. Special Class Status [CB13]: N - Not Special
    i. Course CAN Code [CB14]: *N/A*
    j. Course Prior to College Level [CB21]: Y = Not Applicable
    k. Course Noncredit Category [CB22]: Y - Not Applicable
    l. Funding Agency Category [CB23]: Y = Not Applicable
    m. Program Status [CB24]: 1 = Program Applicable

    Name of Approved Program *(if program-applicable)*: ENVIRONMENTAL HORTICULTURE,ENVIRONMENTAL HORTICULTURE,ENVIRONMENTAL HORTICULTURE,PLANT SCIENCE,TURFGRASS MANAGEMENT,TURFGRASS MANAGEMENT

    Attach listings of Degree and/or Certificate Programs showing this course as a required or a restricted elective.)

23. Enrollment - Estimate Enrollment
    First Year: 36
    Third Year: 36

24. Resources - Faculty - Discipline and Other Qualifications:
    a. Sufficient Faculty Resources: Yes
    b. If No, list number of FTE needed to offer this course: *N/A*

25. Additional Equipment and/or Supplies Needed and Source of Funding.

N/A

26. Additional Construction or Modification of Existing Classroom Space Needed. *(Explain:)*

N/A

27. FOR NEW OR SUBSTANTIALLY MODIFIED COURSES
    Library and/or Learning Resources Present in the Collection are Sufficient to Meet the Need of the Students Enrolled in the Course: Yes

28. Originator Jeffrey, W Place Origination Date 10/27/17