

Department of Plant Science California State University, Fresno

Mission, Goals and Objectives

The Mission of the Department of Plant Science is: *“To educate students at the baccalaureate and the master’s level to become leaders of the agricultural industry.*

The Goal of the Department of Plant Science is: *To provide students with an education in modern, scientifically based, economically sound, and environmentally wise agriculture.”*

A graduate of the Plant Science Department at the California State University, Fresno shall have the Knowledge, Skills, and Values listed below:

Knowledge Objectives:

Objective: K1. Plant Science graduates will have the ability to describe and synthesize the methods to manage plants for optimum production and minimum negative environmental impact.

Objective: K2. Plant Science graduates will have the ability to describe and synthesize the methods to manage the physical and biological environment for optimum plant production and minimum negative environmental impact.

Skill Objectives:

Objective: S1. Plant Science graduates shall have the skills to work effectively in the field.

S1.1 Students shall be able to make informed decisions regarding:

S1.1A appropriate scheduling of cultural operations for specific crops

S1.1B selection of crop varieties

S1.1C selection of agri-chemicals and application equipment

S1.1D budgeting for crop production

S1.1E use of agricultural support services

S1.1F minimizing the negative environmental impacts of agricultural operations

S1.1G protecting product safety

S1.1H safely and effectively operate agricultural tools and equipment

S1.1I quantitative skills to perform calculations (e.g. irrigation and agri-chemical application rates, plant populations and mechanical power needs.

S1.2 Students shall have the skills to identify:

S1.2A weeds

S1.2B diseases

S1.2C beneficial and pest insects

- S1.2D nutrient problems
- S1.2E soil and water problems
- S1.2F agricultural plants
- S1.2G agricultural equipment

S1.3 Students shall have the skills to select efficacious, environmentally responsible control measures for:

- S1.3A weeds
- S1.3B diseases
- S1.3C insect pests
- S1.2E nutrient problems
- S1.2F soil and water problems

Objective: S2. Plant Science graduates shall have the laboratory skills to

- S2.1 perform tasks safely
- S2.2 use basic laboratory equipment
- S2.3 follow a written protocol
- S2.4 perform elementary calculations related to preparation of solutions

Objective: S3. Plant Science graduates shall have the critical thinking skills to be able to:

- S3.1 differentiate between fact and opinion
- S3.2 recognize and evaluate author bias and rhetoric
- S3.3 recognize logical fallacies and faulty reasoning
- S3.4 make decisions by drawing logical conclusions using scientific principles
- S3.5 efficiently assess problems and develop appropriate solutions

Objective: S4. Plant Science graduates shall have the ability to communicate effectively through oral speech or written word specific to agricultural professionals and the general public.

Value Objectives:

Objective: V1. Plant Science graduates should be able to describe the food, fiber, economic, recreational, and aesthetic contributions of agriculture to society.

Objective: V2. Plant Science graduates should possess an understanding of the value the natural resources upon which agriculture depends and understand the necessity for conserving those resources.

Objective: V3. Plant Science graduates should be able to assess the environmental and social effects of agricultural activities.