

# PLANT SYSTEMS 01.0100.40

## Program Description, Coherent Sequence, and Certification Information

### PROGRAM DESCRIPTION

If you have a green thumb, this career pathway may be ideal for you. People who work in the **Plant Systems** pathway study plants and their growth. This helps producers of food, feed, and fiber crops continue to feed a growing population while conserving natural resources and maintaining the environment. Individuals in this pathway also develop ways to improve the nutritional value of crops and the quality of seeds. They use genetic engineering to develop crops resistant to pests and drought. Demand for food and fiber will increase as the world's population grows and the demand for U.S. agricultural exports increases as developing nations improve their economies.

As farmers try to grow more food with fewer resources and the public concern over food safety increases, plant scientists are using new avenues of research in biotechnology to develop plants and food crops that require less fertilizer, fewer pesticides and herbicides, and less water for growth. As these technological advances increase, jobs in the field will increase as well. Popular jobs within this field include: Agronomist, Farmer/rancher, Fruit and vegetable grower, Plant geneticist, Seed analyst, Nursery/greenhouse manager, Golf course manager, and Soil and water specialist.

High school students can prepare themselves for college by taking multiple science courses, especially biology and chemistry. Having a basic knowledge of physical and life sciences will aid in the more difficult science courses in college. Land evaluation, plant identification, and other related FFA career development events will help you determine if this pathway is the right fit for you. Some members also find it useful to incorporate this field into their supervised agricultural experience programs. Related SAEs include placement on a row-crop farm or agricultural research facility, working at a greenhouse or nursery, growing vegetables in a backyard garden, or helping manage the turf at a golf course, park or other sports facility.

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The Agriculture, Food and Natural Resources (AFNR) Career Cluster Content Standards provide Arizona agricultural education leaders and educators with a high quality, rigorous set of standards to guide what students should know and be able to do after completing a program of study in each of the AFNR career pathways. The **Plant Systems** Career Pathway encompasses the study of plant life cycles, classifications, functions, structures, reproduction, media, and nutrients as well as growth and cultural practices through the study of crops, turf

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grass, trees, shrubs, and/or ornamental plants. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of plant systems in AFNR settings. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, and applied academic and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAE), leadership and personal development through the Career and Technical Student Organization FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

### INDUSTRY CREDENTIALS

The following credentials have been approved for the A-F CCR and are CTED eligible for the **Plant Systems** instructional program:

- Arizona Agriculture Skills & Competencies Certificate
- Arizona Certified Nursery Professional (ACNP)
- Bayer Crop Science Plant Science Certification
- Benz School of Floral Design Principles of Floral Design Certification
- OSHA 10 – Agriculture
- OSHA 10 – Construction Industry
- OSHA 10 – General

The following industry credential has been approved to meet CTED eligibility for the **Plant Systems** instructional program:

- Arizona Landscape Contractors Association (ALCA)
- Water Harvesting Certification
- Worker Protection on Standard Training Handler Verification Card

### COHERENT SEQUENCE

01.0100.10 - Plant Systems I **and**

01.0100.12 - Plant Systems II **and**

01.0100.30 - Plant Systems III **and program may elect to add:**

01.0100.35 - Plant Systems IV **or**

01.0100.70 - Plant Systems – DCE (Diversified Cooperative Education) **or**

01.0100.75 - Plant Systems - Internship **or**

01.0100.80 - Plant Systems – Cooperative Education

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### TEACHER CERTIFICATION REQUIREMENTS

CAREER PREPARATION: The instructor must be ADE/CTE certified according to the following Certificates PCTA, SCTA, SSCTEA

**Note:**

- **Plant Systems 01.0100.70** may be a part of the sequence and the teacher must hold a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator **01.0100.75** is not required to have a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator **01.0100.80** is required to have a Cooperative Education Endorsement (CEN).

### TEACHER CERTIFICATION TYPES

**PCTA** Provisional Career and Technical Education Agriculture

**SCTA** Standard Career and Technical Education Agriculture

**SSCTEA** Standard Specialized Career and Technical Education Agriculture

### Additional Endorsment Certifications for Agricultural Teachers Wanting Integrated Academics Credit

NES Biology