

## BTC Catalog Addendum – 9.14.2026

### PLANT SCIENCE TECHNICIAN – DIPLOMA PROGRAM

|                    |                   |
|--------------------|-------------------|
| Program Length Day | 7 Months/28 Weeks |
| Total Clock Hours  | 786               |

#### **Educational Objective**

There is an increasing demand for individuals trained in plant science fields including agriculture and horticulture, leading to a wide range of career opportunities. Students will establish a strong background in the plant sciences while applying their knowledge in hands-on experiences. The science-based core instruction focuses on traditional and practical skills development and integrates advancing technology, sustainability, and current industry best practices. Curriculum coincides with today's job market demands considering our regional economy, and a significant applied hands-on learning component is integrated throughout the coursework. Career opportunities exist in areas of ornamental horticulture, agriculture, arboriculture, and floriculture, among others, including but not limited to positions in greenhouse production and operations, interior plant maintenance, farming, environmental technology, nursery management, turf management, conservation, landscaping, hardscaping, and wholesale/retail floristry. Upon successful completion, and given the scope of training, students may consider pursuing additional cross industry certifications based on their individual career goals. If you are a hard-working, energetic, and curious person, this program is worth investigating. Applicants should be committed to possessing a strong work ethic, be flexible, have good people skills, and be physically able to work hard in a wide range of indoor and outdoor conditions.

|                            |                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Course Length</b>       | 786 clock hours                                                                                                       |
| <b>Externship Included</b> | Yes                                                                                                                   |
| <b>Class Schedule</b>      | Monday through Friday, 8:00 a.m.—3:00 p.m. unless noted otherwise<br>Externship schedules are determined by the site. |

#### **Course Outline**

| Course Numbers | Courses                        | Hours |
|----------------|--------------------------------|-------|
| PST 101        | Botany I                       | 32    |
| PST 201        | Botany II                      | 24    |
| PST 102        | Design                         | 32    |
| PST 103        | Plant Propagation I            | 32    |
| PST 203        | Plant Propagation II           | 24    |
| PST 104        | Taxonomy I                     | 32    |
| PST 204        | Taxonomy II                    | 32    |
| PST 304        | Taxonomy III                   | 16    |
| PST 105        | Integrated Pest Management I   | 16    |
| PST 205        | Integrated Pest Management II  | 16    |
| PST 305        | Integrated Pest Management III | 16    |
| PST 106        | Food Crop Production I         | 16    |
| PST 206        | Food Crop Production II        | 16    |
| PST 306        | Food Crop Production III       | 16    |
| PST 107        | Agricultural Operations I      | 16    |
| PST 207        | Agricultural Operations II     | 16    |
| PST 307        | Agricultural Operations III    | 16    |

|          |                                      |     |
|----------|--------------------------------------|-----|
| PST 108  | Greenhouse Management                | 32  |
| PST 109  | Soil                                 | 16  |
| PST 110  | Turfgrass Management                 | 16  |
| PST 111  | Equipment, Safety, and Practicum I   | 62  |
| PST 211  | Equipment, Safety, and Practicum II  | 62  |
| PST 311  | Equipment, Safety, and Practicum III | 62  |
| PD 101   | Professional Development I           | 16  |
| PD 201   | Professional Development II          | 16  |
| PD 301   | Professional Development III         | 16  |
| PSTX 100 | Externship                           | 120 |
|          | Total Clock Hours                    | 786 |

## **PLANT SCIENCE TECHNICIAN DIPLOMA COURSE DESCRIPTIONS**

### **PST 101 Botany I**

This course explores plant structure and its influence on cultivation. Through classroom instruction and laboratory experiences, students will examine the anatomy and function of roots, stems, leaves, and flowers, alongside exploring plant life cycles and reproductive processes. The relationship between plants and people will also be investigated, providing context for advanced studies in botany and horticulture.

### **PST 201 Botany II**

This course examines plant growth and development, emphasizing the impact of external factors. You'll investigate crucial plant processes such as photosynthesis, respiration, and transpiration. The course will delve into how environmental and ecological factors, including soil and water properties, pH, nutrients, light, and temperature, influence plant growth and development.

### **PST 102 Design**

This course's primary focus is on the principles, elements, and processes of landscape design. Emphasis is placed on the ability to interpret base plans and planting plans and to create basic designs at a level expected of typical landscapers. The principles of container and floral design are also covered.

### **PST 103 Plant Propagation I**

Primary focus on the general aspects of plant propagation by seed and cuttings. Explore the history and biology of plant propagation; understand the various stages in the life cycle of plants; investigate environmental requirements for proper plant propagation including light, temperature, moisture, and soils; demonstrate knowledge of seed production and subsequent propagation techniques; compare principles and techniques of sexual and clonal propagation; propagate plants from seeds and vegetative cuttings.

### **PST 203 Plant Propagation II**

Propagation II continues from where Propagation I left off, focusing on the vegetative propagation of plants as well as micropropagation. In theory and utilizing modules of applied learning, demonstrate knowledge of asexual propagation techniques including separation, division, grafting, budding and layering; students are introduced to bio-technical methodology; explore mitosis, totipotency and micropropagation; develop propagation and production schedules. Produce crops as needed or assigned.

### **PST 104 Taxonomy I**

Taxonomy (PST 104, PST 204, PST 304) is a foundational, three-trimester course series. This course emphasizes field-based plant identification, focusing on observable characteristics, cultural requirements, and practical applications. Students will gain proficiency in using dichotomous keys, botanical manuals, and field guides. Key areas of study include observing and identifying morphological features of leaves, stems, buds, flowers, and fruits, alongside mastering the associated descriptive terminology. The curriculum also delves into the hierarchical classification system, exploring how plants are grouped based on their characteristics and evolutionary relationships, while learning both scientific and common names. Practical skills developed include taking detailed field notes, collecting plant specimens for taxonomic identification, and learning proper methods of pressing and drying for preservation. The knowledge gained on plant families and relationships will be integrated and applied to other courses.

### **PST 204 Taxonomy II**

Taxonomy (PST 104, PST 204, PST 304) is a foundational, three-trimester course series. This course emphasizes field-based plant identification, focusing on observable characteristics, cultural requirements, and practical applications. Students will gain proficiency in using dichotomous keys, botanical manuals, and field guides. Key areas of study include observing and identifying morphological features of leaves, stems, buds, flowers, and fruits, alongside mastering the associated descriptive terminology. The curriculum also delves into the hierarchical classification system, exploring how plants are grouped based on their characteristics and evolutionary relationships, while learning both scientific and common names. Practical skills developed include taking detailed field notes, collecting plant specimens for taxonomic identification, and learning proper methods of pressing and drying for preservation. The knowledge gained on plant families and relationships will be integrated and applied to other courses.

### **PST 304 Taxonomy III**

Taxonomy (PST 104, PST 204, PST 304) is a foundational, three-trimester course series. This course emphasizes field-based plant identification, focusing on observable characteristics, cultural requirements, and practical applications. Students will gain proficiency in using dichotomous keys, botanical manuals, and field guides. Key areas of study include observing and identifying morphological features of leaves, stems, buds, flowers, and fruits, alongside mastering the associated descriptive terminology. The curriculum also delves into the hierarchical

classification system, exploring how plants are grouped based on their characteristics and evolutionary relationships, while learning both scientific and common names. Practical skills developed include taking detailed field notes, collecting plant specimens for taxonomic identification, and learning proper methods of pressing and drying for preservation. The knowledge gained on plant families and relationships will be integrated and applied to other courses.

#### **PST 105 Integrated Pest Management I**

This course focuses on the principles and practice of integrated pest management (IPM). Students will learn pest identification, management options, scouting, record keeping, and plant health diagnosis. Plant pests of outdoor and greenhouse ornamentals and food crops will be addressed.

#### **PST 205 Integrated Pest Management II**

This course focuses on the fundamentals of pesticide safety and use. Content follows along with the Pesticide Applicator Certification Core Manual to assist trainees in earning their state applicator license.

#### **PST 305 Integrated Pest Management III**

This course focuses on the fundamentals of pesticide safety and use. Content follows along with the Pesticide Applicator Certification Core Manual to assist trainees in earning their state applicator license. Students will also explore independent study for testing in specific categories of pesticide application that are required for pesticide applicator licensing.

#### **PST 106 Food Crop Production I**

This three-part course series (PST 106, PST 206, PST 306) introduces students to the identification, cultural needs, production practices, harvesting, storage, and distribution of a variety of food crops grown in Western Pennsylvania. Fruit trees, nut trees, brambles, herbaceous berries, olericulture, viticulture, myciculture, grains, beans, and seed oil crops are addressed. Both traditional growing methods and hydroponic growing methods are introduced.

#### **PST 206 Food Crop Production II**

This three-part course series (PST 106, PST 206, PST 306) introduces students to the identification, cultural needs, production practices, harvesting, storage, and distribution of a variety of food crops grown in Western Pennsylvania. Fruit trees, nut trees, brambles, herbaceous berries, olericulture, viticulture, myciculture, grains, beans, and seed oil crops are addressed. Both traditional growing methods and hydroponic growing methods are introduced.

#### **PST 306 Food Crop Production III**

This three-part course series (PST 106, PST 206, PST 306) introduces students to the identification, cultural needs, production practices, harvesting, storage, and distribution of a variety of food crops grown in Western Pennsylvania. Fruit trees, nut trees, brambles, herbaceous berries, olericulture, viticulture, myciculture, grains, beans, and seed oil crops are addressed. Both traditional growing methods and hydroponic growing methods are introduced.

#### **PST 107 Agricultural Operations I**

This three-part course series (PST 107, PST 207, PST 307) introduces the student to our national and local food systems, crop planning, scheduling, cultivar selection, plant support systems, controlled environment agriculture (CEA), crop rotation, harvest planning, post-harvest handling, sorting, grading, packing, storage, and Good Agricultural Practices (GAP).

#### **PST 207 Agricultural Operations II**

This three-part course series (PST 107, PST 207, PST 307) introduces the student to our national and local food systems, crop planning, scheduling, cultivar selection, plant support systems, controlled environment agriculture (CEA), crop rotation, harvest planning, post-harvest handling, sorting, grading, packing, storage, and Good Agricultural Practices (GAP).

#### **PST 307 Agricultural Operations III**

This three-part course series (PST 107, PST 207, PST 307) introduces the student to our national and local food systems, crop planning, scheduling, cultivar selection, plant support systems, controlled environment agriculture (CEA), crop rotation, harvest planning, post-harvest handling, sorting, grading, packing, storage, and Good Agricultural Practices (GAP).

#### **PST 108 Greenhouse Management**

Primary focus on greenhouse systems, infrastructure, and production methods. Investigate the design, function, and outcomes of proper greenhouse management; explore and practice a variety of

production techniques, explore types of growing structures and facilities; analyze systems including infrastructure, environment and cropping technology and record keeping. Differentiate between growing media, demonstrate knowledge of the properties of soil; understand essential elements and fertilizer formulations; establish light, moisture, gas, and plant growth regulator requirements. Grow, maintain, and market crops as required.

#### **PST 109 Soil**

This course introduces students to the most important factor of plant health and growth: soil. The physical, chemical, and biological properties of soil dictate what can grow and how well. Similarly, degradation of soil leads to many common plant health problems. Students will gain an applied understanding of the properties of soils as well as an introduction to the methods used to assess soil structure and health.

#### **PST 110 Turfgrass Management**

This course introduces the fundamentals of turfgrass management, a consistently and highly in-demand field. The biology of turfgrasses and their cultural needs are explored. Traditional as well as modern sustainable turf practices are compared. Lawn, sports turf, and golf course maintenance are discussed as different areas of specialization.

#### **PST 111 Equipment, Safety, and Practicum I**

The Equipment, Safety, and Practicum (ESP) course series (PST 111, PST 211, PST 311) is one of the most critical components of the plant science technician curriculum. In this series, students learn fundamental safety for working and using equipment; gain extensive hands-on experience by caring for the campus landscapes, interiorscapes, and greenhouse; and expand their knowledge or and networking within the southwest Pennsylvania green industry through field experiences learning and working with a variety of regional employer partners in fields such as parks maintenance, turf care, and more.

#### **PST 211 Equipment, Safety, and Practicum II**

The Equipment, Safety, and Practicum (ESP) course series (PST 111, PST 211, PST 311) is one of the most critical components of the plant science technician curriculum. In this series, students learn fundamental safety for working and using equipment; gain extensive hands-on experience by caring for the campus landscapes, interiorscapes, and greenhouse; and expand their knowledge or and networking within the southwest Pennsylvania green industry through field experiences learning and working with a variety of regional employer partners in fields such as parks maintenance, turf care, and more.

#### **PST 311 Equipment, Safety, and Practicum III**

The Equipment, Safety, and Practicum (ESP) course series (PST 111, PST 211, PST 311) is one of the most critical components of the plant science technician curriculum. In this series, students learn fundamental safety for working and using equipment; gain extensive hands-on experience by caring for the campus landscapes, interiorscapes, and greenhouse; and expand their knowledge or and networking within the southwest Pennsylvania green industry through field experiences learning and working with a variety of regional employer partners in fields such as parks maintenance, turf care, and more.

#### **PD 101 Professional Development I**

Strategies for success while attending school; discover personal working likes and dislikes; effective workplace communication, etiquette, and attire; teamwork; and self-management.

#### **PD 201 Professional Development II**

Primary focus on resume building and creating other related professional documents. Build and refine employment documents, including resumes, job applications, cover letters, follow-up letters and reference lists.

#### **PD 301 Professional Development III**

Primary focus on interview skills. Build on existing skills to improve ability to communicate professionally; learn successful verbal and nonverbal communication techniques for interviewing, practice multiple types of interviews common for the industry.

#### **PSTX 100 Externship**

The final portion of training is a four-week (120-hour) externship which will provide the student with on-the-job experience under the supervision of a plant industry professional. Students gain experience in an indoor and/or outdoor environment practice setting that complements the classroom experience. Students can expect to apply the knowledge gained through their program experiences and gain additional knowledge and skills within the specific industry setting of their externship. Externship site placement is determined through a match-making process between the student's professional interests and appropriate externship site availability.

## PROGRAM OFFERING START DATES

### PLANT SCIENCE TECHNICIAN DIPLOMA

| START DATE | END DATE   |
|------------|------------|
| 09/14/2026 | 04/09/2027 |

***School calendar subject to change. Students will be properly notified of any changes.***

## HOLIDAYS

BTC will be closed in observance of the following scheduled holidays:

- New Year's Day
- Martin Luther King Day
- Presidents' Day
- Good Friday
- Memorial Day
- Juneteenth
- Independence Day
- Labor Day
- Thanksgiving Day and the Day After
- Day before Christmas through Year end

## UNIFORM POLICY

All training programs at Bidwell Training Center provide uniforms for students, which they must wear during normal school hours. In addition to the uniform policy, Bidwell Training Center prescribes professional appearance standards for all students to encourage professional development. All professional appearance standards apply when in uniform and are found in the section below.

See below for a detailed description of each program's uniform requirements:

### Plant Science Technician

- **BTC-issued outer layer (if desired)**
  - Green zip-up hoodie
  - Rain poncho
  - Overalls or bibs may be worn but must be in good condition, professional, and suited for outdoor work, and must not cover your BTC shirt logos
- **BTC-issued top**
  - Green short-sleeve t-shirt
  - Green long-sleeve t-shirt
- **BTC-issued work pants**
  - Long work pants

- Student-provided work pants or shorts must be in good condition, professional, and suited for outdoor work
- **BTC-issued headgear (if desired)**
  - Branded knit beanie
  - Sun brim hat

## WORKPLACE EXPECTATION POINTS

The Personal Conduct Policy is enforced through the Workplace Expectation Points system. Violations of the conduct policy will result in the accumulation of points. This system tracks Satisfactory Professional Progress with the goal of preparing students to become professional and productive members of the workforce. Workplace Expectation Points are designed to be learning opportunities for student self-evaluation and professional development.

Depending on the severity of the conduct, students may face suspension or termination if deemed necessary by the designated program staff. Consequences of receiving Workplace Expectation Points are as follows:

- $\frac{1}{4}$  of the Workplace Expectation Points in a quarter: Written Warning
- $\frac{1}{2}$  of the Workplace Expectation Points in a quarter: Meeting with Senior Director
- $\frac{3}{4}$  of the Workplace Expectation Points in a quarter: Meeting with Senior Director, suspension
- Exceed the maximum Workplace Expectation Points in a quarter: Termination

**Senior Directors/Directors have the discretion to suspend a student for the remainder of the day when there is a significant disruption. Egregious acts of harm are subject to immediate termination.**

Individual program length determines maximum point accrual within a quarter before termination.

- Plant Science Technician: 8 points per quarter

## CALL-OFF PROCEDURES

A student must call off before the course start time when unable to attend classes.

**Call-offs must state whether the student will be absent for the entire day or state the expected arrival time, if calling off for part of the day. It is the student's responsibility to provide updates if their expected arrival time changes or if changing circumstances require their absence for the day. If a student needs to leave early, a call-off must be sent before leaving campus for the day. A professional call-off does not need to include the reason for calling off.**

In the event of consecutive absences, the student must call off every day absent. Call-offs will NOT be accepted from another enrolled student. In the event of extreme circumstances such as hospitalization without physical ability to call off, a call off may be received from your emergency contact.

Call offs must be sent to the official program email alias:

[PST@manchesterbidwell.org](mailto:PST@manchesterbidwell.org)

No other method for calling off, including text messaging or phone calls, is acceptable.

## ESTIMATE OF COST OF ENROLLMENT

Plant Science Technician  
7 MONTHS/786 CLOCK HOURS

|                                             |                               |             |
|---------------------------------------------|-------------------------------|-------------|
| APPLICATION FEE                             | \$ 0                          |             |
| LAB FEE                                     | \$ 0                          |             |
| CERTIFICATION TEST FEE                      | \$ 180                        |             |
| CLEARANCE FEES                              | \$ 47                         |             |
| GRADUATION FEE                              | \$ 50                         |             |
| PRACTICUM INSURANCE FEE                     | \$ 0                          |             |
|                                             | SUB-TOTAL MANDATORY FEES      | \$ 277      |
| BIDWELL TRAINING CENTER TUITION             |                               | \$ 12,000   |
| BIDWELL TRAINING CENTER SUPPLIES            |                               |             |
| COMPUTER                                    | \$ 0                          |             |
| BOOKS                                       | \$ 1,117                      |             |
| STUDENT SUPPLIES                            | \$ 229                        |             |
| UNIFORM                                     | \$ 400                        |             |
|                                             | SUB-TOTAL MANDATORY SUPPLIES: | \$ 1,746    |
| BIDWELL TRAINING PROGRAM TOTAL:             |                               | \$ 14,023   |
| INTERNAL ONE-TIME INSTITUTIONAL GRANT AWARD |                               | \$ <14,023> |
| Cost of Bidwell Enrollment to Student:      | \$ 0                          |             |