AGRICULTURE LAB

SPACE DESCRIPTION

The Agriculture Lab is a shared space for various programs of study within the field of agriculture. The Agriculture Lab is the main training area, with high ceilings and open floor space to allow flexibility for the instruction of, typically, 24 students. This lab is considered the fundamental space for the basic agriculture programs and is somewhat similar to, but not identical to a chemistry lab. A precision agriculture lab, and/or a greenhouse (reference standards for those spaces) should be added in addition to this lab to accommodate those programs. The agriculture lab space shall be sized to accommodate equipment demonstrations, hosting groups of up to 50 people. A Prep Lab, Classrooms, program-specific Labs, and Storage rooms adjoin the Open Lab for ease of movement and agile instruction. This space is designed to provide students with a flexible and collaborative place for hands-on learning, supporting diverse areas of agriculture such as:

- AgriBusiness
- Agronomy
- Agriculture Equipment
- Horticulture

Additional Lab & Programs (Reference Separate Standards)

- Precision Agriculture
- Aquaculture

Different courses/programs can be taught through Agriculture and the needs of each spaces can vary widely by campus. The layout shown is illustrative of basic concepts and spatial needs and should be adjusted according to each campus' specific requirements. When Precision Agriculture is included in campus programming, additional space and outdoor facilities will be needed (see **Diesel / Precision Agriculture Lab**). Oftentimes, industry partners offer apprenticeship programs and/or corporate training, occupying the space alongside regular academic programs. Verify and provide for any specific partner requirements.

As all programs in the AMEAS field quickly evolve and expand, so too, must the space they occupy. The Lab, the site, and all infrastructure shall be planned with flexibility in mind. Agriculture Labs are most successful when located at the rear of campus property, outside the common path of travel, and with direct access to growing fields.

Support utilities such as 3-phase power and overhead exhaust are required.

SUCCESS FACTORS

Exterior Access: Overhead doors or double doors are required for moving demonstration equipment and supplies in and out of the Agriculture Lab. Similar access is needed in the main Lab, Greenhouse, and at any other spaces identified by the program if those spaces cannot be served by a nearby overhead door.

Safety: Some courses will work with chemicals/equipment. The Labs must be outfitted with safety equipment and must comply with all relevant safety regulations and standards. Locate emergency eye washes and showers in an easily accessible area.

Flexibility: The lab will be rearranged for a large variety of instruction types. Maximizing the space's use through flexible furniture, infrastructure and technology will allow the college to maximize its use.

GENERAL

All perimeter walls shall be full height to deck.

ADJACENCIES

Separate and/or adjacent space is required for the following: **Prep Lab, Material Storage, Secure Tool Storage, Classrooms, and Outdoor Equipment Storage.** Additional spaces that may be required for the program could include: **Diesel/ Precision Agriculture Lab, Greenhouse, Prep/ Grow Room, Aquaculture and Utility Room.**

ACOUSTICS

Agriculture Labs are not typically high noise producing space. But typical industrial finishes with multiple hard surfaces can create echoes in the room. Sound absorbent panels on walls and ceilings for noise reduction should be considered.

Where Agriculture labs border acoustically sensitive spaces, exterior walls should have a minimum STC rating of 50.

MECHANICAL

Proper ventilation is key, with overhead exhaust needed for vehicles and large equipment. The utilities needed should be coordinated with the Campus' specific courses. Electrical service, compressed Air, Gas, Distilled/ Reverse Osmosis and Water may be needed and should be distributed overhead.

- Consider Building Automation technology with automated mechanical systems for select areas.
- Provide an emergency shower with eye wash

ELECTRICAL & DATA

Provide power and data at 6' intervals or in raceways along perimeter walls at locations which may be used for desktop computer workstations and/or lab equipment.

LIGHTING

Proper lighting is crucial in Agriculture Labs.

- In high-bay areas, provide LED lighting in warm, soft white color.
- Task lighting is required at individual bays and workstations.
- Provide dimmer switches in select locations.

TECHNOLOGY

Verify specific needs on a project-by-project basis while planning for flexibility in the future.

- Provide Wireless capability throughout Agriculture Labs and adjacent spaces with Wireless Access device.
- Audio/Visual System per Ivy Tech specification.
- Consider Building Automation technology and security/ alarm systems in select areas.
- Provide telephone service.
- Provide high-speed internet throughout, with dedicated data connections for Smart TV and additional equipment as identified by the program. Verify specific requirements.
- Verify if PSEP cameras are needed in key locations.
- Provide card reader/ key fob at entry doors and storage rooms.

ACCESSORIES AND EQUIPMENT

Equipment needs should be determined on a project-by-project basis while planning for flexibility in the future. At minimum, equipment shall include:

- Fire extinguishers
- Wall-mounted tack boards and marker boards

FURNITURE

Provide the following standard furnishings for Open Labs:

- Student lockers for storage of personal items.
- Tables, chairs and toolboxes on rollers for flexibility and mobility.
- Wall shelving and storage racks on perimeter walls.

FINISHES

Ceilings

Recommended Height: 20’ clear with exposed structure. Provide acoustic panels for sound absorption.

Floors

Polished or sealed concrete slab for durability and ease of cleaning

DOORS AND WINDOWS

Overhead doors for exterior access. 10’W x 12’H, typical.

Provide interior glazing for visual connection between spaces.

PREP LAB

SPACE DESCRIPTION

The Prep Lab is a dedicated Lab space, adjacent to the Agriculture Open Lab used to prepare materials and equipment four class work. See **General Science Lab – Anatomy & Physiology / Physics Lab**.

Provide direct access to the Open Lab and close proximity to Material Storage and Classrooms. Provide acoustic separation between the Prep Lab and Open Lab.

MATERIAL STORAGE

SPACE DESCRIPTION

Material Storage is a dedicated storage room with independent climate control for the storage of seeds, soils, fertilizers and other sensitive items.

Provide direct access to the Open Lab and other spaces as needed per program requirements.

Double doors or an overhead door shall be provided for exterior access and receiving.

ACCESSORIES AND EQUIPMENT

Wall shelving and Lockers.

SECURE TOOL STORAGE

SPACE DESCRIPTION

The Secure Tool Storage room is a dedicated space, adjacent to or part of the main Open Lab, for the storage of specialized tools, air compressor and other utilities. Independent climate control is required. The space should be secured by walls, or secure fencing. A workstation with power and data may be provided for use by a lab technician for tracking tools and parts.

Provide key fob access.

Provide direct access to the adjacent Open Lab and other spaces as needed per program requirements.

ACCESSORIES AND EQUIPMENT

Wall shelving and toolboxes on rollers.