

## DEVELOPMENT CRITERIA NARRATIVE & DOCUMENTATION

### 1. Statement of Program Goals and Objectives

This Basic Cannabis Horticulture Certificate of Achievement prepares workers for careers linked to entry-level cannabis cultivation related occupations such as Grower / Horticulturist / Cultivation technician, Propagator, and Trimmer / Post-Harvest Specialist. This program combines classroom learning and hands-on skill development in labs, fieldwork, and field trips. The curriculum provides a strong foundation in basic horticultural principles, cannabis plant biology and physiology, outdoor and greenhouse cannabis cultivation, and cannabis genetics; industry standard skills and practices related to safe work practices and ergonomics; and resume-writing and interview skills.

To qualify for the Basic Cannabis Horticulture Certificate of Achievement students must complete all of the required courses, totaling a minimum of 16.5 units to a maximum of 17.5 units.

As required by CTE student outcomes, this program will increase enrollment for the Merritt College Horticulture Department, increase the number of students who earn degrees, credentials, certificates or specific skill sets to prepare them for an in-demand job, and reduce equity gaps across all of the above measures through faster improvements among traditionally underrepresented student groups.

### 2. Catalog Description

This Basic Cannabis Horticulture Certificate of Achievement prepares workers for careers linked to cannabis horticulture related occupations such as Grower / Horticulturist / Cultivation technician, Propagator, and Trimmer / Post-Harvest Specialist. This program combines classroom learning and hands-on skill development in labs, fieldwork, and field trips. The curriculum provides a strong foundation in basic horticultural principles, plant biology and physiology, outdoor and greenhouse cannabis cultivation, and cannabis genetics; industry standard skills and practices related to safe work practices and ergonomics, and resume-writing and interview skills.

### **Program Learning Outcomes for the Basic Cannabis Horticulture Certificate:**

Students who receive a Certificate will be able to:

1. Apply cannabis biology, physiology, and plant nutrition knowledge to cannabis cultivation practices.
2. Use various horticulture tools safely and properly sterilize tools.
3. Build healthy soil and mix organic container media optimized for cannabis production.

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4. Propagate and maintain cannabis plants through vegetative growth and flowering.
5. Apply cannabis Integrated Pest Management (IPM) treatments.
6. Apply harvesting and post-harvest handling best practices.

**3. Master Planning**

Requirements	Dept. Name/#	Name	Major Units	GE Units	Sequence
<b>Semester 1</b>					
	LANHT 001 Or LANHT 001E and	Introduction to Landscape Horticulture with Lab (DAY) Or Introduction to Landscape Horticulture (Evening)	3		Semester 1 (Spring)
	LANHT 230 and	Introduction to Cannabis Production	3		
	LANHT 237 and	Spring Cannabis Lab	2		
<b>Semester 2</b>					
	LANHT 019 and	Plant Nutrition	3		Semester 2 (Fall)
	LANHT 239 and	Fall Cannabis Lab	2		
	LANHT 233 and	Cannabis Careers	1		
	LANHT 235 and	Cannabis Pruning, Harvesting, and Trimming	.5		
	LANHT 234 or	Cannabis History and Genetics	3		
	LANHT 240 or	Personal Use Cannabis Garden Cultivation	3		

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	LANHT 238	Summer Cannabis Lab	2		Optional Summer Semester
Major Requirements			16.5/17.5		
General Education Requirements				0	
Total Units			16.5/17.5		

**OR**

Requirements	Dept. Name/#	Name	Major Units	GE Units	Sequence
<b>Semester 1</b>					
	LANHT 001 Or LANHT 001E and	Introduction to Landscape Horticulture with Lab (DAY) Or Introduction to Landscape Horticulture (Evening)	3		Semester 1 (Fall)
	LANHT 019 and	Plant Nutrition	3		
	LANHT 239 and	Fall Cannabis Lab	2		
	LANHT 235	Cannabis Pruning, Harvesting, and Trimming	.5		
<b>Semester 2</b>					
	LANHT 230 and	Introduction to Cannabis Production	3		Semester 2 (Spring)
	LANHT 237 and	Spring Cannabis Lab	2		
	LANHT 234 or	Cannabis History and Genetics	3		

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	LANHT 240 or	Personal Use Cannabis Garden Cultivation	3		
	LANHT 238	Summer Cannabis Lab	2		Optional Summer Semester
Major Requirements			16.5/17 .5		
General Education Requirements				0	
Total Units			16.5/17 .5		

**4. Background and Rationale**

In 2016, California voters passed Prop 64, which legalized adult-use cannabis and created a licensing system for the legal cultivation, distribution, manufacture, and sale of cannabis. The cannabis industry is currently estimated to be the fastest growing job creating sector of the economy.

Because cannabis cultivation had previously been illegal and an underground economy, many of the best practices found in traditional horticulture have not been implemented yet in the cannabis industry. Many of the current cultivation practices (indoor monoculture under High Intensity Discharge lighting, maximizing yield via intensive fertilizer use, etc.) are unsustainable and not ecologically sound.

This certificate program will teach students environmentally sustainable best practices for cannabis cultivation including integrated pest management (IPM), maximizing yield through the application of compost and building healthy soil, and harvesting and storage strategies. The program has the opportunity to set precedents for new industry standards.

Cannabis industry employers in the East Bay and nearby counties have reached out to our department. They shared with us that there is a critical shortage of skilled cannabis horticulture workers and are unable to meet employment demands. Working with industry partners, we were able to develop a program that balances industry standard job skills and foundational science theory to ensure a basic cannabis horticulture program that meets the needs of our partners and enables our graduates to get gainful, entry-level employment.

This Certificate of Achievement represents a solution to employment needs in the ongoing and growing field of cannabis cultivation. The courses consist of horticulture courses with a

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heavy emphasis on job-oriented hands-on experience. This Certificate of Achievement allows for entry-level placement and / or more advanced studies.

The cannabis industry also provides opportunities for women and minority ownership at higher rates than the rest of the overall economy and can reduce equity gaps among traditionally underrepresented groups. “In nearly every sector of the cannabis industry, the portion of executive positions filled by women is higher than the national average for all businesses in the traditional economy... The percentage of minorities who hold executive positions at cannabis businesses stands at 17%, higher than the average across all U.S. businesses as a whole... By sector, minorities occupy a significantly higher percentage of executive positions at wholesale cultivation businesses relative to the rest of the industry.” (Marijuana Business Daily - Women and Minorities in the Cannabis Industry, see attached.)

As required by CTE student outcomes, this program will increase enrollment for the Merritt College Horticulture Department, increase the number of students who earn degrees, credentials, certificates or specific skill sets to prepare them for an in-demand job, and reduce equity gaps across all of the above measures through faster improvements among traditionally underrepresented student groups.

#### 5. Enrollment and Completer Projections

The enrollment data for the courses included in the Basic Cannabis Horticulture Certificate of Achievement is shown in the table below. These are the numbers of grades (other than “W”) earned. Only regular semesters (fall and spring) are taken into account. We would anticipate a growth trend due to incoming students into the program.

Because of the possibility of completing this Certificate of Achievement in only one year, and the high demand for cannabis employees in this expanding job sector, we believe we could see 20 completers or more per year.

Enrollment Data – Number of Letter Grades (other than W) Earned

Course	F17 & S18	F18 & S19	F19 & S20
LANHT 001	44	40	37
LANHT 001E	46	49	45
LANHT 019	21	14	29
LANHT 235	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022		
LANHT 237	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022		
LANHT 240	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022		

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LANHT 241	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022
LANHT 243	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022
LANHT 244	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022
LANHT 245	Created Spring 2021 for this Certificate of Achievement; effective Spring 2022

**6. Place of Program in Curriculum/Similar Programs**

Merritt College is committed to increasing its Career Technical Education offerings in its workforce development. The Landscape Horticulture Department is revamping their offerings to provide a series of degrees and certificates in the horticulture professions. This Certificate of Achievement is one of several: Landscape and Parks Maintenance Certificates and Degree, Landscape Architecture Degree, Landscape Design and Construction Certificates and Degree, Nursery Management Certificates and Degree, AS Degree in Arboriculture and Tree Care Specialist Certificate.

This Certificate of Achievement is employment-focused, designed to impart skills needed for immediate employment in the broad field of cannabis cultivation.

**7. Similar Programs at Other Colleges in Service Area**

There are currently no similar programs in Merritt College's service area. According to a recent article in the Diablo Valley College student newspaper The Enquirer, DVC is set to launch a cannabis "Master Grower" Certificate of Achievement program in Spring 2022. (*Cannabis on Campus: DVC Horticulture Offers New Career Track Where "Master Growers" Can Earn Six Figures*. Jenny Orme, DVC Enquirer. March 24, 2021).

**8. Labor Market Information & Analysis (CTE only)**

Currently, Labor Market Information (LMI) is not available for cannabis jobs from CA Employment Development Department (EDD). They do not collect this information as all data must be shared with the federal government and cannabis is not legal at the federal level (see attached correspondence from EDD and CA Bureau of Cannabis Control.)

Dark Heart Nursery, a licensed Oakland cannabis nursery, approached the Landscape Horticulture Department in 2018 to discuss basic cannabis horticulture training for potential employees. They reported a lack of qualified applicants, and too much training time spent on basic horticulture and plant science skills. This lack of qualified applicants was confirmed by

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Flow Kana, an outdoor cannabis distribution company based in Mendocino County, and the Nevada County Cannabis Alliance.

We were able to secure permission to use Vangst 2020 Cannabis Salary Guide, a leading cannabis consulting firm (see Appendices), for purposes of developing this Certificate of Achievement. Vangst surveyed cannabis employers nationwide, and found that Oakland CA is currently the #10 “hotspot” in terms of all cannabis related hiring nationwide, and that California currently has the highest percentage of workers in the cannabis industry.

Also, according to national cannabis web site Leafly.com Jobs Report for 2021, cannabis jobs increased nationwide by 161% since 2020, the next closest increase in new jobs was for wind turbine service techs, which saw a 61% increase. California is currently estimated to employ 57,970 full-time cannabis workers, an increase of 23,707 total jobs since 2020 (to put that in perspective, there are 41,140 total bank tellers in the State of California).

Cannabis cultivation occupations are increasingly becoming an excellent career path in the San Francisco Bay Area and surrounding counties. Job titles include: Grower / Horticulturist / Cultivation Tech, Propagator, Trimmer / Post-Harvest Specialist, and other identified occupations.

### 9. Employer Survey (CTE only)

Public contact information is not available for licensed California cultivation employers.

The City of Oakland and the State of California have created a data firewall for licensed cannabis cultivators to maintain anonymity due to an increase in burglaries and armed robberies since legalization took effect in 2016. We were unable to survey industry employers because of this (see Appendices).

We also asked the City of Oakland, Flow Kana, and the Nevada County Cannabis Alliance if they would cooperate on distributing an Employer Survey, but they declined due to security and privacy issues.

### 10. Explanation of Employer Relationship (CTE only)

Cannabis industry professionals from Dark Heart Nursery, an Oakland-based cannabis nursery, reached out to our department. Working with them and other industry partners, we were able to develop a program that balances industry standard job skills, basic horticulture training, and foundational science theory to ensure a strong program that meets the needs of our partners and enables our graduates to get gainful entry-level employment.

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Dark Heart Nursery has committed to providing higher starting wages for graduates of this Certificate of Achievement, please see attached letter from Dan Grace, Dark Heart CEO, to the Peralta Board of Trustees.

Multiple meetings were held over the phone and online via Zoom due to the pandemic to develop the degree. Below is a list of attendees and their companies.

Meeting Attendees	Company
Dan Grace, CEO	Dark Heart Nursery
Jennifer Mercado, Cultivation Manager	Dark Heart Nursery
Dr. Kay Watt, Botanical Geneticist	Dark Heart Nursery
Dr. Amanda Reiman, VP of Community Relations	Flow Kana
Maggie Philipsborn, Executive Director	Nevada County Cannabis Alliance

**11. List of Members of Advisory Committee (CTE only)**

Meeting Attendees	Company
Dr. Kay Watt, Botanical Geneticist	Dark Heart Nursery
Dr. Amanda Reiman, Vice President of Community Outreach	Flow Kana
Johanna Silver, Author	Author, <u>Growing Weed In The Garden</u>
Deidra Bagdasarian, CEO	Bliss Edibles and Extracts
Garen Bagdasarian, Extractor	Bliss Edibles and Extracts
Matthew Kumin, Esq.	Cannabis Attorney
Lawrence Lee, Faculty	Merritt College Landscape Horticulture
Victor Littles, Transitions Liaison	Merritt College Adult Education

**12. Recommendations of Advisory Committee (CTE only)**

The recommendations that came out of the advisory meetings are:

- This Basic Cannabis Horticulture Certificate of Achievement focuses on cannabis horticulture skills for entry-level positions. Intermediate and Advanced Certificates should be developed for more advanced job skills.
- This program must have inherent flexibility (day/night scheduling) to allow students to complete this Certificate of Achievement in 1 year.

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- This program must provide skills/training to both those students new to the industry; those already working in the field but who want to advance their current practice; and those who are coming back to school to learn a new trade.
- The skills/knowledge acquired throughout the program meet current industry standards for entry-level positions.
- Develop a 2 year Cannabis Horticulture Associate of Science degree and Certificates of Achievement for different levels: Basic; Intermediate; Advanced.

Attachment: Minutes of Advisory Board Meetings

**13. Display of Proposed Sequence**

Requirements	Dept. Name/#	Name	Major Units	GE Units	Sequence
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	LANHT 240 or	Personal Use Cannabis Garden Cultivation	3		
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Total Units			16.5/17 .5		

**14. Transfer Documentation (if applicable)**

The Basic Cannabis Horticulture Certificate of Achievement is locally recognized. It is not primarily designed to be transferable, although individual courses may transfer as General Education electives.

Attachment: Transfer Documentation (if applicable)  
 Not Applicable.

**15. Library and/or Learning Resources Plan**

Merritt College’s offerings have been and should continue to be sufficient for the needs of the Basic Cannabis Horticulture Certificate of Achievement.

**16. Facilities and Equipment Plan**

The Landscape Horticulture Department is located on an 8-acre parcel of land on the Merritt College campus and will have new classrooms and facilities in Fall 2023. This will include greenhouses and growing facilities to support this cannabis certificate program.

Equipment to be used for the program will be primarily using Strong Work Force Grant funding, as well as working with industry partners to secure equipment donations.

**17. Financial Support Plan**

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The source of support for ordinary costs of instructions will be covered by the general funds available for instruction of courses through the Peralta District. Instructional equipment grants, primarily Strong Work Force funding, as well as Perkins funds for CTE programs, will be used for purchase of new and updated equipment.

### 18. Faculty Qualifications and Availability

The program is part of the Landscape Horticulture department in the Math, Science and Technology division of Merritt College. The LANHT faculty at Merritt College currently consists of 3 full-time instructors and 22 adjunct instructors. All faculty members meet the Minimum qualifications for LANHT department faculty, which requires any degree and professional experience.

### 19. Based on model curriculum (if applicable)

Not based on a Model Curriculum.

### 20. Licensing or Accreditation Standards

All courses taught at Merritt College for the program meet accreditation standards for Merritt College. Courses may articulate for elective units with transfer institutions but do not necessarily transfer course to course. There are no licensing standards being satisfied by these courses.

### 21. Student Selection and Fees

There is no specific student selection process or additional fees beyond Merritt College registration fees for units for participation in the program.