COURSE

Managing a vertical farm

Horticulture to the next level

Managing a vertical farm

Vertical farming (indoor farming without daylight) is a development that takes horticulture to the next level. With Light Emitting Diodes (LED) it is possible to offer plants the perfect light conditions, while other climatic factors are also completely controlled. Since there are no further external factors influencing the climate, all decisions can and have to be made by the grower.

Course outline

HAS University of applied sciences has more than 10 years of experience in successfully growing crops exclusively lit by LED in both research and large-scale production cells.

HAS and Inholland University now offer a production management course to share our knowledge and experience with professionals from horticulture and related industries with special interest in vertical or city farming

> *In a short period of time, we give the students a taste of all aspects that play a role in starting up and running a vertical farm. In this way they discover what is needed to develop a healthy business model and they are prepared from an independent perspective for discussions with future suppliers.*
>
> **Jasper den Besten**
> Professor New Cultivating Systems at HAS University of Applied Sciences

Program outline

Crops, varieties and yield potential

Which are the crops that are potentially interesting to grow under LEDs in a vertical farm, including varieties and yields. During the practical part crops will be harvested, weight will be determined and calculations done for yield.

Light

Light will be measured under different (LED)-lights with different devices (from a simple cell phone app to a spectrometer) and we will give you some tools to calculate the energy and cost efficiency of different LED modules.

Seeds, sowing, substrates –

You learn the process from sowing to transplanting, attention is paid to different substrates and spacing strategies. Also we focus on characteristics of and cultivation in different substrates in combination with water delivery systems.

Climate setting

Optimal climate settings are discussed in terms of light quality, intensity, (day) length and integral, temperature, humidity, CO2 level, air speed and those effects on product quality and costs.

Designing and Building a vertical farm -

What factors you should take into account building and designing a vertical farm? What are the do's and don'ts?

Hygiene and sanitation,

Both plant diseases and pests and human bacterial diseases will be discussed in relation to hygiene protocols and disinfection methods.

Post harvest and path to the consumer

Plant physiology before and after harvest will be compared and packing, packaging materials and storage temperatures wil be discussed. Also we will briefly discuss market analysis and produce marketing options.

Business principles

First we will teach you how to make a good business case The last module of the course you can put everything together and you are going to make your own business case.

Summary

Course price and start date

Check our website has.nl for current start dates, locations and costs.

Duration

The course takes place during one intensive week in the Netherlands. Most of the days we are at our academy facilities in 's-Hertogenbosch, the Netherlands. Additionally also visit some commercial and research farms and retailers in the Netherlands.

For whom?

Everyone who is working in or will start a vertical farm.

Requirements

The level of the course is BSc+.

www.has.nl/en

Simply register online

Are you enthusiastic about this training after reading all the information? Register now on our website www.has.nl/en. After registration you will receive a confirmation immediatly. If you have any questions? Don't hesitate and contact us!

Project manager

L. (Lamiaâ) Fareh El Btioui

L.fareh@has.nl

+31 (0) 88 890 37 74

HAS University of Applied Sciences, location Den Bosch

PO box 90108

5200 MA 's-Hertogenbosch

T + 31 (0)88 - 890 36 00

www.has.nl/en

Onderwijsboulevard 221

5223 DE 's-Hertogenbosch

This course is made possible by:

Light4Food signify Botany