

## Degree Program at a Glance

### Standard Duration of Study / Credits

4 semesters / 120 credits, fulltime study

### Degree

Master of Science (M. Sc.)

### Start

Winter and summer semesters

### Language of Instruction

English

### Admission Requirements

Above average completion of a Bachelor of Science degree at a university or a technical college in a qualifying degree program in the life sciences, such as horticultural sciences, horticulture, agricultural sciences, environmental sciences, forestry, biology and molecular biotechnology.

Criteria for acceptance include a solid basic knowledge of the life sciences, advanced understanding of the plant sciences, an ability to work scientifically and a sufficient knowledge of English (e.g. a score of at least 6.5 on the IELTS test). For more information, visit: <http://www.tum.de/en/studies/application-and-acceptance/university-admission/language-certificates/>.

### Costs per Semester

TUM does not charge tuition. Students are required to pay a semester fee for the basic student union fees and semester ticket for public transportation. For more information, visit: <http://www.tum.de/en/studies/fees-and-financial-aid/>

### More Information

[www.hortscience.wzw.tum.de](http://www.hortscience.wzw.tum.de)



## Contact

### Technical University of Munich

TUM School of Life Sciences Weihenstephan  
Study Program Division  
Agricultural and Horticultural Sciences

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## Master of Science

## Horticultural Science

Technical University of Munich  
TUM School of Life Sciences Weihenstephan  
Study Program Division  
Agricultural and Horticultural Sciences



## Objectives

This program focuses on aspects of the natural, technical and economic sciences relevant for horticultural crop production. Graduates of the program gain knowledge and skills in particular within the thematic complex of applied plant sciences, including:

- the biological, genetic and molecular basis of plant growth, of plant physiology, including environmental stress physiology, of disease development and plant-pathogen interactions, as well as an understanding of their coevolution
- concepts and methods of plant breeding, plant protection and plant production in fields, orchards, and in protected cultivation in greenhouses and other closed production systems
- material and energy flows in horticultural cropping systems and awareness of the factors impacting crop physiology and crop quality
- means of classical plant biotechnology for in vitro crop propagation and molecular biotechnology for crop improvement.

## Recommended Prerequisites

The following interests and abilities are conducive to successful completion of the program:

- applied plant sciences, especially horticultural crops (fruits, vegetables, nuts, herbs, medicinal plants, ornamentals)
- scientific research
- work in international teams

## Study Structure

Example study structure  
Start in winter semester

Semester 1	<b>Required modules (30 ECTS):</b>  Crop Biotechnology   Crop Physiology: Growth and Development of Plants   Crop Quality: Basics of Quality Control and Assurance   Ecophysiology: Technical Procedures and Principles of Protected Cultivation   Research Methods and Economic Research Project
Semester 2 + Semester 3	<b>Elective modules with the following options for specialization (60 ECTS):</b> <ul style="list-style-type: none"><li>• From Genes to Plants</li><li>• From Plants to Genes</li><li>• Control and Optimization of Horticultural Systems</li><li>• Sustainable Fruit Production</li><li>• High Value Crops</li></ul> <b>At least 20 ECTS must be completed at a partner institution:</b> <ul style="list-style-type: none"><li>• BOKU, Vienna, Austria</li><li>• University of Bologna, Italy</li><li>• Free University of Bozen, Italy</li><li>• Humboldt University, Berlin, Germany</li><li>• Szent Istvan University, Budapest, Hungary</li></ul>
Semester 4	Master's Thesis (25 ECTS)   Master's Colloquium (5 ECTS)

## Special Features

- An international program taught entirely in English and carried out by a consortium of six European universities
- Scientific and research-oriented training for the horticultural industry and its upstream and downstream sectors
- TUM a top address for teaching and research in modern, applied plant sciences
- International experience at one of our partner universities
- Elective courses from a large range of possible specializations, including all major horticultural crop classes as well as advanced economics, production technologies, ecophysiology, product quality or plant breeding
- Award-winning program: Erasmus Mundus Award 2008 and 2013, for raising the quality of European university education and promoting intercultural exchange

## Occupational Profile

Graduates of this program are qualified to hold executive positions in enterprises of horticulture and related industries, such as sectors of the pharmaceutical industry active in plant production and for research positions in the public or private sector conducting plant scientific research.