

Bachelor's of Science- Controlled Environ- ment Agriculture

Northern Michigan University's Controlled Environment Agriculture program provides students with an interdisciplinary education engaging them in multiple aspects of the controlled environment agriculture industries and preparing them for a wide range of career opportunities within those industries.

There is an Controlled Environment Agriculture Advisory Council with notable members that are important in not only the community but the State as well. NMU met with several industry representatives who indicated they would hire every program graduate. They said our curriculum is spot-on and our students will be highly employable with varied skill sets integral and applicable to all indoor growing scenarios.

Skills and Competencies

The CEA Bachelor's Degree provides students with an interdisciplinary education engaging them in multiple aspects of the controlled environment agriculture industries and preparing them for a wide range of career opportunities within those industries. As a Controlled Environment Agriculture student you will learn to:

Integrate indoor agriculture growing techniques to controlled environment agriculture for scaled-up commercial crop production.

Apply background principles of plant chemistry and plant physiology to optimize crop yields.

Assess various mechanical, electrical, and plumbing system concepts and designs within different types of controlled environment agriculture facilities.

Describe different food system networks, distribution, and associated societal impacts.

Develop standard procedures and protocols for fresh produce production.

Apply fundamental business practices to controlled environment agriculture operations.

Course Work

This degree includes the following courses as part of the program requirements, and specific major

General Education Courses (30-40 cr.)

Technical Concentration (29 cr.)

IA101	Indoor Farming Foundations (3 cr.)
IA130	Indoor Living Environments (3 cr.)
IA220	Innovative Growing Systems (3 cr.)
IA250	Future Farmers (3 cr.)
IA315	CEA Building Systems (3 cr.)
IA340	CEA Commercial Crop Production (4 cr.)
IA425	Produce Safety Risk Management (4 cr.)
IA445	CEA Property Development (4 cr.)
CN278	Mechanical, Electrical and Plumbing Systems (3 cr.)
HV171	Basic Heating (4 cr.) or
HV172	Basic Refrigeration (4 cr.)
GC101	Introduction to Environmental Science (4 cr.)
GC317	Geography of Food Systems (4 cr.) or
HM205	Food and Film (4 cr.) or
HN210	Nutrition for Humans (4 cr.)
IM115	Basic Electricity for Industrial Technicians (2 cr.)

Other Required Courses (38 cr.)

BI111	Introductory Biology: Principles (4 cr.)
BI112	Introductory Biology: Diversity (4 cr.)
BI230	Plant Kingdom(4 cr.)
BI431	Plant Physiology (4 cr.)
CH111	General Chemistry I (5 cr.)
CH112	General Chemistry II (5 cr.)
ACT230	Fundamentals of Financial Accounting (4 cr.)
EC140	Consumer Economics (4 cr.) or
MA113	Finite Mathematics (4 cr.)
MGT121	Introduction to Business (4 cr.) or
MGT215	Entrepreneurship (4 cr.)
MKT230	Introduction to Marketing (4 cr.)

Recommended Electives:

BI412	Biostatistics
PR332	Corporate Social Responsibility

Career Development

You should begin the resume-building process as soon as you can. The Academic and Career Advisement Center can assist you with career planning, while Career Services will help you fine tune your resume and look for jobs related to your field. In the meantime, the more hands-on experience you have, the better the chances are that you will find a job or undergraduate research. Becoming involved in a professional related internship is a way to develop your professional skills and gain experience. Your academic course work is important as well, so be sure to maintain a high grade point average.

Additional Considerations

For the Bachelor's Degree in Controlled Environment Agriculture, the department recommends certain Minors and Certificates that pair well with the program. These include: Business Administration Minor, HVAC Minor, Plant-Based Wellness Certificate, and Cannabis Operations Certificate.

Job Outlook

The projected job growth is a 9 percent increase until 2029. With a variety of jobs there is a median salary of \$75,000 with this degree.

Potential Careers

Controlled Environment Agriculture Program prepares students for employment in the following areas:

CEA Grower

Research and Development Scientist

Integrated Pest Management Specialist

Project Engineer

Additional Resources and Information

For Career Planning and Opportunities:
Academic & Career Advisement Center
3302.1 C.B. Hedgcock
906-227-2971
www.nmu.edu/acac

Technology and Occupational Sciences
101 D. J. Jacobetti Complex
906-227-2190
www.nmu.edu/tos
tos@nmu.edu

For Job Search, Resume and Career Information:
Career Services
3302.3 C.B. Hedgcock
906-227-2800
www.nmu.edu/careers

For Information about NMU Student Organizations Associated with this Major Contact:
Center for Student Enrichment
1206 University Center
906-227-2439
www.nmu.edu/cse

Internet Resource Links:
www.careers.org
www.bls.gov

For more information visit:
<https://nmu.edu/bulletin/controlled-environment-agriculture>

Or Contact Kim Kolasa,
kimbersm@nmu.edu,
906-227-1529



**NORTHERN MICHIGAN
UNIVERSITY**

MARQUETTE, MICHIGAN

The Academic & Career Advisement Center
2022



What to do with
a major in...

Bachelors of Science-

Controlled Environment Agriculture

