



## 2 Fight Hunger

# Plant Biotechnology & Gene Editing

### ONLINE CERTIFICATE COURSE

## Discover. Explore. Innovate. Shape the Future of Agriculture.

DISCOVER THE TECHNOLOGIES TRANSFORMING  
AGRICULTURE AND BIOTECHNOLOGY.

Gain hands-on experience with molecular biology, DNA analysis, genomics, sequencing technologies, bioinformatics, and CRISPR gene editing through online laboratory exercises and real-world applications. Develop the knowledge and technical skills relevant to careers in agricultural biotechnology, plant breeding, molecular biology, genetics, genomics, bioinformatics, biotechnology research, and graduate education.

**Our Goal:** This course will focus on conventional and modern plant breeding methods, tools and technologies available for crop improvement.

Ideal for students, researchers, educators, and professionals interested in biotechnology and genetics.

### If you want to...

- Fight global hunger
  - Teach plant breeding
  - Work at a seed company (or already work at a seed company)
  - Start a public or private sector plant breeding program
  - Improve the efficiency of your plant breeding program
  - Research crop improvement
  - Add a plant breeding qualification to your resume
- Start a plant breeding career

...this course is  
for you!

**WHEN:** May 17 - August 20, 2027

**WHERE:** Online

**COST:** \$600 [public sector]  
\$1200 [private sector]

**APPLICATION DEADLINE**  
**JANUARY 1, 2027**





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### CORE TOPICS

- PCR & Primer Design
- DNA Extraction & Analysis
- RNA Analysis and qPCR
- CRISPR-Cas9 Gene Editing
- BLAST Bioinformatics
- NCBI Genome Databases
- Nanopore, Illumina, and Sanger Sequencing
- Genetic Mapping and Genomics
- Plant Transformation & Tissue Culture

“The course has strong foundational content and is clearly designed with student learning in mind. I thoroughly enjoyed the course and learned so much!”

–Sarah White, Global Plant Breeding Biotechnology Student



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**LEARN MORE**

**MICHIGAN STATE**  
UNIVERSITY