

# DIGITAL AGRICULTURE (MINOR)

College of Agriculture and Life Sciences

Program Website (<https://cals.cornell.edu/education/degrees-programs/digital-agriculture-minor>)

## Program Description

Declaring a minor in Digital Agriculture (DA) will provide you with new opportunities to study and do research in DA, gain new perspectives on the future of agriculture, network across the university, and engage with the Cornell Institute for Digital Agriculture (<https://digitalagriculture.cornell.edu/>) (CIDA).

## Academic Standards

### Grade Requirements

All courses must be taken for a letter grade. Grades of S/U or SX/UX will not be accepted.

Each course must be completed with a grade of C or better to count toward the minor.

### Minor Declaration Information

Please consult with the Animal Science Undergraduate Program Coordinator (ANSC\_Undergrad@cornell.edu) if you are interested or have questions.

## Program Information

- Minimum Credits for Minor: 16

## Minor Requirements

No more than two courses taken for your major may count toward the DA minor to meet the requirements. For Elective Courses, both must be outside the student's major. Students may not "double count" any course to meet the requirements of the DA minor with other minors (i.e., cannot use the same course to fulfill two different minor requirements).

Code	Title	Hours
<b>Required Courses</b>		
ALS 1110	Introduction to Digital Agriculture	2

Code	Title	Hours
<b>Data Science/Computer Science</b>		
Select one of the following:		
CS 1110	Introduction to Computing: A Design and Development Perspective	4
CS 1380	Data Science for All	4
INFO 2950	Introduction to Data Science	4
An advanced programming or data science technical course as approved by minor advisor (3-4 cr)		

Code	Title	Hours
<b>Ethical Issues that Inform Digital Agriculture</b>		
Select one of the following:		
ENGR 3600	Ethical Issues in Engineering Practice	3

GDEV 3400	Agriculture, Food, Sustainability and Social Justice	3
INFO 1200	Information Ethics, Law, and Policy	3
INFO 4145	Privacy and Security in the Data Economy	3
Other courses as approved by the minor advisor.		

Code	Title	Hours
<b>Ag Production Systems <sup>1</sup></b>		
Select one of the following:		
ANSC 2000	Sustainable Food and Companion Animal Systems and Perspectives	3
ANSC 2500	Dairy Cattle Principles	3
ANSC 3510	Dairy Herd Management	4
ENTOM 2030	Honey Bees: Their Intriguing Biology and Interactions with Humans and More	3
PLSCI 3025	Hydroponic Food Crop Production and Management	4
PLSCI 3030	FoodCycle: Systems Thinking Toward Circular Economy for Organic Resources	3
PLSCI 3350	Sustainable Orchard Management	2-3
PLSCI 4140	Global Cropping Systems and Sustainable Development	3

Code	Title	Hours
<b>Elective Courses <sup>2</sup></b>		
Select two of the following:		
PLSCI 4175	Production and Management of Greenhouse Crops	4
PLSCI 2110	Field Crop Systems	4
PLSCI 4290	Remote Sensing and Modeling for Ecosystems	3
PLSCI 2200	Introduction to Mapping and Spatial Analysis with GIS	3
PLSCI 4200	Geographic Information Systems (GIS): Concepts and Application	3
PLSCI 4720	Nutrient and Carbon Cycling and Management in Ecosystems	3
PLSCI 4100	Plant Responses to Environmental Stresses and Global Climate Change	3
PLSCI 6200	Analysis of Spatial Data: A Case-Based Approach	3
PLSCI 4660	Soil Ecology	3-4
PLSCI 3210	Soil and Crop Management for Sustainability	3
PLSCI 3650	Environmental Chemistry: Soil, Air, and Water	3
PLSCI 3350	Sustainable Orchard Management	2-3
PLSCI 3025	Hydroponic Food Crop Production and Management	4
PLSCI 3420	Plant Physiology, Lectures	3
PLSCI 3430	Molecular Biology and Genetic Engineering of Plants	2
PLSCI 4000	Concepts and Techniques in Computational Biology	4
ANSC 3510	Dairy Herd Management	4
ANSC 4120	Whole-Farm Nutrient Management	4
ANSC 4310	Animal Genomics and Epigenomics	3
ANSC 3300	Fish Physiology	3
BEE 2510	Engineering Processes for Environmental Sustainability	3
BEE 3299	Sustainable Development	3

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BEE 4530	Computer-Aided Engineering: Applications to Biological Processes	3
BEE 3900	Bio-Robotics	3
BEE 4550	Biologically Inspired Microsystems Engineering	2
CRP 4080	Introduction to Geographic Information Systems (GIS)	4
FDSC 2000	Introduction to Physiochemical and Biological Aspects of Foods	3
FDSC 4210	Food Engineering Principles	4
FDSC 4250	Food Processing: Conventional and Emerging Technologies	2
INFO 2921	Inventing an Information Society	3
INFO 3950	Advanced Data Analytics	3
INFO 4310	Interactive Information Visualization	3
INFO 4320	Introduction to Rapid Prototyping and Physical Computing	4
ECE 2720	Data Science for Engineers	4
ORIE 3120	Practical Tools for Operations Research, Machine Learning and Data Science	4
ORIE 4580	Simulation Modeling and Analysis	4
ORIE 4820	Data-Driven Decision Modeling and Analysis	3
ENGRI 1200	Introduction to Nanoscience and Nanoengineering	3
ENGRI 1310	Introduction to Biomedical Engineering	3
ENGRI 1130	Sustainable Engineering of Energy, Water, Soil, and Air Resources	3
ECE 2300	Digital Logic and Computer Organization	4
ECE 4250	Digital Signal Processing and Statistical Inference	4
ECE 4760	Digital Systems Design Using Microcontrollers	4
ECE 5470	Computer Vision	3
ECE 3140	Embedded Systems	4
MAE 4180	Autonomous Mobile Robots	3
CS 4750	Foundations of Robotics	4
BME 4390	Circuits, Signals and Sensors: Instrumentation Laboratory	3
EAS 3030	Introduction to Biogeochemistry	4
ANSC 4880	Global Food, Energy, and Water Nexus – Engage the US, China, and India for Sustainable Future	3-4
AEM 6455	Toward a Sustainable Global Food System: Food Policy for Developing Countries	3
INFO 4200	Information Policy: Applied Research and Analysis	3
INFO 4240	Designing Technology for Social Impact	4
FDSC 3960	Food Safety Assurance	2

<sup>1</sup> Courses on this list or as approved by the minor advisor. Course must have either a prerequisite course at 2000 or greater level or more than two prerequisite courses.

<sup>2</sup> The list includes courses that may be used to fulfill the elective course requirement for the DA minor. The selected courses must be outside of the students major.