

COMPUTER SCIENCE + ANIMAL SCIENCES, BS

for the degree of Bachelor of Science Major in Computer Science + Animal Sciences

Computer Science + Animal Sciences (CS + ANSC) is a first-of-its-kind partnership between The Grainger College of Engineering's Department of Computer Science and the Department of Animal Sciences in ACES. Students will be prepared to work with sensor technology, large data sets, and predictive analytics, all aimed at improving the health and well-being of production animals and pets.

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Code	Title	Hours
Composition and Speech (choose 1 from):		6-7
RHET 105 & CMN 101	Writing and Research and Public Speaking	
CMN 111 & CMN 112	Oral & Written Comm I and Oral & Written Comm II	
Advanced Composition (students select from Gen Ed List)		3-4
Cultural Studies		
Western Culture (students select from Gen Ed List)		
Non-Western Culture (students select from Gen Ed List)		
US Minority Culture (students select from Gen Ed List)		
Language other than English (at or above 3rd level)		
Natural Sciences and Technology		8
CHEM 102 & CHEM 103	General Chemistry I and General Chemistry Lab I	
CHEM 104 & CHEM 105	General Chemistry II and General Chemistry Lab II	
Humanities and the Arts (students select from Gen Ed List)		6
Social and Behavioral Sciences		6-7
ECON 102 or ACE 100	Microeconomic Principles Introduction to Applied Microeconomics	
Students choice from Gen Ed List		
Mathematical Foundations (fulfills Quantitative Reasoning I & II)		
CS 361	Probability & Statistics for Computer Science	
MATH 220 or MATH 221	Calculus Calculus I	
MATH 225 or MATH 257	Introductory Matrix Theory Linear Algebra with Computational Applications	
MATH 231	Calculus II	
Computer Sciences Core		
CS 100	Computer Science Orientation	
CS 124	Introduction to Computer Science I	
CS 128	Introduction to Computer Science II	
CS 173	Discrete Structures	
CS 225	Data Structures	
CS 222	Software Design Lab	

CS 374 Introduction to Algorithms & Models of Computation

CS 357 or CS 421 Numerical Methods I Programming Languages & Compilers

Computer Science Technical Track (two options)

CS 233 & CS 241 Computer Architecture and

OR

CS 240 & Two 400-level CS courses Any two (2) 400-level CS courses above CS 403 except CS 421 and CS 491

Animal Sciences Core

ANSC 100 Intro to Animal Sciences
 ANSC 221 Cells, Metabolism and Genetics
 ANSC 222 Anatomy and Physiology
 ANSC 223 Animal Nutrition
 ANSC 224 Animal Reproduction and Growth
 ANSC 398 UG Experiential Learning
 ANSC 498 Integrating Animal Sciences

Applied Animal Sciences Courses (choose 3) 9

ANSC 201 Principles of Dairy Production
 ANSC 204 Intro Dairy Cattle Evaluation
 ANSC 205 World Animal Resources
 ANSC 206 Horse Management
 ANSC 211 Breeding Animal Evaluation
 ANSC 219
 ANSC 250 Companion Animals in Society
 ANSC 301 Food Animal Production, Management, and Evaluation
 ANSC 305 Human Animal Interactions
 ANSC 307 Companion Animal Management
 ANSC 309 Meat Production and Marketing
 ANSC 310 Meat Selection and Grading
 ANSC 312 Advanced Livestock Evaluation
 ANSC 313 Horse Appraisal
 ANSC 314 Adv Dairy Cattle Evaluation
 ANSC 322 Livestock Feeds and Feeding
 ANSC 370 Companion Animal Policy
 ANSC 400 Dairy Herd Management
 ANSC 401 Beef Production
 ANSC 402 Sheep and Goat Production
 ANSC 403 Pork Production
 ANSC 404 Poultry Science
 ANSC 405
 ANSC 407 Animal Shelter Management
 ANSC 424 Pet Food & Feed Manufacturing
 ANSC 435 Milk Quality and Udder Health
 ANSC 437
 ANSC 471 ANSC Leaders & Entrepreneurs

Basic Animal Sciences Courses (choose 3) 9

ANSC 251 Epidemics and Infectious Diseases
 ANSC 306 Equine Science
 ANSC 331

ANSC 350	Cellular Metabolism in Animals
ANSC 363	Behavior of Domestic Animals
ANSC 366	Animal Behavior
ANSC 406	Zoo Animal Conservation Sci
ANSC 409	Meat Science
ANSC 420	Ruminant Nutrition
ANSC 421	Minerals and Vitamins
ANSC 422	Companion Animal Nutrition
ANSC 431	Advanced Reproductive Biology
ANSC 438	Lactation Biology
ANSC 440	Applied Statistical Methods I
ANSC 441	Human Genetics
ANSC 444	Applied Animal Genetics
ANSC 445	Statistical Methods
ANSC 446	Population Genetics
ANSC 447	
ANSC 448	
ANSC 449	Biological Modeling
ANSC 450	Comparative Immunobiology
ANSC 451	Microbes and the Anim Indust
ANSC 452	Animal Growth and Development
ANSC 453	
ANSC 467	Applied Animal Ecology
ANSC 509	Muscle Biology
ANSC 520	Protein and Energy Nutrition
ANSC 521	Regulation of Metabolism
ANSC 522	Advanced Ruminant Nutrition
ANSC 523	Techniques in Animal Nutrition
ANSC 524	Nonruminant Nutrition Concepts
ANSC 525	Topics in Nutrition Research
ANSC 526	Adv Companion Animal Nutrition
ANSC 533	Repro Physiology Lab Methods
ANSC 541	Regression Analysis
ANSC 542	Applied Bioinformatics
ANSC 543	Bioinformatics
ANSC 545	Statistical Genomics
ANSC 554	
ANSC 561	

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a third level of a language other than English. See the corresponding section on the Degree General and Education

Requirements page (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

First Year

First Semester	Hours	Second Semester	Hours
CS 124		3 CS 128	3
CS 100		1 CS 173	3
MATH 220		5 MATH 231	3
CMN 101 or RHET 105		3 CHEM 102	3
ANSC 100		4 CHEM 103	1
		RHET 105 or CMN 101	4
		16	17

Second Year

First Semester	Hours	Second Semester	Hours
CS 225		4 Language Other than English (3rd level)	3
CS 222		1 CS 240 (now CS 340)	3
CHEM 104		3 ANSC 223	3
CHEM 105		1 ANSC 224	4
ANSC 221		3 Applied Animal Science course	3
ANSC 222		3	
ANSC 398		1	
		16	16

Third Year

First Semester	Hours	Second Semester	Hours
MATH 257		3 CS 374	4
Basic Animal Science Course		3 CS 361	3
Applied Animal Science course		3 CS 4XX	3
General Education course		3 General Education course	3
CS 4XX		4 General Education course	3
		16	16

Fourth Year

First Semester	Hours	Second Semester	Hours
CS 357 or 421		3 ANSC 498	2
Basic Animal Science course		3 General Education course	3
Applied Animal Science course		3 General Education course	3
General Education course		3 Basic Animal Science course	3
General Education course		3 ECON 102 or ACE 100	3
		15	14

Total Hours 126

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Please see the Computer Science advisor in 1210 Siebel Center, as well as the Animal Sciences Undergraduate Curriculum Coordinator, Dr. David Miller, 116 Animal Sciences Lab.

Animal Sciences

Animal Sciences Website (<https://ansc.illinois.edu/>)
 Animal Sciences Laboratory
 1207 West Gregory Drive
 Urbana, IL 61801
 217-333-3131
 Email: ansc@illinois.edu

College of Agricultural, Consumer & Environmental Sciences

College of Agricultural, Consumer & Environmental Sciences Website
 (<https://aces.illinois.edu/>)

ACES Office of Academic Programs

128 Mumford Hall
 1301 West Gregory Drive
 Urbana, IL 61801

Advising

Phone: 217-333-3570
 Email: anscadvising@illinois.edu
 Advising Website (<https://ansc.illinois.edu/about/contact-us/#paragraph-499>)

Admissions

ACES Undergraduate Admissions (<https://aces.illinois.edu/admissions/>)
visitACES@illinois.edu
 217-333-3380
 University of Illinois Undergrad Admissions (<https://www.admissions.illinois.edu/>)

Computer Science

Computer Science degree information (<https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/#requirements>)
 CS + Crop Science website (<https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/computer-science-crop-sciences/>)
 Computer Science Website (<https://cs.illinois.edu/about/people/department-faculty/>)
 Computer Science Faculty (<https://cs.illinois.edu/about/people/department-faculty/>)
 Computer Science email (undergrad@cs.illinois.edu)

The Grainger College of Engineering Admissions (<https://grainger.illinois.edu/>)
 The Grainger College of Engineering
