# COMPUTER SCIENCE & ANIMAL SCIENCES, BS & ANIMAL SCIENCE, MANSC

*for the degree of Bachelor of Science in Computer Science & Animal Sciences and the Master of Animal Sciences in Animal Science*

**animal sciences department information:** https://ansc.illinois.edu/
**computer science degree information:** https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs#requirements (https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/#requirements)
**overview of college admissions & requirements:** Agricultural, Consumer & Environmental Sciences (http://catalog.illinois.edu/schools/aces/academic-units/#text)
**college websites:** https://aces.illinois.edu/ **and** https://engineering.illinois.edu
**computer science email:** undergrad@cs.illinois.edu (academic@cs.illinois.edu)
**animal sciences email:** ANSCadvising@illinois.edu

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.

*for the degree of Bachelor of Science in Computer Science & Animal Sciences and the Master of Animal Sciences in Animal Science*

The joint BS (CS+ANSC)/MANSC program integrates a baccalaureate degree (BS) preparation in Computer Sciences and Animal Sciences (CS+ANSC) with a non-thesis Master of Animal Sciences (MANSC) preparation. Students enrolled in the BS (CS+ANSC) program that have completed at least 60 credit hours of degree requirements and that have a minimum GPA of 3.0 are eligible to apply and be admitted to this program. Students that have a GPA above 2.75 may be admitted on probationary status.

The Department of Animal Sciences will support the application to the MANSC program of the students in this joint program that have completed the required 126 credit hours towards a BS (CS+ANSC) degree (including 40 hours of 300- or 400- level courses) and that have a minimum GPA of 3.0. Up to 12 graduate-level (400- or 500-level) credit hours from the BS program will count towards the 32 credit-hour requirement of the MANSC program.

**for the Degree of Bachelor of Science Major in Computer Science & Animal Sciences**

| 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 | Microeconomic Principles | |
| or ACE 100 | 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 | Calculus | |
| or MATH 221 | Calculus I | |
| MATH 225 | Introductory Matrix Theory | |
| MATH 231 | Calculus II | |
| **Computer Sciences Core** | | |
| CS 100 | Freshman Orientation | |
| CS 125 | Introduction to Computer Science | |
| CS 126 | Software Design Studio | |
| CS 173 | Discrete Structures | |
| CS 225 | Data Structures | |
| CS 374 | Introduction to Algorithms & Models of Computation | |
| CS 357 | Numerical Methods I | |
| or CS 421 | Programming Languages & Compilers | |
| **Computer Science Technical Track (two options)** | | |
| CS 233 & CS 241 | Computer Architecture and System Programming | |
| OR | | |
| CS 240 | Introduction to Computer Systems | |
| & Two CS 400 | Any two (2) 400-level CS courses except 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 | |

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| ANSC 219 | Meat Technology |
| 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 | Advanced Dairy Management |
| ANSC 407 | Animal Shelter Management |
| ANSC 424 | Pet Food & Feed Manufacturing |
| ANSC 435 | Milk Quality and Udder Health |
| ANSC 437 | Adv Reproductive Management |
| ANSC 471 | ANSC Leaders & Entrepreneurs |
| **Basic Animal Sciences Courses (choose 3)** | **9** |
| ANSC 251 | Epidemics and Infectious Diseases |
| ANSC 306 | Equine Science |
| ANSC 331 | Biology of Reproduction |
| 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 | Advanced Genetics and Genomics |
| ANSC 448 | Math Modeling in Life Sciences |
| ANSC 449 | Biological Modeling |
| ANSC 450 | Comparative Immunobiology |
| ANSC 451 | Microbes and the Anim Indust |
| ANSC 452 | Animal Growth and Development |
| ANSC 453 | Stem Cell Biology |
| 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 | Immunobiological Methods |
| ANSC 561 | Animal Stress Physiology |
| **Total Hours** | **126** |

Other Requirements

| **Requirement** |
|---|
| The required 126 hours must include a minimum of 40 hours of 300- and 400-level courses. |

**For the Degree of Master of Science in Animal Sciences Major in Animal Sciences**

| Code | Title | Hours |
|---|---|---|
| ANSC 590 | Animal Sciences Seminar [1] | 2 |
| or ANSC 591 | Grad Bioinformatics Seminar | |
| ANSC 440 | Applied Statistical Methods I [1] | 3-4 |
| or ANSC 445 | Statistical Methods | |
| or ANSC 448 | Math Modeling in Life Sciences | |
| or ANSC 449 | Biological Modeling | |
| Elective 400- or 500-level ANSC courses | (excludes ANSC 590, ANSC 591, ANSC 593) [2] | 18 to 19 |
| ANSC 593 | Res Studies in Animal Sciences [3] | 8 |
| **Total Hours** | | **32** |

## Other Requirements

| **Requirement** |
|---|
| Other Requirements and conditions may overlap |
| Minimum Hours Overall Required Within the Unit: 12 |
| A maximum of 12 graduate-level credit hours from the B.S. degree will count towards the MANSC degree |
| Minimum 500-level Hours Required Overall: 12 |
| Minimum GPA: 3.0 |

1 Equivalent course requires departmental approval

2 In consultation with their Animal Sciences faculty advisor, students will select courses that support the individual research studies project and strengthen career opportunities.

[3] The individual research studies project or internship experience and a written report will fulfill the ANSC 593 (Research Studies in Animal Sciences) capstone project requirement. The project or internship and the written product will be supervised by the Animal Sciences faculty mentor and provide evidence that the student can understand and apply the scientific method, interpret scientific information; and effectively communicate scientific information in a field of animal sciences.