

# JP: 10KL5890BS & 1PKS5890MANS: JP: COMPUTER SCIENCE & ANIMAL SCIENCES, BS & ANIMAL SCIENCE, MANSC

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## Completed Workflow

1. U Program Review (dforgacs@illinois.edu; eastuby@illinois.edu; aledward@illinois.edu)
2. 1538 Head (rwjohn@illinois.edu; jrevans@illinois.edu)
3. 1434 Head (namato@illinois.edu; vmaresh@illinois.edu; egunter@illinois.edu)
4. KP Committee Chair (mch@illinois.edu; bsnewell@illinois.edu; danko@illinois.edu; kcp@illinois.edu)
5. KP Dean (candyd@illinois.edu)
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7. KL Dean (aball@illinois.edu)
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9. Grad\_College (agrindly@illinois.edu; jch@illinois.edu; lowry@illinois.edu)
10. Provost (kmartens@illinois.edu)
11. Senate EPC (bjlehman@illinois.edu; kmartens@illinois.edu; moorhouz@illinois.edu)
12. Senate (jtempel@illinois.edu)
13. U Senate Conf (none)
14. Board of Trustees (none)
15. IBHE (none)
16. DMI (eastuby@illinois.edu; aledward@illinois.edu; dforgacs@illinois.edu)

## Approval Path

1. Mon, 23 Sep 2019 14:05:09 GMT  
Deb Forgacs (dforgacs): Approved for U Program Review
2. Mon, 23 Sep 2019 18:09:44 GMT  
Rodney W. Johnson (rwjohn): Approved for 1538 Head
3. Thu, 26 Sep 2019 05:08:10 GMT  
Elsa Gunter (egunter): Approved for 1434 Head
4. Tue, 29 Oct 2019 16:24:19 GMT  
Brooke Newell (bsnewell): Approved for KP Committee Chair
5. Wed, 30 Oct 2019 14:11:32 GMT  
Jean Hanks (jhanks): Approved for KP Dean
6. Wed, 30 Oct 2019 16:16:38 GMT  
Anthony Yannarell (acyann): Approved for KL Committee Chair
7. Wed, 30 Oct 2019 17:49:31 GMT  
Anna Ball (aball): Approved for KL Dean
8. Wed, 30 Oct 2019 18:42:39 GMT  
John Wilkin (jpwilkin): Rollback to KL Dean for University Librarian
9. Wed, 30 Oct 2019 18:45:27 GMT  
Anna Ball (aball): Rollback to KL Committee Chair for KL Dean
10. Thu, 31 Oct 2019 17:05:59 GMT  
Anthony Yannarell (acyann): Approved for KL Committee Chair
11. Thu, 31 Oct 2019 20:00:42 GMT  
Anna Ball (aball): Approved for KL Dean
12. Thu, 31 Oct 2019 20:35:07 GMT  
John Wilkin (jpwilkin): Approved for University Librarian
13. Wed, 20 Nov 2019 01:05:44 GMT  
Allison McKinney (agrindly): Approved for Grad\_College
14. Wed, 20 Nov 2019 01:19:21 GMT  
Kathy Martensen (kmartens): Approved for Provost
15. Tue, 10 Dec 2019 15:44:50 GMT  
Barbara Lehman (bjlehman): Approved for Senate EPC
16. Wed, 12 Feb 2020 22:15:38 GMT

Jennifer Roether (jtempel): Approved for Senate

17. Wed, 26 Feb 2020 23:17:03 GMT

Kathy Martensen (kmartens): Approved for U Senate Conf

18. Tue, 17 Mar 2020 20:41:08 GMT

Kathy Martensen (kmartens): Approved for Board of Trustees

19. Fri, 17 Apr 2020 22:06:37 GMT

Kathy Martensen (kmartens): Approved for IBHE

20. Thu, 28 May 2020 16:06:16 GMT

Emily Stuby (eastuby): Approved for DMI

## History

1. May 28, 2020 by Sandra Rodriguez-Zas (rodrgzzs)

Date Submitted: Mon, 16 Nov 2020 21:04:15 GMT

## Viewing: JP: 10KL5890BS & 1PKS5890MANS : JP: Computer Science & Animal Sciences, BS & Animal Science, MANSC

Changes proposed by: Sandra Rodriguez-Zas

## Proposal Type

### Proposal Type:

Joint Program (ex. Master of Public Health & PhD. in Community Health)

### This proposal is for a:

Revision

Proposal Title:

**If this proposal is one piece of a multi-element change please include the other impacted programs here. *example: A BS revision with multiple concentration revisions***

Revisions to the 4+1BS(CS+ANSC)/MANSC (key 887) due to the program requirements changes and addition of online delivery to the Animal Sciences, MANSC.

The revisions also impact Animal Sciences, MANSC (key 520) and 4+1 BS/MANSC (key 881) degrees.

### EP Control Number

EP.21.036

### Official Program Name

JP. Computer Science & Animal Sciences, BS & Animal Science, MANSC

### Effective Catalog Term

Fall 2021

**Sponsor College**

Agr, Consumer, & Env Sciences

**Sponsor Department**

Animal Sciences

**Sponsor Name**

Sandra Rodriguez Zas

**Sponsor Email**

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**College Contact**

Brianna Gregg

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## Program Description and Justification

**Justification for proposal change:**

The proposed revisions to the non-thesis Master of Animal Sciences (MANSC) program do not impact the BS component of this joint program. The Department of Animal Sciences (ANSC) has offered the non-thesis Master of Animal Sciences (MANSC) program since 2018 and 13 students have graduated or are in the process of completing graduation requirements. Surveys and feedback from students and faculty guide the proposed revision of the program requirements. The revisions will also impact the 4+1 BS/MANSC and the 4+1BS(CS+ANSC)/MANSC degrees.

The proposed revisions address two needs. First, the curriculum changes reflect the academic preparation needs communicated by the MANSC graduates. Second, the curriculum modifications enhance the alignment of learning experiences and opportunities between the students in the MANSC and in the traditional with-thesis Master of Science in Animal Sciences (MS) program. This alignment has been recommended by faculty advisors, instructors, and students in consideration that MANSC and MS students share advisors and may also share some research experiences and course work.

The proposed curricula changes include: a) higher flexibility on the statistic coursework requirements, b) enhanced research project experience, and c) higher flexibility on the credit hour requirement. The revised MANSC program is characterized by: i) overall requirement of 32 credit hours, ii) 12 credit hours of 500-level coursework, iii) 2 credit hour seminar requirement; and iii) at least 12 credit hours in ANSC course offerings. The present MANSC program is characterized by: i) overall requirement of 32 credit hours, ii) at least 12 credit hours of 500-level coursework, iii) 2 credit hour seminar requirement; and iii) at least 20 credit hours in ANSC course offerings.

The revision in the minimum number of credit hours in a statistics course is motivated by two factors, a) the post-graduation careers of many MANSC graduates do not require the statistical analysis expertise resulting from the present requirements, and b) some MANSC research studies (ANSC 593) are adequately supported by fewer credit hours in statistics and data analytics training than the present requirements. The revision of the maximum number of research project credit hours corresponds to the average commitment of MANSC students to impactful and enriching research studies (ANSC 593) mentored by ANSC faculty members. The revised requirement of 12 credit hours of 500-level offerings reflects the abundance of advanced 400-level courses in multiple areas of animal sciences that can benefit the students.

The MANSC program can be completed independent of other programs, or jointly with two baccalaureate (BS) programs, the ANSC 4+1 BS/ MANSC and the 4+1 BS(CS+ANSC)/MANSC. Parallel petitions are proposed to all three implementations of the MANSC program. The undergraduate requirements for the ANSC BS and the CS+ANSC BS remain unchanged.

The proposed revision to the MANSC program enables ANSC to continue offering advanced and timely graduate-level preparation, ensuring their competitiveness in the labor market or pursue of professional degrees. The revised MANSC program advances the land grant mission of the University of Illinois (UofI), College of ACES and Department of Animal Sciences, strengthens the competitiveness of the corresponding academic units, addresses industry workforce needs, and enhances the likelihood that our graduates will secure high-paying and high-ranking jobs in the areas of food production, health and well-being, environmental conservation, and sustainability.

**Is this program interdisciplinary?**

No

**Identify the existing programs to be joined:**

**Corresponding Program(s)**

Computer Science Animal Sciences, BS

Animal Sciences, MANSC (on campus online)

**Academic Level**

Graduate

Undergraduate

**CIP Code**

01.0901 - 01.0901

**Is This a Teacher Certification Program?**

No

**Will specialized accreditation be sought for this program?**

No

## **Admission Requirements**

**Desired Effective Admissions Term**

Fall 2021

**Is this revision a change to the admission status of the program?**

No

**Provide a brief narrative description of the admission requirements for this program. Where relevant, include information about licensure requirements, student background checks, GRE and TOEFL scores, and admission requirements for transfer students.**

The proposed revisions to the MANSC requirements do not impact the admission requirements. Applications to the MANSC program require baccalaureate degree transcripts, GPA  $\geq 3$ , resume, personal statement, Graduate Record Examination (GRE) general test scores, and three letters of recommendation. One letter of recommendation must be provided by an Animal Sciences faculty member committed to advise the student on a particular independent studies project. A departmental committee will evaluate the applications and recommend admissions.

\* Students enrolled in the joint programs will be able to apply a maximum of 12 graduate-level (400- or 500-level) credit hours from their B.S. degree in CS+ANSC towards the MANSC degree requirements. The 4+1 program will permit students to graduate with B.S. and MANSC degrees in as early as 5 years. Credit hours from the B.S. in CS+ANSC degree that are applied towards a second major, a minor or a transcriptable certificate cannot be used towards the MANSC degree. TOEFL requirements follow the Graduate College requirements. Applicants are expected to submit GRE scores.

\* 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.

\* The existing stand-alone MANSC program has a 6 credit hour requirement of an independent research project (ANSC 592/593). This requirement aims to address potential gaps in hands-on research experiences that undergraduate students from other institutions may have because the majority of the UofI students that pursue a degree encompassing Animal Sciences have either for-credit (ANSC 398) or non-transcribed research experiences. Students in the proposed joint program have the option to substitute, partially or completely, the 6 credit hours of independent research required in the stand-alone MANSC program for graduate-level (400- or 500-level) coursework. This substitution must be petitioned and approved by the departmental faculty committee that also evaluates applications to the joint program. Substitutions will be granted to students that present evidence of research experiences comparable to that expected of MANSC graduates.

#### **Describe how critical academic functions such as admissions and student advising are managed.**

The proposed revisions to the MANSC graduation requirements do not impact the academic functions. The program will be administered by the Department of Animal Sciences Graduate Programs Office including a Director of Graduate Studies and two personnel with graduate contact roles. The student is advised by the Animal Sciences faculty mentor in coursework, research study and career matters and by the Programs Office in administrative matters such as registration and petitions. Faculty members will review applications, make admission decisions, review the research studies memorandum of agreement between the student and advisor, and offer annual evaluations to the student.

- \* A committee of Animal Sciences faculty will review the applications and determine admissions.
- \* The Department of Animal Sciences directors of graduate and undergraduate programs together with faculty members of the joint program committee will implement, oversee and regularly evaluate the progress of these programs.
- \* All students in the joint program will have an undergraduate and a graduate studies advisors. Their joint advising will ensure the student receives guidance on academic activities that support the effective completion of the joint program requirements and target the students' career goals. Students pursuing research project credit hours will be advised by the faculty member overseeing the research project.

## **Enrollment**

#### **Describe how this revision will impact enrollment and degrees awarded.**

No significant impact in the enrollment and degree awarded is expected, though a 5% increase in either metric is likely in the next 5 years.

#### **Estimated Annual Number of Degrees Awarded**

##### **Year One Estimate**

0 (2, 1 year after admission)

##### **5th Year Estimate (or when fully implemented)**

5

## **Delivery Method**

#### **Is this program available on campus and online?**

No

#### **This program is available:**

On Campus

## Budget

**Are there budgetary implications for this revision?**

No

**Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?**

No

### Additional Budget Information

The proposed revision is not expected to have an impact on the budget.

The proposed program builds on existing undergraduate and graduate programs. No additional costs are anticipated because the existing programs and most of the animal sciences courses are at under-capacity and computer sciences courses have dedicated spaces for ANSC students. Students will be assessed tuition charges corresponding to the BS(CS+ANSC) first, and once admitted by the Graduate College, tuition charges will correspond to those of the MANSC program. No campus or external resources will be requested. Students in the proposed program will be enrolled in the existing BS and MANSC programs and will take existing courses (please refer to the Appendix). The existing programs and most of the animal sciences courses are at under-capacity and computer sciences has allocated space for ANSC students. The proposed joint program and the expected enrollment will make effective use of the resources in place. Students pursuing independent projects will benefit from ongoing researcher projects directed by animal sciences faculty. No new courses are proposed.

## Resource Implications

Facilities

**Will the program require new or additional facilities or significant improvements to already existing facilities?**

No

Technology

**Will the program need additional technology beyond what is currently available for the unit?**

No

Non-Technical Resources

**Will the program require additional supplies, services or equipment (non-technical)?**

No

## Resources

For each of these items, be sure to include in the response if the proposed new program or change will result in replacement of another program(s). If so, which program(s), what is the anticipated impact on faculty, students, and instructional resources? Please attach any letters of support/acknowledgement from faculty, students, and/or other impacted units as appropriate.

### Attach File(s)

mansc\_revision\_lettersupportACE\_seanfox\_oct2020.docx

### Faculty Resources

**Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.**

The proposed revision is not expected to have an impact on faculty resources.

The progression of academic resources and degree demands evidenced in the departmental profiles (<https://dmi.illinois.edu>) support the expected enrollment in the proposed joint program. In recent years, 7 junior tenure-track faculty and 3 specialized faculty have joined the Department of Animal Sciences, and all these positions have teaching responsibilities. Similar instructional hire trends are expected in the near future. Since 2014, the number of undergraduate students in Animal Sciences has oscillated between 534 students (2014-2015) and 495 students(2017-2018) while the number of graduate students (master and doctoral levels) has oscillated between 99 students (2014-2015) and 89 students(2017-2016). Similar patterns are observed in the number of BS degrees ranging from 157 degrees (2015-2016) to 111 degrees (2018-2019) meanwhile the number of master's degrees ranged between 14 degrees (2014-2015) and 23 degrees (2017-2018). The number of BS degrees per faculty FTE has oscillated from 4.7 (2015-2016) to 3.4 (2018-2019) whereas the number of master's degrees per faculty FTE is 0.7 at present. Also, ANSC students have allocated spaces in the required computer sciences courses. The previous information demonstrates that the present conditions enable the UofI to support the higher BS(CS+ANSC) and MANSC enrollment numbers that are anticipated from the joint program with no or minimal resource implication.

### Library Resources

**Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.**

The proposed revision is not expected to have an impact on the library resources.

Current University Library resources are adequate to meet the needs of the two programs (CS+ANSC BS and MANSC) on which this proposal is based. Given that expected enrollment in the program is expected to be limited (5-10 students in the first 5 years), we do not foresee that this program will place additional significant demands on Library resources.

### Instructional Resources

**Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?**

No

**Does the program include other courses/subjects impacted by the creation/revision of this program?**

No

## Financial Resources

### How does the unit intend to financially support this proposal?

The proposed revision is not expected to change the present financial support offered by the unit.

The proposal integrates programs that already in place. The instructional resources are not at capacity and the education and mentoring of students in the proposed self-supported program will not result in additional fixed costs. Once the program is established, a potential minor increase in variable costs associated with additional teaching assistant support can be defrayed with income from the self-supported MANSC degree.

### Will the unit need to seek campus or other external resources?

No

### Are you seeking a change in the tuition rate or differential for this program?

No

## Program Regulation and Assessment

**Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning. (Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable).**

The learning objectives and learning outcomes assessment remain unchanged. Briefly, the MANSC graduate is expected to demonstrate: 1. Graduate-level understanding of essential concepts and approaches in the area of animal science specialization. 2. Capacity to execute a supervised research project including: a) understanding of the scientific method, research objectives, materials and methods, basic data analysis, and appreciation of the findings; and b) leadership on the implementation of essential research activities. 3. Ability to effectively communicate essential disciplinary knowledge and research project findings in oral and written formats. 4. Aptitude to advocate for interdisciplinary research and education efforts to improve food security, food safety, animal and human health and wellbeing or environmental stewardship. The required overall GPA  $\geq 3$  for graduation helps in the assessment of learning outcome #1. The discipline seminar aids in the assessment of learning outcomes #3. The graded research project report complement the assessment of learning outcomes #2 and #4. Program assessment information is summarized in a report and shared with the unit executive officer, faculty members at large and affiliated to the graduate program committee, and with members of the graduate student association. Outcomes from the annual study of enrollment, progression, and degree completion information will be discussed. Plans to address weaknesses will be developed in consultation with the previous stakeholders.

Alignment to licensure or certifications is not applicable.

### Is the career/profession for graduates of this program regulated by the State of Illinois?

No

## Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: <https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf>). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.



All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

### Revised programs

MANSC\_Animal Science side-by-side\_aug312020.xlsx

Attach a side-by-side comparison with the existing program AND, if the revision references or adds “chose-from” lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

**Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.**

The proposed program revision does not impact the program description.

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.

### Statement for Programs of Study Catalog

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

| Code   | Title  | Hours      |
|--|--|------------|
| <b>Composition and Speech (choose 1 from):</b>                               |  | <b>6-7</b> |
| RHET 105<br>& CMN 101  | Writing and Research<br>and Public Speaking                        |            |
| CMN 111<br>& CMN 112   | Oral & Written Comm I<br>and Oral & Written Comm II                |            |
| <b>Advanced Composition (students select from Gen Ed List)</b>               |  | <b>3-4</b> |
| <b>Cultural Studies</b>  |  |            |
| 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)                       |  |            |
| <b>Language other than English (at or above 3rd level)</b>                   |  |            |
| <b>Natural Sciences and Technology</b>                                       |  | <b>8</b>   |
| CHEM 102<br>& CHEM 103   | General Chemistry I<br>and General Chemistry Lab I                 |            |
| CHEM 104<br>& CHEM 105   | General Chemistry II<br>and General Chemistry Lab II               |            |
| <b>Humanities and the Arts (students select from Gen Ed List)</b>            |  | <b>6</b>   |
| <b>Social and Behavioral Sciences</b>  |  | <b>6-7</b> |
| ECON 102<br>or ACE 100   | Microeconomic Principles<br>Introduction to Applied Microeconomics |            |
| Students choice from Gen Ed List   |  |            |
| <b>Mathematical Foundations (fulfills Quantitative Reasoning I &amp; II)</b> |  |            |
| CS 361   | Probability & Statistics for Computer Science                      |            |

|   |  |
|---|--|
| MATH 220<br>or MATH 221                               | Calculus<br>Calculus I   |
| MATH 225  | Introductory Matrix Theory   |
| MATH 231  | Calculus II  |
| <b>Computer Sciences Core</b>                         |  |
| CS 100  | Freshman Orientation   |
| CS 125  | Intro 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<br>or CS 421                                   | Numerical Methods I<br>Programming Languages & Compilers                           |
| <b>Computer Science Technical Track (two options)</b> |  |
| CS 233<br>& CS 241                                    | Computer Architecture<br>and System Programming                                    |
| OR  |  |
| CS 240<br>& Two CS 400                                | Introduction to Computer Systems<br>Any two (2) 400-level CS courses except CS 491 |
| <b>Animal Sciences Core</b>                           |  |
| 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  |
| <b>Applied Animal Sciences Courses (choose 3)</b>     |  |
| 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  | 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      |
| <b>Basic Animal Sciences Courses (choose 3)</b> |                                   |
| 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 510  | Course ANSC 510 Not Found         |
| 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          |

9

**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<br>or ANSC 591                               | Animal Sciences Seminar <sup>1</sup><br>Grad Bioinformatics Seminar  | 2         |
| ANSC 440<br>or ANSC 445<br>or ANSC 448<br>or ANSC 449 | Applied Statistical Methods I <sup>1</sup><br>Statistical Methods<br>Math Modeling in Life Sciences<br>Biological Modeling | 2 to 5    |
| Elective 400- or 500-level<br>ANSC courses            | (excludes ANSC 590, ANSC 591, ANSC 593) <sup>2</sup>   | 17 to 20  |
| ANSC 593  | Res Studies in Animal Sciences <sup>3</sup>  | 8         |
| <b>Total Hours</b>                                    |  | <b>32</b> |

## 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

- <sup>1</sup> Equivalent course requires departmental approval
- <sup>2</sup> In consultation with their Animal Sciences faculty advisor, students will select courses that support the individual research studies project and strengthen career opportunities.
- <sup>3</sup> 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.

## EP Documentation

## DMI Documentation

### Banner/Codebook Name

BS: BS CS&ANSC/MANSC ANSC - UIUC & MANSC: BS CS&ANSC/MANSC ANSC - UIUC

### Program Code:

JP. 10KL5890BS & 1PKS5890MANS

### Conc Code

5890

### Program Reviewer Comments

**Kathy Martensen (kmartens)** (Sat, 14 Nov 2020 16:22:09 GMT): Rollback: From: Moorhouse, Linda <moorhouz@illinois.edu> Sent: Thursday, November 12, 2020 12:02 PM To: Rodriguez Zas, Sandra Luisa <rodrgzzs@illinois.edu> Cc: Martensen, Kathy <kmartens@illinois.edu>; Gregg, Brianna J

<bjgray2@illinois.edu> Subject: JP: Animal Sciences BS & MANSC and JP: Computer Science & Animal Sciences, BS & Animal Science, MANSC Hi Sandra: I'm looking at your joint program revisions in CIM-P. In both joint programs (CS+ANSC, BS/MANSC and BS/MANSC), there is a deactivated course listed in the undergrad "to choose from: lists. Does this need to come out of three course lists in the BS and the one course list in the CS+ANSC areas in the Academic Catalog or are you planning to replace it with something else? The course is ANSC 510.

**Anna Ball (aball) (Mon, 16 Nov 2020 20:13:01 GMT):**Rollback: See provost office comments for rollback

**Anna Ball (aball) (Fri, 20 Nov 2020 16:39:30 GMT):**Rollback: Attachment needed

Key: 887

## Academic Catalog program of study entries (BS CS+ANSC, and MANSC)

### Degree of Bachelor of Science Major in Computer Science & Animal Sciences

| Code   | Title  | Hours        |
|--|--|--------------|
| <b>Composition and Speech (choose 1 from):</b>                               |  | <b>6-7</b>   |
| <a href="#"><u>RHET 105</u></a><br>& <a href="#"><u>CMN 101</u></a>          | Writing and Research<br>and Public Speaking          | 4&3          |
| <a href="#"><u>CMN 111</u></a><br>& <a href="#"><u>CMN 112</u></a>           | Oral & Written Comm I<br>and Oral & Written Comm II  |              |
| <b>Advanced Composition (students select from Gen Ed List)</b>               |  | <b>3-4</b>   |
| <b>Cultural Studies</b>  |  |              |
| Western Culture (students select from Gen Ed List)                           |  | 3            |
| Non-Western Culture (students select from Gen Ed List)                       |  | 3            |
| US Minority Culture (students select from Gen Ed List)                       |  | 3            |
| <b>Language other than English (at or above 3rd level)</b>                   |  |              |
| <b>Natural Sciences and Technology</b>                                       |  | <b>8</b>     |
| <a href="#"><u>CHEM 102</u></a><br>& <a href="#"><u>CHEM 103</u></a>         | General Chemistry I<br>and General Chemistry Lab I   | 4            |
| <a href="#"><u>CHEM 104</u></a><br>& <a href="#"><u>CHEM 105</u></a>         | General Chemistry II<br>and General Chemistry Lab II | 4            |
| <b>Humanities and the Arts (students select from Gen Ed List)</b>            |  | <b>6</b>     |
| <b>Social and Behavioral Sciences</b>  |  | <b>6-7</b>   |
| <a href="#"><u>ECON 102</u></a>  | Microeconomic Principles                             | 3            |
| or <a href="#"><u>ACE 100</u></a>  | Agr Cons and Resource Econ                           |              |
| Students choice from Gen Ed List   |  |              |
| <b>Mathematical Foundations (fulfills Quantitative Reasoning I &amp; II)</b> |  | <b>12-13</b> |

| <b>Code</b>  | <b>Title</b>  | <b>Hours</b> |
|--|---|--------------|
| <a href="#"><u>CS 361</u></a>                                    | Probability & Statistics for Computer Science                         | 3            |
| <a href="#"><u>MATH 220</u></a>                                  | Calculus  | 4-5          |
| or <a href="#"><u>MATH 221</u></a>                               | Calculus I  |              |
| <a href="#"><u>MATH 225</u></a>                                  | Introductory Matrix Theory  | 2            |
| <a href="#"><u>MATH 231</u></a>                                  | Calculus II   | 3            |
| <b>Computer Sciences Core</b>                                    |   | <b>22</b>    |
| <a href="#"><u>CS 100</u></a>                                    | Freshman Orientation  | 0-1          |
| <a href="#"><u>CS 125</u></a>                                    | Intro to Computer Science   | 4            |
| <a href="#"><u>CS 126</u></a>                                    | Software Design Studio  | 3            |
| <a href="#"><u>CS 173</u></a>                                    | Discrete Structures   | 3            |
| <a href="#"><u>CS 225</u></a>                                    | Data Structures   | 4            |
| <a href="#"><u>CS 374</u></a>                                    | Introduction to Algorithms & Models of Computation                    | 4            |
| <a href="#"><u>CS 357</u></a>                                    | Numerical Methods I   | 3or3         |
| or <a href="#"><u>CS 421</u></a>                                 | Programming Languages & Compilers                                     |              |
| <b>Computer Science Technical Track (two options)</b>            |   | <b>9-11</b>  |
| <a href="#"><u>CS 233</u></a><br>& <a href="#"><u>CS 241</u></a> | Computer Architecture<br>and System Programming                       | 4&4          |
| OR   |   |              |
| <a href="#"><u>CS 240</u></a>                                    | Introduction to Computer Systems                                      | 3            |
| & Two CS 400   | Any two (2) 400-level CS courses except <a href="#"><u>CS 491</u></a> | 6-8          |
| <b>Animal Sciences Core</b>                                      |   | <b>34-36</b> |
| <a href="#"><u>ANSC 100</u></a>                                  | Intro to Animal Sciences  | 4            |
| <a href="#"><u>ANSC 221</u></a>                                  | Cells, Metabolism and Genetics  | 3            |

| <b>Code</b>                                       | <b>Title</b>                                       | <b>Hours</b> |
|---|--|--------------|
| <a href="#"><u>ANSC 222</u></a>                   | Anatomy and Physiology                             | 3            |
| <a href="#"><u>ANSC 223</u></a>                   | Animal Nutrition                                   | 3            |
| <a href="#"><u>ANSC 224</u></a>                   | Animal Reproduction and Growth                     | 4            |
| <a href="#"><u>ANSC 398</u></a>                   | UG Experiential Learning                           | 1            |
| <a href="#"><u>ANSC 498</u></a>                   | Integrating Animal Sciences                        | 2            |
| <b>Applied Animal Sciences Courses (choose 3)</b> |  | <b>9</b>     |
| <a href="#"><u>ANSC 201</u></a>                   | Principles of Dairy Production                     | 3            |
| <a href="#"><u>ANSC 204</u></a>                   | Intro Dairy Cattle Evaluation                      | 2            |
| <a href="#"><u>ANSC 205</u></a>                   | World Animal Resources                             | 3            |
| <a href="#"><u>ANSC 206</u></a>                   | Horse Management                                   | 3            |
| <a href="#"><u>ANSC 211</u></a>                   | Breeding Animal Evaluation                         | 3            |
| <a href="#"><u>ANSC 219</u></a>                   | Meat Technology                                    | 3            |
| <a href="#"><u>ANSC 250</u></a>                   | Companion Animals in Society                       | 3            |
| <a href="#"><u>ANSC 301</u></a>                   | Food Animal Production, Management, and Evaluation | 3            |
| <a href="#"><u>ANSC 305</u></a>                   | Human Animal Interactions                          | 3            |
| <a href="#"><u>ANSC 307</u></a>                   | Companion Animal Management                        | 3            |
| <a href="#"><u>ANSC 309</u></a>                   | Meat Production and Marketing                      | 2            |
| <a href="#"><u>ANSC 310</u></a>                   | Meat Selection and Grading                         | 3            |
| <a href="#"><u>ANSC 312</u></a>                   | Advanced Livestock Evaluation                      | 3            |
| <a href="#"><u>ANSC 313</u></a>                   | Horse Appraisal                                    | 2            |
| <a href="#"><u>ANSC 314</u></a>                   | Adv Dairy Cattle Evaluation                        | 2            |
| <a href="#"><u>ANSC 322</u></a>                   | Livestock Feeds and Feeding                        | 3            |



| <b>Code</b>                                     | <b>Title</b>                      | <b>Hours</b> |
|---|-----------------------------------|--------------|
| <a href="#"><u>ANSC 370</u></a>                 | Companion Animal Policy           | 3            |
| <a href="#"><u>ANSC 400</u></a>                 | Dairy Herd Management             | 3            |
| <a href="#"><u>ANSC 401</u></a>                 | Beef Production                   | 3            |
| <a href="#"><u>ANSC 402</u></a>                 | Sheep Production                  | 3            |
| <a href="#"><u>ANSC 403</u></a>                 | Pork Production                   | 3            |
| <a href="#"><u>ANSC 404</u></a>                 | Poultry Science                   | 3            |
| <a href="#"><u>ANSC 405</u></a>                 | Advanced Dairy Management         | 2            |
| <a href="#"><u>ANSC 407</u></a>                 | Animal Shelter Management         | 3            |
| <a href="#"><u>ANSC 424</u></a>                 | Pet Food & Feed Manufacturing     | 3            |
| <a href="#"><u>ANSC 435</u></a>                 | Milk Quality and Udder Health     | 2            |
| <a href="#"><u>ANSC 437</u></a>                 | Adv Reproductive Management       | 2            |
| <a href="#"><u>ANSC 471</u></a>                 | ANSC Leaders & Entrepreneurs      | 3            |
| <b>Basic Animal Sciences Courses (choose 3)</b> |                                   | <b>9</b>     |
| <a href="#"><u>ANSC 251</u></a>                 | Epidemics and Infectious Diseases | 3            |
| <a href="#"><u>ANSC 306</u></a>                 | Equine Science                    | 3            |
| <a href="#"><u>ANSC 331</u></a>                 | Biology of Reproduction           | 2-4          |
| <a href="#"><u>ANSC 350</u></a>                 | Cellular Metabolism in Animals    | 3            |
| <a href="#"><u>ANSC 363</u></a>                 | Behavior of Domestic Animals      | 3            |
| <a href="#"><u>ANSC 366</u></a>                 | Animal Behavior                   | 3            |
| <a href="#"><u>ANSC 406</u></a>                 | Zoo Animal Conservation Sci       | 3            |
| <a href="#"><u>ANSC 409</u></a>                 | Meat Science                      | 3            |
| <a href="#"><u>ANSC 420</u></a>                 | Ruminant Nutrition                | 3            |

| <b>Code</b>                     | <b>Title</b>                   | <b>Hours</b> |
|---------------------------------|--------------------------------|--------------|
| <a href="#"><u>ANSC 421</u></a> | Minerals and Vitamins          | 3            |
| <a href="#"><u>ANSC 422</u></a> | Companion Animal Nutrition     | 3            |
| <a href="#"><u>ANSC 431</u></a> | Advanced Reproductive Biology  | 3            |
| <a href="#"><u>ANSC 438</u></a> | Lactation Biology              | 4            |
| <a href="#"><u>ANSC 440</u></a> | Applied Statistical Methods I  | 4            |
| <a href="#"><u>ANSC 441</u></a> | Human Genetics                 | 3-4          |
| <a href="#"><u>ANSC 444</u></a> | Applied Animal Genetics        | 3            |
| <a href="#"><u>ANSC 445</u></a> | Statistical Methods            | 4            |
| <a href="#"><u>ANSC 446</u></a> | Population Genetics            | 3-4          |
| <a href="#"><u>ANSC 447</u></a> | Advanced Genetics and Genomics | 4            |
| <a href="#"><u>ANSC 448</u></a> | Math Modeling in Life Sciences | 3-4          |
| <a href="#"><u>ANSC 449</u></a> | Biological Modeling            | 3-4          |
| <a href="#"><u>ANSC 450</u></a> | Comparative Immunobiology      | 4            |
| <a href="#"><u>ANSC 451</u></a> | Microbes and the Anim Indust   | 3            |
| <a href="#"><u>ANSC 452</u></a> | Animal Growth and Development  | 3-4          |
| <a href="#"><u>ANSC 453</u></a> | Stem Cell Biology              | 3-4          |
| <a href="#"><u>ANSC 467</u></a> | Applied Animal Ecology         | 3            |
| <a href="#"><u>ANSC 509</u></a> | Muscle Biology                 | 2            |
| <a href="#"><u>ANSC 510</u></a> | Science of Animal Well-Being   | 1.5          |
| <a href="#"><u>ANSC 520</u></a> | Protein and Energy Nutrition   | 3            |
| <a href="#"><u>ANSC 521</u></a> | Regulation of Metabolism       | 4            |
| <a href="#"><u>ANSC 522</u></a> | Advanced Ruminant Nutrition    | 3            |

| <b>Code</b>                     | <b>Title</b>                   | <b>Hours</b> |
|---------------------------------|--------------------------------|--------------|
| <a href="#"><u>ANSC 523</u></a> | Techniques in Animal Nutrition | 3            |
| <a href="#"><u>ANSC 524</u></a> | Nonruminant Nutrition Concepts | 2            |
| <a href="#"><u>ANSC 525</u></a> | Topics in Nutrition Research   | 1            |
| <a href="#"><u>ANSC 526</u></a> | Adv Companion Animal Nutrition | 3            |
| <a href="#"><u>ANSC 533</u></a> | Repro Physiology Lab Methods   | 1-3          |
| <a href="#"><u>ANSC 541</u></a> | Regression Analysis            | 5            |
| <a href="#"><u>ANSC 542</u></a> | Applied Bioinformatics         | 4            |
| <a href="#"><u>ANSC 543</u></a> | Bioinformatics                 | 4            |
| <a href="#"><u>ANSC 545</u></a> | Statistical Genomics           | 3-4          |
| <a href="#"><u>ANSC 554</u></a> | Immunobiological Methods       | 3            |
| <a href="#"><u>ANSC 561</u></a> | Animal Stress Physiology       | 2            |

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

And

### **Animal Sciences, MANSC**

*Degree Requirements*

| <b>Code</b>   | <b>Title</b>   | <b>Hours</b> |
|---|--|--------------|
| <a href="#"><u>ANSC 590</u></a>   | Animal Sciences Seminar                              | 2            |
| <a href="#"><u>ANSC 440</u></a><br>or <a href="#"><u>ANSC 445</u></a>   | Applied Statistical Methods I<br>Statistical Methods | 4            |
| 500-level courses   |  | 6            |
| (excludes <a href="#"><u>ANSC 590</u></a> , <a href="#"><u>ANSC 592</u></a> , <a href="#"><u>ANSC 593</u></a> )   |  |              |
| 400- or 500-level ANSC courses  |  | 6            |
| (excludes <a href="#"><u>ANSC 590</u></a> , <a href="#"><u>ANSC 592</u></a> , <a href="#"><u>ANSC 593</u></a> , <a href="#"><u>ANSC 440</u></a> , <a href="#"><u>ANSC 445</u></a> ) |  |              |

| <b>Code</b>  | <b>Title</b>                   | <b>Hours</b> |
|--|--------------------------------|--------------|
| Other graduate-level electives   |                                | 8            |
| (excludes <a href="#">ANSC 590</a> , <a href="#">ANSC 592</a> , <a href="#">ANSC 593</a> , <a href="#">ANSC 440</a> , <a href="#">ANSC 445</a> ) |                                |              |
| <a href="#">ANSC 592</a>   | Adv Topics in Animal Science   | 6            |
| or <a href="#">ANSC 593</a>  | Res Studies in Animal Sciences |              |
| <b>Total Hours</b>   |                                | <b>32</b>    |

Course List

\* A maximum of 12 graduate-level credit hours from the B.S. degree will count towards the MANSC degree

**Memorandum of Understanding (MOU)**  
**Between**  
**The Grainger College of Engineering and The College of Agricultural, Consumer & Environmental Sciences**

The goal of this Memorandum of Understanding (MOU) is to outline logistics surrounding the administration of the joint degree programs of BS (CS+ANSC)/MANSC in the Department of Animal Sciences and the BS (CS+Crop Sciences)/MS in Crop Sciences in the Department of Crop Sciences.

Of specific focus is how and when students transition from the BS portion of the joint degree (during which they pay undergraduate tuition including engineering differential and have preferential access to coursework in the Department of Computer Science required to complete the degree and services provided by the Grainger College of Engineering), to the MS portion of the joint degree (during which they pay graduate tuition which includes neither engineering differential nor preferential access to coursework in the Department of Computer Science nor services provided by the Grainger College of Engineering).

Specifically, it is understood and agreed that:

- 1) A student who is accepted into either joint degree program continues to pay the engineering tuition and differential assessed to undergraduate students in the relevant CS+X program until requirements are completed for the CS+X undergraduate degree (less “shared” credits in the related graduate degree, which must be in the X discipline). During this time, the student continues to have preferred access to Computer Science undergraduate courses (through the 400 level) required to complete their undergraduate degree. They also continue to have access to support services provided by the Grainger College of Engineering (e.g., Computer Science departmental advising, Engineering Career Services, International Programs in Engineering, Engineering City Scholars).
- 2) Once a student has completed the undergraduate degree requirements for the CS+X degree (less “shared” credits), they are coded as a graduate student in the department offering the graduate degree within the joint degree, begin paying the graduate student tuition associated with that graduate degree, and lose preferred access to courses offered by the Department of Computer Science and other services offered by the Grainger College of Engineering.
- 3) It is the responsibility of the Department/College offering the joint program to certify that the undergraduate degree requirements (less “shared” credits) are satisfied before transferring the student to the graduate program. This specifically includes that all Computer Science courses required for the undergraduate CS+X degree are completed. It is also the responsibility of the offering Department/College to advise the student about the implications of losing future preferential access to Computer Science courses and engineering services.

- 4) A student who has been transferred to the graduate program and decides not to complete the graduate degree may petition the offering Department/College to withdraw from the combined program. They may request to have their graduate hours earned converted to undergraduate hours and applied toward the completion of the traditional undergraduate CS+X degree (full credit hour version without a reduction for “shared” credits).

Both parties agree to these arrangements for the initial implementation of the joint degree programs. Modifications may be requested by either party and enacted, through an addendum to this agreement, if agreed to by both parties.

Agreement entered into on October 22, 2019.



Jonathan J. Makela  
Associate Dean for Undergraduate Programs  
Grainger College of Engineering



Anna Ball  
Associate Dean for Academic Programs  
College of Agricultural, Consumer &  
Environmental Sciences

Current Program Requirements

| Code  | Title   | Hours     |
|---|---|-----------|
| ANSC 590  | Animal Sciences Seminar   | 2         |
| ANSC 440<br>or ANSC 445   | Applied Statistical Methods I<br>or Statistical Methods           | 4         |
| 500-level courses<br>(excludes ANSC 590, ANSC 592, ANSC 593)                                  |   |           |
| 400- or 500-level ANSC courses<br>(excludes ANSC 590, ANSC 592, ANSC 593, ANSC 440, ANSC 445) |   |           |
| Other graduate-level electives<br>(excludes ANSC 590, ANSC 592, ANSC 593, ANSC 440, ANSC 445) |   |           |
| ANSC 592<br>or ANSC 593   | Adv Topics in Animal Science<br>or Res Studies in Animal Sciences | 6         |
| <b>Total Hours</b>  |   | <b>32</b> |

**Other Requirements**

Other Requirements and conditions may overlap  
Minimum GPA: 3.0

**ANSC 592 or ANSC 593 Research Studies:**

- In consultation with their faculty advisor, students will select courses that support the individual research studies project and strengthen career opportunities. The individual research studies project or internship experience and a written report will fulfill the ANSC 592 (Advanced Topics in Animal Science) or ANSC 593 (Research Studies in Animal Sciences) capstone project requirement. The project or internship and the written product provide evidence that the student:
  - understands and can apply the scientific method;
  - has the capability to analyze and interpret scientific information; and
  - can effectively communicate scientific information in a field of animal sciences. The written product will follow the format

Revised Program Requirements

| Code   | Title                          | Hours     |
|--|--------------------------------|-----------|
| ANSC 590, ANSC 591, or approved equivalent <sup>1</sup>  | Animal Sciences Seminar        | 2         |
| ANSC 440, ANSC 445, ANSC 448, ANSC 449, or approved One course in statistics or data analytics equivalent <sup>2</sup> |                                | 2 - 5     |
| Elective 400 and 500-level graded coursework<br>(excludes ANSC 590, ANSC 591, ANSC 593) <sup>3</sup>                   |                                |           |
| ANSC 593 <sup>3</sup>  | Res Studies in Animal Sciences | 8         |
| <b>Total Hours</b>   |                                | <b>32</b> |

**Other Requirements**

Minimum Hours Required within the Unit: 12  
Minimum 500-level Hours Required Overall: 12  
Minimum GPA: 3.0

<sup>1</sup>equivalent course requires departmental approval

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

<sup>3</sup>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.



**COLLEGE OF AGRICULTURAL, CONSUMER  
& ENVIRONMENTAL SCIENCES**

Department of Agricultural & Consumer Economics  
326 Mumford Hall, MC-710  
1301 W. Gregory Drive  
Urbana, IL 61801

October 8, 2020

Dr. Rodney W. Johnson  
Professor and Head  
116 Animal Sciences Laboratory  
1207 W. Gregory Drive  
Urbana, IL 61801

Dear Rod

Thanks for sharing with us the exciting Master of Animal Sciences program that the Department of Animal Sciences offers, in addition to the traditional Master of Science and Doctor of Philosophy degrees in Animal Sciences. Our programs have a history of offering our in-person and online courses to students in both departments and look forward to extending this offer to your students in the Master of Animal Sciences program.

Sincerely,

A handwritten signature in blue ink that reads 'Sean Fox'.

Sean Fox,  
Professor & Head, Dept. of Agricultural and Consumer Economics