DAIRY SCIENCE, B.S.

Undergraduates in dairy science prepare for a variety of career opportunities that require a strong background in applied animal biology. Careers include: agribusiness, dairy farm management, technical service and consulting, research, and teaching. Students also enroll in the department to prepare for veterinary school, medical school, or graduate school. Coursework in the major includes animal genetics, lactation, reproduction, nutrition and management. The department may be consulted for additional details and for specific career information.

The dairy science major can be earned under the bachelor of science degree program. The dairy science major may be combined with other majors such as agricultural and applied economics, biological systems engineering, genetics, life sciences communication, and agronomy. Multiple out-of-classroom learning opportunities are included in the curriculum and internships on farms or with agribusiness are required to provide the practical training needed for success in any 21st-century careers. Many students gain valuable experience through part-time employment in research labs or in the student-operated dairy cattle instruction and research center.

Discoveries from the research laboratories reach the classroom long before they appear in textbooks. Students benefit from integration of the instructional and research programs of the department. The co-curricular Badger Dairy Club (http://badgerdairyclub.com) involves students in dairy industry events that provide leadership and networking opportunities in a vibrant industry.

HOW TO GET IN

To declare this major, students must be admitted to UW–Madison and the College of Agricultural and Life Sciences (CALS). For information about becoming a CALS first-year or transfer student, see Entering the College (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#enteringthecollegenotext).

Students who attend Student Orientation, Advising, and Registration (SOAR) with the College of Agricultural and Life Sciences have the option to declare this major at SOAR. Students may otherwise declare after they have begun their undergraduate studies. For more information, contact the advisor listed under the Advising and Careers tab.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate

General Education Requirements (http://guide.wisc.edu/undergraduate/#requirementsforundergraduatetestudytext) section of the Guide.

Requirements Detail

General Education

- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Communication Part A & Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES REQUIREMENTS

In addition to the University General Education Requirements, all undergraduate students in CALS must satisfy a set of college and major requirements. Specific requirements for all majors in the college and other information on academic matters can be obtained from the Office of Academic Affairs (http://www.cals.wisc.edu/academics), College of Agricultural and Life Sciences, 116 Agricultural Hall, 1450 Linden Drive, Madison, WI 53706; 608-262-3003. Academic departments and advisors also have information on requirements. Courses may not double count within university requirements (General Education and Breadth) or within college requirements (First-Year Seminar, International Studies and Science), but courses counted toward university requirements may also be used to satisfy a college and/or a major requirement; similarly, courses counted toward college requirements may also be used to satisfy a university and/or a major requirement.

COLLEGE REQUIREMENTS FOR ALL CALS B.S. DEGREE PROGRAMS

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<td>or CHEM 108</td>
<td>Chemistry In Our World</td>
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<tr>
<td>or CHEM 109</td>
<td>Advanced General Chemistry</td>
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MAJOR REQUIREMENTS

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<td>MATH 114</td>
<td>Algebra and Trigonometry</td>
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<td>Introduction to Biochemistry</td>
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<td>BIOCHEM 507 &amp; BIOCHEM 508</td>
<td>General Biochemistry I and General Biochemistry II</td>
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<td>BMOLCHEM 314</td>
<td>Introduction to Human Biochemistry (offered during summer session only)</td>
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<td>Dairy Herd Management II</td>
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<td>Comparative Animal Nutrition</td>
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<td>Animal Feeds and Diet Formulation</td>
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<td>Veterinary Genetics</td>
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<td>Principles of Animal Breeding</td>
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<td>AN SCI/DY SCI 373</td>
<td>Animal Physiology</td>
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<td>DY SCI 535</td>
<td>Dairy Farm Management Practicum</td>
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<td>Dairy Cattle Improvement Programs</td>
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<td>DY SCI 272</td>
<td>Pre-Capstone Seminar</td>
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<td>Honors Independent Study ¹</td>
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<td>DY SCI 299</td>
<td>Independent Study ¹</td>
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<td>Livestock Production and Health in Agricultural Development</td>
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<td>DY SCI/ AGROECOL/ AGRONOMY 371</td>
<td>Managed Grazing Field Study</td>
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<td>DY SCI 375</td>
<td>Special Topics ¹</td>
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<td>Animal Agriculture and Global Sustainable Development</td>
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<td>International Field Study in Animal Agriculture and Sustainable Development</td>
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<td>DY SCI 534</td>
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Dairy Science, B.S.

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Total Credits 64-79

1 Consult with your advisor for details.

UNIVERSITY DEGREE REQUIREMENTS

Requirements Detail

Total Degree To receive a bachelor’s degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.

Residency Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. "In residence" credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.

Quality of Work Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

LEARNING OUTCOMES

LEARNING OUTCOMES

1. To gain knowledge of current and emerging research based information in animal biology and management sciences to support dairy production.

   The first learning outcome relates to the biological structure and function of the (ruminant) dairy cow and its particular aspects compared with other food-producing animals. Students are expected to become proficient in the fundamental and applied aspects of reproduction, genetic selection, milk secretion, and nutrition, as well as management practices that enhance the health and welfare of dairy cattle. In addition, students are expected to gain an understanding of the farm-level economic, environmental and social challenges facing dairy producers. Finally, students are expected to appreciate the place that dairy production and animal agriculture hold in state, regional, national and global food production and its contribution to nutritional needs and health of a growing population.

2. To gain intellectual, practical and attitudinal skills needed to identify and solve problems and challenges facing dairy producers and allied industries.

   The second learning outcome relates to students’ gain in intellectual and practical skills as well as personal attitude. We expect our students to practice and refine their soft skills. Soft skills are personal attributes that enable someone to interact effectively with other people including but not limited to strong work ethic, positive attitude, good communication skills, time management abilities, problem-solving skills, acting as a team player, self confidence, ability to accept and learn from criticism, flexibility/adaptability, and working well under pressure.

3. To gain life-long learning skills to enable graduates to adapt to changing technological, economic and social circumstances throughout their professional career.

   The third learning outcome relates to enabling students’ leadership skills, continued growth and success in their professional career in a way that contribute also to the success of the dairy industry in Wisconsin, the nation and globally.

FOUR-YEAR PLAN

SAMPLE DAIRY SCIENCE FOUR-YEAR PLAN

Freshman

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Sophomore

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<td>STAT 371</td>
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Sophomore

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Junior

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<td>DY SCI/AN SCI 370</td>
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<td>DY SCI/AN SCI 373</td>
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Total Credits 28
SAMPLE DAIRY SCIENCE FOUR-YEAR PLAN—PRE-VETERINARY

Freshman

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<td>MATH 221</td>
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Junior

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Sophomore

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Senior

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Total Credits 29

1 Reproductive Management of Dairy Cattle

ADVISING AND CAREERS

Students are assigned a faculty advisor once they declare the major. Prospective students are welcome to contact Ted Halbach (tjhalbach@wisc.edu, 608-219-5289) for more information.

Undergraduates in dairy science prepare for a variety of career opportunities that require a strong background in applied animal biology. Careers include: agribusiness, dairy farm management, technical service and consulting, research, and teaching. Students also enroll in the department to prepare for veterinary school, medical school, or graduate school. Coursework in the major includes animal genetics, lactation,
reproduction, nutrition and management. The department may be consulted for additional details and for specific career information.

PEOPLE

PROFESSORS
Combs, Fricke, Gianola, Jones, Ruegg, Shaver, Wattiaux, Weigel (chair), Wiltbank

ASSOCIATE PROFESSORS
Cabrera, Hernandez

ASSISTANT PROFESSOR
White

FACULTY ASSOCIATE
Halbach