**BS DAIRY SCIENCE**

**Program Learning Objectives**

1. Technical competency within the disciplines of Dairy Science (Dairy Husbandry and Dairy Products Technology), with particular emphasis on the science, industry and practice.
2. Effective communication skills and leadership.
3. An advanced level of critical thinking skills and problem solving capability.
4. The capability of maintaining consistent, professional behavior and performance in a rapidly changing work environment.
5. Strong awareness of society as a whole and of agriculture’s place in society.

**Degree Requirements and Curriculum**

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation (http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext) section of this catalog, including:

- 60 units of upper division courses
- Graduation Writing Requirement (GWR)
- 2.0 GPA
- U.S. Cultural Pluralism (USCP)

Note: No major or support courses may be selected as credit/no credit.

**MAJOR COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 101</td>
<td>Introduction to the Animal Sciences</td>
<td>2</td>
</tr>
<tr>
<td>ASCI 220</td>
<td>Introductory Animal Nutrition and Feeding</td>
<td>4</td>
</tr>
<tr>
<td>or ASCI 211</td>
<td>Meat Science</td>
<td></td>
</tr>
<tr>
<td>ASCI 340</td>
<td>Animal Welfare and Ethics</td>
<td>4</td>
</tr>
<tr>
<td>ASCI 363</td>
<td>Undergraduate Seminar</td>
<td>2</td>
</tr>
<tr>
<td>DSCI 102</td>
<td>Dairy Operations and Safety</td>
<td>2</td>
</tr>
<tr>
<td>or ASCI 339</td>
<td>Internship in Animal Science</td>
<td></td>
</tr>
<tr>
<td>DSCI 202</td>
<td>Dairy Promotion and Marketing</td>
<td>4</td>
</tr>
<tr>
<td>DSCI 230</td>
<td>General Dairy Husbandry</td>
<td>4</td>
</tr>
<tr>
<td>DSCI 231</td>
<td>General Dairy Manufacturing</td>
<td>4</td>
</tr>
<tr>
<td>DSCI 233</td>
<td>Milk Processing and Inspection</td>
<td>4</td>
</tr>
<tr>
<td>DSCI 241</td>
<td>Dairy Cattle Selection, Breeds, Fitting and</td>
<td>4</td>
</tr>
<tr>
<td>or FSN 275</td>
<td>Elements of Food Safety</td>
<td></td>
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<tr>
<td>DSCI 301</td>
<td>Dairy Cattle Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>or DSCI 401</td>
<td>Physical and Chemical Properties of Dairy Products</td>
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<tr>
<td>DSCI 321</td>
<td>Lactation Physiology</td>
<td>4</td>
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<tr>
<td>or DSCI 444</td>
<td>Dairy Microbiology</td>
<td></td>
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<tr>
<td>or MCRO 421</td>
<td>Food Microbiology</td>
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<tr>
<td>DSCI 330</td>
<td>Artificial Insemination and Embryo Biotechnology</td>
<td>4</td>
</tr>
<tr>
<td>or DSCI 434</td>
<td>Cheese and Fermented Dairy Foods</td>
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<tr>
<td>DSCI 333</td>
<td>Dairy Animal Health, Safety and Applied Technology</td>
<td>4</td>
</tr>
<tr>
<td>or DSCI 402</td>
<td>Quality Assurance and Control of Dairy Products</td>
<td></td>
</tr>
</tbody>
</table>

**SUPPORT COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 111</td>
<td>General Biology (B2 &amp; B4)</td>
<td>4</td>
</tr>
<tr>
<td>or BIO 161</td>
<td>Introduction to Cell and Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>CHEM 127</td>
<td>General Chemistry for Agriculture and Life Science I (B3 &amp; B4)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 118</td>
<td>Precalculus Algebra (B1)</td>
<td>4</td>
</tr>
<tr>
<td>or DSCI 401</td>
<td>Domestic Livestock Endocrinology</td>
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<tr>
<td>or DSCI 407</td>
<td>Assisted Reproduction of Gametes and Embryos Laboratory</td>
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<tr>
<td>or ASCI 410</td>
<td>Applied Animal Behavior Science</td>
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</tr>
<tr>
<td>or ASCI 420</td>
<td>Animal Metabolism and Nutrition</td>
<td></td>
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<tr>
<td>or ASCI 438</td>
<td>Systemic Animal Physiology</td>
<td></td>
</tr>
<tr>
<td>or ASCI 440</td>
<td>Immunology and Diseases of Animals</td>
<td></td>
</tr>
</tbody>
</table>

**Approved electives**

At least 15 units must be 300-400 level

Consult with academic advisor regarding career tracks

Select from the following:

- AEPS 150 Forage Crops
- AEPS 230 Environmental Horticulture
- AGB 212 Agricultural Economics
- AGB 214 Agribusiness Financial Accounting
- AGB 301 Food and Fiber Marketing
- AGB 310 Agribusiness Credit and Finance
- AGB 369 Agricultural Personnel Management
- AGED 102 Introduction to Agricultural Education
- AGED 404 Agricultural Leadership
- ASCI 112 Principles of Animal Science
- ASCI 211 Introduction to Beef Production
- ASCI 226 Livestock Evaluation
- ASCI 229 Anatomy and Physiology of Farm Animals
- ASCI 290 Animal Production and Management Enterprise
- ASCI 304 Animal Genomics
- ASCI 310 Technical Veterinary Skills
- ASCI 311 Advanced Beef Cattle System Management
- ASCI 312 Production Medicine
- ASCI 351 Reproductive Physiology
- ASCI 366 Veterinary Pharmacology
- ASCI 405 Domestic Livestock Endocrinology
- ASCI 406 Applied Animal Embryology and Assisted Reproduction
- ASCI 407 Assisted Reproduction Technologies of Gametes and Embryos Laboratory
- ASCI 410 Applied Animal Behavior Science
- ASCI 420 Animal Metabolism and Nutrition
- ASCI 438 Systemic Animal Physiology
- ASCI 440 Immunology and Diseases of Animals
- ASCI 490 Advanced Animal Production and Management Enterprise
BS Dairy Science

BIO 162 Introduction to Organismal Form and Function
BIO 303 Survey of Genetics
BRAE 121 Agricultural Mechanics
BRAE 141 Agricultural Machinery Safety
BUS 212 Financial Accounting for Nonbusiness Majors
CHEM 128 General Chemistry for Agriculture and Life Science II
CHEM 129 General Chemistry for Agriculture and Life Science III
CHEM 216 Organic Chemistry I
CHEM 217 Organic Chemistry II
CHEM 312 Survey of Organic Chemistry
CHEM 313 Survey of Biochemistry and Biotechnology
CHEM 371 Biochemical Principles
COMS 301 Business and Professional Communication
Any DSCI course
FSN 125 Introduction to Food Science
FSN 230 Elements of Food Processing
FSN 275 Elements of Food Safety
FSN 311 Sensory Evaluation of Food
FSN 330 Introduction to Principles of Food Engineering
FSN 335 Food Quality Assurance
FSN 370 Food Plant Sanitation and Prerequisite Programs
JOUR 203 News Reporting and Writing
JOUR 205 Agricultural Communications
MCRO 342 Public Health Microbiology
MCRO 421 Food Microbiology
NR 141 Introduction to Forest Ecosystem Management
PHYS 121 College Physics I
PHYS 122 College Physics II
STAT 313 Applied Experimental Design and Regression Models
Any courses used in the following minors:
Agribusiness
Agricultural Communication
Crop Science
Environmental Soil Science
Equine Science
Food Science
Poultry Management

GENERAL EDUCATION (GE)
(See GE program requirements below.) 56

FREE ELECTIVES
Free Electives 5
Total units 180

1 Required in Support; also satisfies GE.
2 Students focusing on Dairy Foods should take BIO 161.
3 MATH 116 and MATH 117 substitute.
4 Courses used to meet Major requirements may not double count as approved electives.
5 Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

General Education (GE) Requirements

• 72 units required, 16 of which are specified in Major and/or Support.
• See the complete GE course listing (http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext).
• Minimum of 12 units required at the 300 level.

Area A Communication
A1 Expository Writing 4
A2 Oral Communication 4
A3 Reasoning, Argumentation and Writing 4

Area B Math, Science, and Quantitative Reasoning
B1 Mathematics/Statistics (8 units in Support) 1 0
B2 Life Science (4 units in Support) 1 0
B3 Physical Science (4 units in Support) 1 0
B4 One lab taken with either a B2 or B3 course
B7 Upper-division elective 4

Area C Arts and Humanities
C1 Literature 4
C2 Philosophy 4
C3 Fine/Performing Arts 4
C4 Upper-division elective 4
Area C elective (Choose one course from C1-C5) 4

Area D Society and the Individual
D1 The American Experience (Title 5, Section 40404 requirement) 4
D2 Political Economy 4
D3 Comparative Social Institutions 4
D5 Upper-division elective 4

Area E Lifelong Learning and Self-Development
E Lower-division elective 4

Total units 56

1 Required in Support; also satisfies GE