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 Code</th>
<th>Course 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 Showing</td>
<td>4</td>
</tr>
<tr>
<td>or FSN 275</td>
<td>Elements of Food Safety</td>
<td></td>
</tr>
<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>
<td></td>
</tr>
<tr>
<td>DSCI 321</td>
<td>Lactation Physiology</td>
<td>4</td>
</tr>
<tr>
<td>or DSCI 444</td>
<td>Dairy Microbiology</td>
<td></td>
</tr>
<tr>
<td>or MCRO 421</td>
<td>Food Microbiology</td>
<td></td>
</tr>
<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>
<td></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 Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 111</td>
<td>General Biology (B2 &amp; B3)</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 (B1 &amp; B3)</td>
<td></td>
</tr>
<tr>
<td>MATH 118</td>
<td>Precalculus Algebra (B4)</td>
<td>4</td>
</tr>
<tr>
<td>MCRO 221</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>STAT 218</td>
<td>Applied Statistics for the Life Sciences (GE Electives)</td>
<td>4</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 221 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

DSCI 422 Breeding and Genetics of Dairy Cattle 4
or DSCI 435 Concentration and Fractionation Technology 4
DSCI 432 Advanced Dairy Herd Management 4
or DSCI 433 Dairy Plant Management and Equipment 4
DSCI 461 Senior Project 3
or ASCI 479 Senior Project - Current Topics in Animal Science 3
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.)

FREE ELECTIVES
Free Electives
Total units

1. Required in Major or Support; also satisfies General Education (GE) requirement.
2. Students focusing on Dairy Foods should take BIO 161.
3. MATH 116 and MATH 117 substitute.
4. If a course is taken to meet a Major or Support requirement, it cannot be double-counted as an Approved Elective.
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.
- If any of the remaining 56 units is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.
- See the complete GE course listing (http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext).
- A grade of C- or better is required in one course in each of the following GE Areas: A1 (Oral Communication), A2 (Written Communication), A3 (Critical Thinking), and B4 (Mathematics/Quantitative Reasoning).

Area A  English Language Communication and Critical Thinking
A1  Oral Communication  4
A2  Written Communication  4
A3  Critical Thinking  4

Area B  Scientific Inquiry and Quantitative Reasoning
B1  Physical Science (4 units in Support)  0
B2  Life Science (4 units in Support)  0
B3  One lab taken with either a B1 or B2 course
B4  Mathematics/Quantitative Reasoning (4 units in Support)  0

Upper-Division B

Area C  Arts and Humanities
Lower-division courses in Area C must come from three different subject prefixes.
C1  Arts: Arts, Cinema, Dance, Music, Theater  4
C2  Humanities: Literature, Philosophy, Languages other than English  4

Lower-Division C Elective - Select a course from either C1 or C2  4

Upper-Division C

Area D  Social Sciences
D1  American Institutions (Title 5, Section 40404 Requirement)  4
D2  Lower-Division D - Select courses from two different subject prefixes.  8

Upper-Division D

Area E  Lifelong Learning and Self-Development

Lower-Division E

Total units  180
**GE Electives in Areas B, C, and D**

Select courses from two different areas; may be lower-division or upper-division courses.

<table>
<thead>
<tr>
<th>GE Electives (4 units in Support plus 4 units in GE)</th>
<th>4</th>
</tr>
</thead>
</table>

| Total units | 56 |

1 Required in Major or Support; also satisfies General Education (GE) requirement.