

DAIRY SCIENCE (DSCI)

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DSCI Courses

DSCI 2200 Special Problems for Undergraduates (1-2 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of selected problems. Repeatable up to 4 units. Formerly DSCI 200.

DSCI 2202 Dairy Promotion and Marketing (3 units)

Term Typically Offered: F

Prerequisite: DSCI 229 or DSCI 2229.

National and state dairy promotional programs, advertising and merchandising. Marketing and pricing of milk and dairy products at the state and national level. 3 lectures. Formerly DSCI 202.

DSCI 2229 General Dairy Manufacturing (4 units)

Term Typically Offered: F, SP

2026-28 or later catalog: GE Area 5B

2026-28 or later catalog: GE Area 5C

2020-26 catalogs: GE Area B2

2020-26 catalogs: GE Area B3

Composition and properties of fluid milk and manufactured milk products. Chemistry and microbiology of dairy products. Processes and equipment involved in the manufacture of butter, cheeses, and other fermented dairy products, frozen, condensed, and dried dairy foods. 3 lectures, 1 laboratory. Fulfills GE Areas 5B and 5C (GE Areas B2 and B3 for students on the 2020-26 catalogs). Formerly DSCI 229.

DSCI 2230 General Dairy Husbandry (3 units)

Term Typically Offered: F

Selection, breeding, feeding, and management of dairy cattle. Composition and food value of dairy products. Milk pricing, political influences, dairy industry statistics and opportunities. Producing and handling products. 2 lectures, 1 laboratory. Formerly DSCI 230.

DSCI 2270 Special Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of special topics. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly DSCI 270.

DSCI 3321 Lactation Physiology (3 units)

Term Typically Offered: F

Prerequisite: ASCI 112 or ASCI 1101; ASCI 220 or ASCI 2220; and one of the following: DSCI 230, DSCI 2230, or ASCI 2230.

Mammary gland anatomy, development and function as it relates to milk production. Endocrine regulation and development of lactation, metabolic adaptations to lactation, milk component synthesis. Mammary gland disorders associated with lactation and common control strategies. Course may be offered in classroom-based or online format. 3 lectures. Formerly DSCI 321.

DSCI 3330 Dairy Cattle Reproductive Management and Artificial Insemination (3 units)

Term Typically Offered: F

Prerequisite: One of the following: DSCI 230, DSCI 2230, ASCI 229, or ASCI 2229.

Reproductive management of dairy cattle including estrus synchronization, artificial insemination procedures, reproductive technologies, fertility and reproductive disorders and herd reproductive evaluation. 2 lectures, 1 laboratory. Formerly DSCI 330.

DSCI 3344 Dairy Microbiology (3 units)

Term Typically Offered: F

Prerequisite: One of the following: DSCI 229, DSCI 2229, FSN 330, or FDSC 3330; and STAT 218 or STAT 1110.

Microorganisms involved in the fermentation, ripening, and spoilage of dairy products. Disease transmission and the presence of indicator microbes in dairy products. Course may be offered in classroom-based or online format. 2 lectures, 1 laboratory. Formerly DSCI 444.

DSCI 3388 Dairy Farmstead Operations: Cow to Cheddar (3 units)

Term Typically Offered: F, SP

2026-28 or later: Upper-Div GE Area 2/5

2020-26 catalogs: Upper-Div GE Area B

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); and completion of GE Area 5B with a grade of C- or better (GE Area B2 for the 2020-26 catalogs).

Science and technology involved in dairy farmstead operations from calf care, ruminant nutrition, lactation, animal welfare, metabolic diseases, milk biochemistry, cheesemaking, to dairy food safety. Processes, equipment, and management practices with a focus on cheese production from farm to fork. 3 lectures. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs).

DSCI 4400 Special Problems for Advanced Undergraduates (1-2 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of special problems. Repeatable up to 4 units. Formerly DSCI 400.

DSCI 4401 Physical and Chemical Properties of Dairy Products (3 units)

Term Typically Offered: F

Prerequisite: CHEM 124, CHEM 1120, or graduate standing. Recommended: CHEM 312 or CHEM 2240; and CHEM 314 or CHEM 3350.

Composition, structure and properties of milk and milk products. Physical and chemical changes that occur during processing and storage of dairy products. Objective measurement of chemical and physical properties. 2 lectures, 1 laboratory. Formerly DSCI 401.

DSCI 4402 Quality Assurance and Control of Dairy Products (3 units)

Term Typically Offered: SP

Prerequisite: STAT 218, STAT 1110, or graduate standing. Recommended: One of the following: DSCI 444, DSCI 3344, MCRO 421, or MCRO 4421.

Current methods used to evaluate dairy products with respect to production plant economics and consumer safety. Design and interpretation of Hazard Analysis Critical Control Points (HACCP), environmental monitoring, allergen control, and food defense programs for ensuring product quality and safety. 2 lectures, 1 laboratory. Formerly DSCI 402.

DSCI 4410 Dairy Nutrition (3 units)

Term Typically Offered: SP

Prerequisite: ASCI 355 or ASCI 3355; and STAT 218 or STAT 1110.

Nutrient metabolism and diet formulation technologies for all classes of dairy cattle; whole-farm feed management; physiological and nutritional aspects of predominant metabolic disorders; on-farm auditing and troubleshooting of nutritional management. Field trip may be required. 2 lectures, 1 laboratory. Formerly DSCI 410.

DSCI 4412 Dairy Farm Consultation (3 units)

Term Typically Offered: SP

Corequisite: DSCI 432 or DSCI 4432.

Student consultation teams visit dairies and attend management training seminars followed by presenting management recommendations to the dairy owners, consultants, and other industry leaders. Field trip required. 1 seminar and supervised work. Formerly DSCI 412.

DSCI 4422 Breeding and Genetics of Dairy Cattle (3 units)

Term Typically Offered: SP

Prerequisite: ASCI 302 or ASCI 3302.

Evaluation of inherited characteristics in dairy cattle, including principles of inheritance and genomic evaluations. Proving and selecting sires and dams, dairy genetic evaluations. Course may be offered in classroom-based or online format. 3 lectures. Formerly DSCI 422.

DSCI 4432 Advanced Dairy Herd Management (4 units)

Term Typically Offered: F

Prerequisite: DSCI 230 or DSCI 2230.

Instruction and lab experience in key areas of dairy farm management including records analysis, cattle health, heifer development, milk production and quality, facilities, safety, and financials. 3 lectures, 1 laboratory. Formerly DSCI 432.

DSCI 4470 Special Advanced Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly DSCI 470.

DSCI 4471 Special Advanced Laboratory (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 laboratories. Formerly DSCI 471.

DSCI 5500 Individual Study (1-4 units)

Term Typically Offered: TBD

Prerequisite: Consent of department head.

Advanced independent study planned and completed under the direction of a member of the Dairy Science faculty. Repeatable up to 4 units. Formerly DSCI 500.

DSCI 5570 Special Advanced Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Graduate standing and consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 9 units. 1 to 3 seminars. Formerly DSCI 570.

DSCI 5571 Special Advanced Laboratory (1-3 units)

Term Typically Offered: TBD

Prerequisite: Graduate standing and consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 laboratories. Formerly DSCI 571.