Program

BS in Nutrition and Food Sciences
Options in: General Dietetics
Foodservice Administration
Minor in Foodservice Administration
Minor in Nutrition
MS in Nutritional Science
Options in: General Nutritional Science
Nutrition Education

The courses and programs in nutrition and food sciences have emerged from and are integrated with the physical and life sciences. The science of nutrition is concerned with the ingestion and utilization of food for the purposes of survival, prevention of disease, and the promotion of positive health. Courses for non-majors, as well as majors, are offered.

Faculty and Facilities

Faculty members, in addition to teaching and advising, are actively involved in research and other professional activities. Facilities include laboratories for courses and research in food science and nutrition. Our computer facilities improve instructional quality with programs for nutrition analyses of diets, food cost control, recipe and menu evaluation, tutorials, and simulations. Externships are coordinated for majors in a variety of community programs such as the Sierra Cascade Nutrition and Activity Consortium (SCNAC) and the Overweight Prevention and Treatment (OPT) for the Fit Kids program, both directed by Cindy Wolff. These programs are designed to assist North State residents in making changes in nutrition, exercise, and lifestyle that promote healthy eating and activity patterns.

Career Outlook

Dietetics is the study of the relationship of food to the health and well-being of individuals and groups. The US Bureau of Labor Statistics projects the employment of dieticians is expected to increase 18–26% through the year 2014 as a result of increasing emphasis on disease prevention through improved health habits. A growing and aging population will boost the demand for employment in hospitals, residential care facilities, schools, prisons, community health programs, and home health care agencies. Public interest in nutrition and increased emphasis on healthy lifestyles also will spur demand, especially in management.

Graduates may also work in food service and processing industries, wellness programs, public communication, and product development and promotion. Courses in the Option in General Dietetics meet the requirements of the American Dietetic Association for an accredited Didactic Program in Dietetics (DPD). Nutrition and Food Science majors gain knowledge and skills in medical nutrition therapy, community nutrition, food science, and foodservice management. The Minor in Nutrition offers an area of specialization for majors in exercise physiology, child development, nursing, health and community services, and others. The Minor in Foodservice Administration offers an area of specialization for majors in business administration, management, marketing, recreation, and tourism.

The MS in Nutritional Science provides an opportunity for students to increase competence in the science of nutrition subject matter in preparation for college teaching, research, administrative positions in public and private agencies, and graduate study beyond the master's degree. The Option in Nutrition Education is designed specifically to facilitate nutrition professionals in communicating information to promote optimal health and nutritional status. A post-baccalaureate Dietetic Internship, which is accredited by the American Dietetic Association, is available for graduate students who wish to become eligible to sit for the registration examination to become registered dietitians and who are enrolled in the MS in Nutritional Sciences program. The Dietetic Internship consists of thirty-two weeks of actual practice at sites in the area. An application to the Dietetic Internship program must be submitted to the program director after completing graduate course work.

Nutrition and Food Sciences

College of Natural Sciences
Dean: James L.J. Houpis
Department of Nutrition and Food Sciences
Chair: Kathryn Silliman
Holt Hall 123
530-898-6805
e-mail: nutrition@csuchico.edu
http://www.csuchico.edu/nfsc/

Graduate Advisor:
Kathryn Silliman
Holt Hall 123
530-898-6245
The Bachelor of Science in Nutrition and Food Sciences

Total Course Requirements for the Bachelor's Degree: 120 units
See “Requirements for the Bachelor’s Degree” in the University Catalog for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

A suggested Major Academic Plan (MAP) has been prepared to help students meet all graduation requirements within four years. Please request a plan from your major advisor or visit it and other current advising information on the CSU, Chico Web.

General Education Requirements: 48 units
See “General Education Requirements” in the University Catalog and the Class Schedule for the most current information on General Education Requirements and course offerings. The course requirements marked below with an asterisk (*) may also be applied toward General Education.

Cultural Diversity Course Requirements: 6 units
See “Cultural Diversity” in the University Catalog. Most courses taken to satisfy these requirements may also apply to General Education.

American Institutions Requirement: 6 units
See the “American Institutions Requirement” under “Bachelor’s Degree Requirements.” This requirement is normally fulfilled by completing HIST 130 and POLS 155. Courses used to satisfy this requirement do not apply to General Education.

Literacy Requirement:
See “Mathematics and Writing Requirements” in the University Catalog. Writing proficiency in the major is a graduation requirement and may be demonstrated through satisfactory completion of a course in your major which has been designated as the Writing Proficiency (WP) course for the semester in which you take the course. Students who earn below a C– are required to repeat the course and earn a C– or better to receive WP credit. See the Class Schedule for the designated WP courses for each semester. You must pass ENGL 130 (or its equivalent) with a C– or better before you may register for a WP course.

Course Requirements for the Major: 67–69 units
The following courses, or their approved transfer equivalents, are required of all candidates for this degree. Additional required courses, depending upon the selected option or advising pattern, are outlined following the degree core program requirements.

Note: A maximum of 15 units of externship courses may be applied to a bachelor’s degree at CSU, Chico.

Major Core: 43 units
15 courses required:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 101</td>
<td>Human Physiology</td>
<td>4.0 FS</td>
</tr>
<tr>
<td>BIOL 211</td>
<td>Allied Health Microbiology</td>
<td>4.0 FS</td>
</tr>
<tr>
<td>CHEM 107</td>
<td>Gen Chem for Applied Sciences</td>
<td>4.0 FS</td>
</tr>
<tr>
<td>CHEM 108</td>
<td>Organic Chem for Applied Sci</td>
<td>4.0 FS</td>
</tr>
<tr>
<td>NFSC 120</td>
<td>Elementary Food</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>NFSC 155</td>
<td>Intro to Nutrition &amp; Food Sci</td>
<td>1.0 FS</td>
</tr>
<tr>
<td>NFSC 230</td>
<td>Intro Foodserv Adm</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>NFSC 241</td>
<td>Human Nutrition</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: BIOL 104, CHEM 108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 320</td>
<td>Science of Food</td>
<td>3.0 FA</td>
</tr>
<tr>
<td>Prerequisites: BIOL 211, CHEM 108, NFSC 120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 360</td>
<td>Nutrm Throughout Life Cycle</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: BIOL 104; NFSC 100 or NFSC 240</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 429</td>
<td>Cultural Food</td>
<td>3.0 SP WP</td>
</tr>
<tr>
<td>Prerequisites: ENGL 130 (or its equivalent) with a grade of C– or higher</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Electives Requirement:
To complete the total units required for the bachelor’s degree, select additional elective courses from the total University offerings. You should consult with an advisor regarding the selection of courses which will provide breadth to your University experience and possibly apply to a supportive second major or minor.

Suggested electives:

Electives: 3 courses required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC 350</td>
<td>Meat and the Consumer</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>BLAW 413</td>
<td>Employment Law</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: At least junior standing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT 300</td>
<td>Communication in Business</td>
<td>3.0 FS WP</td>
</tr>
<tr>
<td>Prerequisites: ENGL 130 (or its equivalent) with a grade of C– or higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT 442</td>
<td>Managing Differences</td>
<td>3.0 FA</td>
</tr>
<tr>
<td>Prerequisites: MGMT 303.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKPS 301</td>
<td>Corporate Technology</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>MKTG 305</td>
<td>Survey of Marketing</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>NFSC 499H</td>
<td>Honors Senior Thesis or Proj</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: NFSC 100 or NFSC 240; selected screening courses by content area, all with grades which place student in top five percent; interview; faculty permission.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSSC 305</td>
<td>Introduction to Wines</td>
<td>3.0 FA</td>
</tr>
<tr>
<td>Prerequisites: At least 21 years of age.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECR 354</td>
<td>Resort/Lodging Development</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: RECR 200, RECR 250, successful completion of computer literacy requirement, or faculty permission.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECR 420</td>
<td>Recreation Budget/Finance Mgmt</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: RECR 200; one course chosen from RECR 220, RECR 240, RECR 250, or RECR 260; successful completion of computer literacy requirement, or faculty permission.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECR 524</td>
<td>Commercial Recr Operations</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: RECR 200, RECR 420, RECR 422, one course chosen from RECR 220, RECR 240, RECR 250, or RECR 260; successful completion of computer literacy requirement, or faculty permission.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Option in General Dietetics: 26 units
10 courses required:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 350</td>
<td>Introductory Biochemistry</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: CHEM 108.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 350L</td>
<td>Introductory Biochemistry Lab</td>
<td>1.0 FS</td>
</tr>
<tr>
<td>Prerequisites: Concurrent enrollment in or prior completion of CHEM 150.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 345</td>
<td>Diet Supp &amp; Functional Foods</td>
<td>3.0 Inq</td>
</tr>
<tr>
<td>Prerequisites: NFSC 240.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 370</td>
<td>Clinical Nutrition</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: BIOL 104, CHEM 108, NFSC 240.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 370L</td>
<td>Nutrition Assessment Lab</td>
<td>1.0 SP</td>
</tr>
<tr>
<td>Prerequisites: NFSC 370 (may be taken concurrently).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANSC 440</td>
<td>Advanced Human Nutrition</td>
<td>3.0 FA</td>
</tr>
<tr>
<td>Prerequisites: NFSC 240, CHEM 350 or CHEM 451.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 460</td>
<td>Nutrition Counseling &amp; Educ</td>
<td>3.0 FA</td>
</tr>
<tr>
<td>Prerequisites: NFSC 370, NFSC 370L, NFSC 360.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 465</td>
<td>Community Nutrition</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: NFSC 370, NFSC 360, NFSC 460, NFSC 440, permission of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFSC 470</td>
<td>Medical Nutrition Therapy</td>
<td>3.0 SP</td>
</tr>
<tr>
<td>Prerequisites: CHEM 350 or CHEM 451, NFSC 370L and NFSC 440.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 101</td>
<td>Principles of Psych</td>
<td>3.0 FS</td>
</tr>
<tr>
<td>Prerequisites: CHEM 350 or CHEM 451, NFSC 370L and NFSC 440.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grading Requirement:
All courses taken to fulfill major course requirements must be taken for a letter grade except those courses specified by the department as Credit/No Credit grading only.
Advising Requirement:
Advising is mandatory for all majors in this degree program. Consult your undergraduate advisor for specific information.

Honors in the Major
Honors in the Major is a program of independent work in your major. It involves six units of honors course work completed over two semesters. The Honors in the Major program allows you to work closely with a faculty mentor in your area of interest on an original project or research project. Students sometimes take their projects beyond the University for submission in professional journals, presentation at conferences, or competition in shows. Such work can be valuable for graduate school and professional life.

Some common features of Honors in the Major program are:
1. You must take 6 units of Honors in the Major course work. At least 3 of these units are independent study (399, 499H) as specified by your department. You must complete each class with a minimum grade of B.
2. You must have completed 9 units of upper-division course work or 21 overall units in your major before you can be admitted to Honors in the Major. Check the requirements for your major carefully, as there may be specific courses that must be included in these units.
3. Your cumulative GPA should be at least 3.5 or within the top 5% of majors in your department.
4. Your GPA in your major should be at least 3.5 or within the top 5% of majors in your department.
5. Most students apply for or are invited to participate in Honors in the Major during the second semester of their junior year. Then they complete the 6 units of course work over the two semesters of their senior year.
6. Your honors work culminates with a public presentation of your honors project.

While Honors in the Major is part of the Honors Program, each department administers its own program. Please contact your major department or major advisor to apply.

Clinical Nutrition
Students preparing for advanced degrees or careers in nutrition research should complete the required units of the Option in General Dietetics and also complete the following courses, which include a Chemistry minor.

- BIOL 303: Human Genetics
  - Prerequisites: One biological sciences course.
  - 3.0 FS *

  OR (the following course may be substituted for the above)

- BIOL 360: Genetics
  - Prerequisites: BIOL 151 with permission of instructor.
  - 4.0 FS

- OR (the following course may be substituted for the above)

- BIOL 416: Vertebrate Physiology
  - Prerequisites: BIOL 152, BIOL 153; CHEM 108 or CHEM 270.
  - 4.0 FS

- CHEM 270: Organic Chemistry
  - Prerequisites: BIOL 112.
  - 4.0 FS

- CHEM 320: Quantitative Analysis
  - Prerequisites: CHEM 112.
  - 4.0 FS

- CHEM 370: Organic Chemistry
  - Prerequisites: CHEM 270.
  - 3.0 FS

- CHEM 370L: Organic Chem Laboratory
  - Prerequisites: CHEM 370 may be taken as a prerequisite or concurrently with CHEM 370L.
  - 1.0 FS

- CHEM 451: Biochemistry
  - Prerequisites: CHEM 370.
  - 3.0 FS

- CHEM 451L: Biochemistry Laboratory
  - Prerequisites: CHEM 370, CHEM 451; CHEM 370L or CHEM 370M; or faculty permission.
  - 2.0 FS

The Minor in Foodservice Administration
Course Requirements for the Minor: 25 units

The following courses, or their approved transfer equivalents, are required of all candidates for this minor.

6 courses required:

- BIOL 211: Allied Health Microbiology
  - Prerequisites: A college course in biology and in general chemistry.
  - 4.0 FS

- NFSC 120: Elementary Food
  - 3.0 FS

- NFSC 100: Basic Nutrition
  - 3.0 FS *

- NFSC 230: Intro Foodserv Adm
  - 3.0 FS

- NFSC 430: Foodservice Procurement & Mgmt
  - Prerequisites: BIOL 211; NFSC 230 or MGMT 303; NFSC 120.
  - 3.0 FA

- NFSC 431: Foodservice Equip/Production
  - Prerequisites: NFSC 430.
  - 3.0 SP

2 courses selected from:

- ANSC 350: Meat and the Consumer
  - 3.0 FS

- NFSC 429: Cultural Food
  - 3.0 SP WP

- Prerequisites: ENGL 130 (or its equivalent) with a grade of C- or higher, NFSC 120, NFSC 320; GEOG 102 and ANTH 111 are recommended.

- NFSC 489: Internship
  - 1.0-6.0 FS

- You must take NFSC 489 for a minimum of 3 units.

- PSSC 305: Introduction to Wines
  - 3.0 FA

- Prerequisites: At least 21 years of age.

- PSSC 390: Food Forever
  - 3.0 FS * NW

- Prerequisites: RECR 200, RECR 250, successful completion of computer literacy requirement, or faculty permission.

- RECR 422: Leisure Services Promotion
  - 3.0 FS

- Prerequisites: Successful completion of computer literacy requirement, or faculty permission.

- RECR 524: Commercial Rec Operations
  - 3.0 FS

- Prerequisites: RECR 200, RECR 420, RECR 422, one course chosen from RECR 220, RECR 240, RECR 250, or RECR 260; successful completion of computer literacy requirement, or faculty permission.

The Minor in Nutrition
Course Requirements for the Minor: 24 units

The following courses, or their approved transfer equivalents, are required of all candidates for this minor.

4 courses required:

- BIOL 104: Human Physiology
  - 4.0 FS *

- CHEM 107: Gen Chem for Applied Sciences
  - 4.0 FS *

- Prerequisites: Intermediate Algebra

  - 4.0 FS

- Prerequisites: CHEM 107 or CHEM 111 or equivalent.

- NFSC 240: Human Nutrition
  - Prerequisites: BIOL 104, CHEM 108.
  - 3.0 FS

3 courses selected from:

- CHEM 350: Introductory Biochemistry
  - 3.0 FS

- Prerequisites: CHEM 108.

- NFSC 120: Elementary Food
  - 3.0 FS

- NFSC 303: Nutrition/Physical Fitness
  - 3.0 FS *

- Prerequisites: One lower-division course in biological sciences.

- NFSC 345: Diet Suppl & Functional Foods
  - 3.0 Inq

- Prerequisites: NFSC 240.

- NFSC 360: Nutrtn Throughout Life Cycle
  - 3.0 FS

- Prerequisites: BIOL 104; NFSC 100 or NFSC 240.

- NFSC 370: Clinical Nutrition
  - Prerequisites: BIOL 104, CHEM 108, NFSC 240.
  - 3.0 FS

- NFSC 403: Adv Nutrition/Physical Fitness
  - 3.0 Inq

- Prerequisites: NFSC 303 or NFSC 240; CHEM 108.

- NFSC 460: Nutrition Counseling & Educ
  - 3.0 FA

  Prerequisites: NFSC 370, NFSC 370L, NFSC 360.

The Master of Science in Nutritional Science
Course Requirements for the Master's Degree: 30 units

Continuous enrollment is required. A maximum of 9 semester units of transfer and/or CSU Chico Open University course work may be applied toward the degree.

Graduate Time Limit:
All requirements for the degree are to be completed within five years of the end of the semester of enrollment in the oldest course applied toward the degree. See “Graduate Education” in the University Catalog for complete details on general degree requirements.

The MS in Nutritional Science provides an opportunity for students to:
1. Specialize in nutrition, food science, clinical nutrition, or community nutrition.
2. Complete a master's degree and concurrently qualify for membership in the American Dietetic Association.
3. Increase competence in food and nutrition subject matter in preparation for college teaching, research, graduate study beyond the master's degree, and administrative positions in public and private agencies.

Prerequisites for Admission to Conditionally Classified Status:
1. Satisfactory grade point average as specified in “Admission to Master's Degree Programs” in the University Catalog.
2. Approval by the department and the Office of Graduate Studies.
3. An acceptable baccalaureate from an accredited institution, or an equivalent approved by the Office of Graduate Studies, which includes a minimum of 24 upper-division units among the subject areas of biochemistry, chemistry, nutrition and food science, mathematics, microbiology, physiology, and statistics. Computer literacy is also required. Students with deficiencies in undergraduate preparation may be required to take prerequisite course work at the discretion of the Graduate Coordinator after consultation with the student and faculty in the subject matter area(s) considered deficient. In addition, prerequisites for graduate-level courses must have been completed within the five years prior to taking the graduate courses. Outdated prerequisites must be validated either by examination or by registration (credit will not be earned for validating this course work).

4. Approval by the Nutrition and Food Science Graduate Coordinator.

**Prerequisites for Admission to Classified Status:**

In addition to any requirements listed above:

1. Development and submission of an approved program plan in consultation with the Graduate Advisor and a faculty member of the student's choice.

2. Completion of 12 departmentally specified units of letter-graded 400/500/600-level course work (of which 9 units must be in residence and part of the approved program) with a minimum grade point average of 3.0.

**Adancement to Candidacy:**

In addition to any requirements listed above:

1. Classified standing and completion at the University of at least 15 units of approved course work.

2. Completion of MATH 615 or equivalent.

**Requirements for the MS in Nutritional Science:**

Completion of all requirements as established by the program graduate committee, the graduate advisory committee, and the Office of Graduate Studies, to include:

1. Completion of 30 units of approved 400/500/600-level course work as follows:

   (a) Units required for both options:

   **13 units required:**

   MATH 615 Stat Methods for Grad Research 3.0 FA
   Prerequisites: MATH 105, MATH 350, MATH 315, or MATH 305 (only one is required).
   NFSC 600 Res Meth in Nutritional Sci 4.0 Inq
   Prerequisites: MATH 615 or similar statistics course.
   NFSC 641 Topics in Macronutrients 3.0 Inq
   Prerequisites: NFSC 440, biochemistry.
   NFSC 642 Topics in Vitamins & Minerals 3.0 Inq
   Prerequisites: NFSC 440, biochemistry.

   **3–6 units required:**

   NFSC 697P Professional Paper 3.0 FS
   NFSC 699T Master's Thesis 1.0–6.0 FS

   **2–6 units selected from:**

   NFSC 620 Food Science 2.0 Inq
   Prerequisites: NFSC 320, biochemistry.
   NFSC 661 Top in Developmntl Nutrition 2.0 Inq
   Prerequisites: NFSC 361, biochemistry.
   NFSC 665 Topics in Community Nutrition 2.0 Inq
   NFSC 667 Nutrition: International Iss 2.0 Inq
   Prerequisites: NFSC 429, biochemistry.
   NFSC 670 Topics in Clinical Nutrition 2.0 Inq
   Prerequisites: NFSC 470, biochemistry.
   NFSC 689 Graduate Internship 1.0–6.0 FS
   NFSC 697P Professional Paper 3.0 FS
   NFSC 699T Master's Thesis 1.0–6.0 FS
   
   **Complete one of the following options:**

   **The Option in General Nutritional Science**

   9 units required:

   BIOL 416 Vertebrate Physiology 4.0 FS
   Prerequisites: BIOL 152, BIOL 153; CHEM 108 or CHEM 270;
   CHEM 451 Biochemistry 3.0 FS
   Prerequisites: CHEM 370.
   CHEM 455L Biochemistry Laboratory 2.0 FS
   Prerequisites: CHEM 320, CHEM 451; CHEM 370L or CHEM 370M; or faculty permission.

   **The Option in Nutrition Education**

   9–12 units required:

   NFSC 660 Nutrition Education 3.0 Inq
   Prerequisites: NFSC 465.
   NFSC 689 Graduate Internship 1.0–6.0 FS

   PSYC 573 Counseling Psychology 3.0 FS
   Prerequisites: PSYC 381 or PSYC 382, senior or graduate standing, faculty permission.

   (b) At least 18 of the units required for the degree must be in 600-level courses.

   (c) Not more than 9 semester units of transfer and/or extension credit (correspondence courses and U.C. extension course work are not acceptable).

   (d) Not more than a total of 10 units of Independent Study (697), Professional Paper (697P), and Master's Thesis (699T); not more than 3 units of Professional Paper (697P) and 6 units of Master's Thesis (699T).

   2. Completion and final approval of a thesis or a professional paper as specified by the graduate advisory committee.

   3. Completion of a comprehensive final oral examination in the field of study.

   4. Approval by the graduate advisory committee and the Graduate Coordinator on behalf of the faculty of the University.

**Culminating Activity:**

1. **Thesis Plan.** The candidate shall submit an acceptable thesis based on original research and developed by the student and agreed to by the student's graduate advisory committee.

   (a) Thesis proposal: A proposal of the thesis must be submitted and approved by the graduate advisory committee before the student begins the research. The proposal includes a literature review, a statement of the problem and purpose or hypothesis of the research, research design, and methods to be used. The proposal is a formal document that must have appropriate attention given to the matters of format, documentation, and quality of writing.

   (b) Registration in NFSC 697P, Professional Paper.

   (c) Approval of thesis: Members of the graduate advisory committee shall approve the thesis.

   (d) Oral defense: the candidate's graduate advisory committee shall conduct an oral defense of the thesis. The oral defense is generally limited to matters within the scope of the thesis.

2. **Professional Paper Plan.** The candidate shall submit an acceptable professional paper based on original research developed by the student and agreed to by the student's graduate advisory committee.

   (a) Professional paper proposal: A proposal of the professional paper must be submitted and approved by the graduate advisory committee before the student begins the research. The proposal includes a literature review, a statement of the problem and purpose or hypothesis of the research, research design, and methods to be used. The proposal is a formal document that must have appropriate attention given to the matters of format, documentation, and quality of writing.

   (b) Registration in NFSC 697P, Professional Paper.

   (c) Approval of professional paper: Members of the graduate advisory committee shall approve the professional paper.

   (d) Oral defense: the candidate's graduate advisory committee shall conduct an oral defense of the professional paper. The oral defense is generally limited to matters within the scope of the paper.

**Graduate Literacy Requirement:**

Writing proficiency is a graduation requirement.

Nutritional Science majors will demonstrate their writing competence through successful completion of written papers assigned in NFSC 660. For those students not completing NFSC 660 under the Option in General Nutritional Science, a writing portfolio will be evaluated for literacy.

**Graduate Grading Requirements:**

All courses in the major (with the exceptions of Independent Study—597/697, Comprehensive Examination—696, Master's Project—699P and Master's Thesis—699T) must be taken for a letter grade, except those courses specified by the department as ABC/No Credit (400/500-level courses), AB/No Credit (600-level courses), or Credit/No Credit grading only. A maximum of 10 units of both ABC/No Credit and Credit/No Credit grades may be used on the approved program (including 597/697, 696, 699P, 699T and courses outside the major). While grading standards are determined by individual programs and instructors, it is also the policy of the University that unsatisfactory grades may be given when work fails to reflect achievement of the high standards, including high writing standards, expected of students pursuing graduate study.

Students must maintain a minimum 3.0 grade point average in each of the following three categories: all course work taken at any accredited institution subsequent to admission to the master's program; all course work taken at CSU, Chico subsequent to admission to the program; and all courses on the approved master's degree program.

**Graduate Advising Requirement:**

Advising is mandatory each semester for Nutritional Science majors. Consult the Graduate Coordinator for specific information.
Nutrition and Food Science Course Offerings

Please see the section on “Course Description Symbols and Terms” in the University Catalog for an explanation of course description terminology and symbols, the course numbering system, and course credit units. All courses are lecture and discussion and employ letter grading unless otherwise stated. Some prerequisites may be waived with faculty permission. Many syllabi are available on the Chico Web.

**NFSC 100 Basic Nutrition** 3.0 Fa/Spr
Physiological, social, and psychological factors affecting food intake are examined. Relationships of nutrients to health throughout life. This is an approved General Education course. CAN FCS 2.

**NFSC 100H Basic Nutrition—Honors** 3.0 Spring
Prerequisites: Acceptance into the Honors Program. Physiological, social, and psychological factors affecting food intake are examined. Relationships of nutrients to health throughout life. This is an approved General Education course.

**NFSC 120 Elementary Food** 3.0 Fa/Spr
An elementary study of the physical and chemical properties and reactions of foods. An emphasis on food purchasing, storage, preparation, and use as well as safety, sanitation, and nutrient preservation. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see the Class Schedule. CAN FCS 8.

**NFSC 155 Introduction to Nutrition and Food Sciences** 1.0 Fa/Spr
Introduction to professional associations, legislation, and career opportunities in the Nutrition and Food Sciences major and an introduction to campus resources. Credit/no credit grading only.

**NFSC 198 Special Topics** 1.0–3.0 Fa/Spr
This course is for special topics, which may be offered for 1.0 to 3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See the Class Schedule for the specific topic being offered.

**NFSC 230 Introduction to Foodservice Administration** 3.0 Fa/Spr
Prerequisites: NFSC 120. Study of management tools and practices ranging from conceptual to applied as they relate to all aspects of the field of nutrition and food sciences.

**NFSC 240 Human Nutrition** 3.0 Fa/Spr
Prerequisites: BIOL 104, CHEM 108. Physiological and chemical roles of proteins, lipids, carbohydrates, minerals, vitamins, and water in the functioning of the human body. Factors affecting the digestion of foods, use of nutrients, and the body's need for nutrients.

**NFSC 303 Nutrition and Physical Fitness** 3.0 Fa/Spr
Prerequisites: One lower-division course in biological sciences. Analyzes and evaluates current practices and theories regarding nutrition and its relationship to athletics, weight control, and physical exercise. This is an approved General Education course.

**NFSC 320 Science of Food** 3.0 Fall
Prerequisites: BIOL 211, CHEM 108, NFSC 120. Application of principles and methods of physical and sensory analysis of food; effects of additives, irradiation, and biotechnology on the food supply. Group research projects are conducted, presented, and evaluated. 2.0 hours discussion, 3.0 hours laboratory. Special fee required; see the Class Schedule.

**NFSC 345 Diet Supplements and Functional Foods** 3.0 Inquire
Prerequisites: NFSC 240. Scientific overview of popular dietary supplements and food phytochemicals and their relation to human health and disease. Current government regulations are also considered.

**NFSC 360 Nutrition Throughout the Life Cycle** 3.0 Fa/Spr
A survey of nutritional needs from conception to death, including the relationship of nutrients to health and well-being and factors which affect food selection of different population groups.

**NFSC 370 Clinical Nutrition** 3.0 Fa/Spr
Prerequisites: BIOL 104, CHEM 108, NFSC 240. A study of the principles and practices of dietary modification in the treatment of disease. Practice in calculating and writing the various contemporary therapeutic diets as part of the nutrition care process.

**NFSC 370L Nutrition Assessment Laboratory** 1.0 Spring
Prerequisites: NFSC 370 (may be taken concurrently). Active application of tools and techniques used for assessment of nutritional status. Research methodology and application of research finding to nutrition care will be introduced. Majors only. 3.0 hours laboratory. Special fee required; see the Class Schedule.

**NFSC 398 Special Topics** 1.0–3.0 Fa/Spr
This course is for special topics offered for 1.0–3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See the Class Schedule for the specific topic being offered.

**NFSC 399 Special Problems** 1.0–3.0 Fa/Spr
This course is an independent study of special problems offered for 1.0–3.0 units. You must register directly with a supervising faculty member. You may take this course more than once for a maximum of 6.0 units. Credit/no credit grading only.

**NFSC 403 Advanced Nutrition and Physical Fitness** 3.0 Inquire
Prerequisites: NFSC 303 or NFSC 240; CHEM 108. Study of world food patterns, including food customs of peoples of different ethnic backgrounds. Emphasis upon nutritional significance. Survey of social, economic, religious, and aesthetic aspects of food customs. 2.0 hours discussion, 3.0 hours laboratory. This is a writing proficiency, WP, course; a grade of C– or better certifies writing proficiency for majors. Special fee required; see the Class Schedule.

**NFSC 420 Experimental Food** 3.0 Inquire
Prerequisites: NFSC 320. Individual research projects will be planned, conducted, evaluated, and discussed in writing; sensory and objective analyses for evaluation of foods; functions of components in food systems. 2.0 hours discussion, 3.0 hours laboratory.

**NFSC 429 Cultural Food** 3.0 Spring
Prerequisites: ENGL 130 (or its equivalent) with a grade of C– or higher, NFSC 120, NFSC 320; GEOG 102 and ANTH 113 are recommended. Study of the principles and practices of dietary modification in the treatment of disease. Practice in calculating and writing the various contemporary therapeutic diets as part of the nutrition care process.

**NFSC 430 Foodservice Procurement and Management** 3.0 Fall
Prerequisites: BIOL 211; NFSC 230 or MGMT 303; NFSC 120. Principles of purchasing for commercial and institution foodservice. A study of the types of food, their distribution, and laws affecting sales and quality; purchase procedures for other supplies and equipment. Preparation of purchase specifications, factors affecting cost control, and theories of internal control. 2.0 hours lecture, 3.0 hours laboratory.

**NFSC 431 Foodservice Equipment and Production Systems** 3.0 Spring
Prerequisites: NFSC 430. Application of procedures and principles of menu planning, operation of foodservice equipment, recipe adaptation and costing, employee and production schedules, environmental health control, foodservice training, and merchandising techniques. Experience in a variety of foodservice systems. ServSafe Certification is available as part of the course. 2.0 hours discussion, 3.0 hours laboratory.

**NFSC 432 Advanced Foodservice Administration** 3.0 Inquire
Prerequisites: NFSC 430, NFSC 431. Advanced study and application of foodservice concepts and procedures for accountable management of organizational resources. 2.0 hours seminar, 2.0 hours activity.

**NFSC 440 Advanced Human Nutrition** 3.0 Fall
Prerequisites: NFSC 240; CHEM 350 or CHEM 451. Principles integrated from physiology, biochemistry, and nutrition with its relationship among nutrition, fitness, and exercise performance. Emphasis is on the application of current research findings.

**NFSC 455 Futures in Nutrition and Food Science** 1.0 Fall
Prerequisites: Senior standing. Overview of career opportunities and application procedures for post-baccalaureate programs in the discipline.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Enroll Year(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFSC 460</td>
<td>Nutrition Counseling and Education</td>
<td>3.0</td>
<td>Fall</td>
<td>Prerequisites: NFSC 370, NFSC 378, NFSC 360, NFSC 340. Communication skills for nutrition counseling and nutrition education; strategies and techniques for nutrition education; development of nutrition care plans; principles of evaluation and documentation.</td>
</tr>
<tr>
<td>NFSC 465</td>
<td>Community Nutrition</td>
<td>3.0</td>
<td>Fa/Spr</td>
<td>Prerequisites: NFSC 370, NFSC 360, NFSC 460, NFSC 440. Permission of instructor. Acquaints the student with nutrition programs which relate the science of nutrition to the improvement and maintenance of the health status of individuals and groups. Community assessment, program planning and funding emphasized. You may be required to purchase professional liability insurance. 2.0 hours seminar, 3.0 hours clinical.</td>
</tr>
<tr>
<td>NFSC 470</td>
<td>Medical Nutrition Therapy</td>
<td>3.0</td>
<td>Spring</td>
<td>Prerequisites: CHEM 350 or CHEM 531, NFSC 370L &amp; NFSC 440. Investigation of the physiological and biochemical changes imposed on the body by certain disorders as well as by dietary modifications, and analysis of nutritive value of diets prescribed for treatment of disease as part of the nutrition care process. Adaptation of dietary patterns of individuals to special needs.</td>
</tr>
<tr>
<td>NFSC 489</td>
<td>Externship</td>
<td>1.0–6.0</td>
<td>Fa/Spr</td>
<td>This course is an externship offered for 1.0–6.0 units. You must register directly with a supervising faculty member. The externship provides students with preprofessional experience and is designed as a transition to professional practice wherein the student applies learned theory to actual practice. Students may be required to purchase professional liability insurance. You may take this course more than once for a maximum of 15.0 units. Credit/no credit grading only.</td>
</tr>
<tr>
<td>NFSC 497</td>
<td>Portfolio Review</td>
<td>1.0</td>
<td>Fa/Spr</td>
<td>Prerequisites: Senior standing, permission of Didactic Program Director. Design of a portfolio representative of the skills and abilities required for completion of the Didactic Program in Dietetics according to the competencies set forth by the accrediting body, the American Dietetic Association. Credit/no credit grading only.</td>
</tr>
<tr>
<td>NFSC 498</td>
<td>Special Topics</td>
<td>3.0</td>
<td>Fa/Spr</td>
<td>This course is for special topics offered for 1.0–3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See the Class Schedule for the specific topic being offered.</td>
</tr>
<tr>
<td>NFSC 499H</td>
<td>Honors Senior Thesis or Project</td>
<td>3.0</td>
<td>Fa/Spr</td>
<td>Prerequisites: NFSC 100 or NFSC 240; selected screening courses by content area, all with grades which place student in top five percent; interview; faculty permission. An independent study involving substantial research for a thesis or project culminating in a public presentation. Students will enroll in NFSC 499H twice. You may take this course more than once for a maximum of 6.0 units.</td>
</tr>
<tr>
<td>NFSC 600</td>
<td>Research Methods in Nutritional Sciences</td>
<td>4.0</td>
<td>Inquire</td>
<td>Prerequisites: MATH 615 or similar statistics course. An examination of quantitative and qualitative research methods via the analysis of data and the design and implementation of original research and evaluation studies. Activities are designed to develop skills in research design, sampling design, instrumentation, data collection, statistics analysis, presentation and interpretation of results, and the presentation of original research via poster boards and journal manuscripts. 3.0 hours lecture, 2.0 hours activity.</td>
</tr>
<tr>
<td>NFSC 620</td>
<td>Food Science</td>
<td>2.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 320, biochemistry. New developments in food processing, techniques of food preservation, chemical additives, sanitation, and other topics to be selected for discussion using current scientific literature.</td>
</tr>
<tr>
<td>NFSC 640</td>
<td>Topics in Macronutrients</td>
<td>3.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 440, biochemistry. Review of current scientific literature in selected aspects of protein, carbohydrates, and lipids, and their use by the body.</td>
</tr>
<tr>
<td>NFSC 642</td>
<td>Topics in Vitamins and Minerals</td>
<td>3.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 440, biochemistry. Review of current scientific literature in contemporary issues of selected micronutrients.</td>
</tr>
<tr>
<td>NFSC 660</td>
<td>Nutrition Education</td>
<td>3.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 465. An integrated approach to the ways in which individuals and groups use nutrition information. Includes considerations of human development, learning theory, curriculum development, and the evaluation process.</td>
</tr>
<tr>
<td>NFSC 661</td>
<td>Topics in Developmental Nutrition</td>
<td>2.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 360, biochemistry. A review of selected contemporary issues of nutritional status in one or more groups in the life cycle; infant nutrition, child nutrition, or geriatric nutrition.</td>
</tr>
<tr>
<td>NFSC 665</td>
<td>Topics in Community Nutrition</td>
<td>2.0</td>
<td>Inquire</td>
<td>This course reinforces principles of community-based organization and evaluation. Oral presentation and critique of research-based interventions, current issues, and strategies for effective grant writing are addressed.</td>
</tr>
<tr>
<td>NFSC 667</td>
<td>International Issues in Nutrition</td>
<td>2.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 429, biochemistry. Review of international issues that influence nutritional status of individuals and populations, with emphasis on contemporary problems in less developed countries.</td>
</tr>
<tr>
<td>NFSC 670</td>
<td>Topics in Clinical Nutrition</td>
<td>2.0</td>
<td>Inquire</td>
<td>Prerequisites: NFSC 470, biochemistry. A review and application of the nutrition care process to selected contemporary issues in therapeutic nutrition. Role of dietitian as health care team member is considered and examined.</td>
</tr>
<tr>
<td>NFSC 679</td>
<td>Graduate Internship</td>
<td>1.0–6.0</td>
<td>Fa/Spr</td>
<td>This course is an internship offered for 1.0–6.0 units. You must register directly with a supervising faculty member. The internship is designed to provide semiprofessional field experience for graduate students in agencies which use application of theoretical knowledge in the discipline. May be repeated more than once for credit. You may take this course more than once for a maximum of 15.0 units. Credit/no credit grading only.</td>
</tr>
<tr>
<td>NFSC 697</td>
<td>Professional Paper</td>
<td>3.0</td>
<td>Fa/Spr</td>
<td>Prerequisites: NFSC 620, biochemistry. Culminating activity for the MS degree. A professional paper is written based on original research. You must register directly with a supervising faculty member. You may take this course more than once for a maximum of 6.0 units.</td>
</tr>
<tr>
<td>NFSC 697T</td>
<td>Master's Thesis</td>
<td>1.0–6.0</td>
<td>Fa/Spr</td>
<td>Prerequisites: NFSC 620, biochemistry. New developments in food processing, techniques of food preservation, chemical additives, sanitation, and other topics to be selected for discussion using current scientific literature.</td>
</tr>
</tbody>
</table>