**PROGRAMS**

This is the Program section of the 1996-1999 University of Minnesota College of Human Ecology Bulletin.

### Liberal Education Requirements

Effective for all freshmen with fewer than 39 credits enrolling from fall 1994 to summer session II 1996. Beginning fall 1996, the liberal education requirements apply to all students entering a baccalaureate degree program, regardless of prior credits.

A liberal education introduces you to the modes of inquiry and subject matter of the major branches of knowledge, including the factual information and theoretical or artistic constructs that form their foundations; the “ways of knowing”—the kinds of questions asked and how insight, knowledge, and data are acquired and used; the changes over time of their central ideas or expressive forms; and the interrelationships among them and with human society in general. To these ends, study by all undergraduate students on the Twin Cities campus is guided by a common framework.

#### The Diversified Core Curriculum

**Physical and Biological Sciences.** Comprehension of physical and biological principles; understanding of and ability to use the methods of scientific inquiry—the ways in which scientists investigate physical and biological phenomena; and appreciation of the importance of science and the value of a scientific perspective.

*Requirement:* A minimum of three courses totaling at least 12 credits, including one course with a laboratory or field experience in the physical sciences and one course with a laboratory or field experience in the biological sciences.

**History and Social Sciences.** Knowledge of how historians and social scientists describe and analyze human experiences and behavior; study of the interrelationships among individuals, institutions, structures, events, and ideas; understanding of the roles individuals play in their historical, cultural, social, economic, and political worlds.

*Requirement:* A minimum of three courses totaling at least 12 credits, including one course with historical perspective.

**Arts and Humanities.** Understanding of approaches to the human condition through works of art, literature, and philosophy; knowledge of how artists create and humanistic scholars think; ability to make aesthetic judgments.

*Requirement:* A minimum of three courses totaling at least 12 credits including courses in two of the following: literature, philosophical perspective, and visual or performing arts.

**Mathematical Thinking.** Acquisition of mathematical modes of thinking; ability to evaluate arguments, detect fallacious reasoning; and evaluate complex reasoning chains; appreciation of the breadth of applications of mathematics and its foundations.

*Requirement:* A minimum of one course totaling at least four credits.

#### The Designated Themes of Liberal Education

The designated themes of liberal education offer a dimension to liberal learning that complements the diversified core curriculum. Each of the themes focuses on an issue of compelling importance to the nation and the world, the understanding of which is informed by many disciplines and interdisciplinary fields of knowledge.

*Requirement:* A minimum of six courses (or five courses if one includes an approved practicum), including one course in each of the following:

- **Cultural Diversity.** Understanding of the roles gender, ethnicity, and race play in structuring the human experience in and developing the social and cultural fabric of the United States.

- **International Perspectives.** Comprehension of the ways in which you are part of a rapidly changing global environment dominated by the internationalization of most human endeavors.

- **Environment.** Knowledge of the interaction and interdependence of the biophysical systems of the natural environment and human social and cultural systems.

- **Citizenship and Public Ethics.** Reflection on and determination of a clearer sense of your present and future civic relationships and your obligations to the community.

#### Writing Skills

The ability to communicate effectively is a hallmark of a liberally educated individual and a key to a successful and satisfying life. To encourage refining of writing skills, the liberal education curriculum includes both writing courses and writing across the curriculum.

*Requirement:* Writing skills requirements are being revised. Until the new requirements are in effect, all students will complete the writing requirement specified by the college awarding their baccalaureate degree.

You may satisfy the liberal education requirements with a number of courses and credits different from those of other students because some courses serve multiple goals in the curriculum; e.g., some courses will satisfy a diversified core requirement and a designated theme requirement, and other courses will satisfy the requirements for each of two themes. Thus, you may satisfy the designated theme requirements with a smaller number of courses than is stated in the requirement. Each quarter, the *Class Schedule* will publish the requirements and list all courses that satisfy them. In addition, the *Class Schedule* will list which of these courses are offered that quarter and which are tentatively scheduled for the subsequent quarters during the academic year.

#### Minnesota Transfer Curriculum

If you complete the Minnesota Transfer Curriculum at any participating Minnesota college or university, you fulfill the University’s Twin Cities campus liberal education requirements. However, you will still need to complete a portion of the writing skills requirements. Contact your college advising office concerning these requirements. For more information on using transfer credits for the liberal education requirements, contact the Office of Admissions (612/625-2008).
Note: Transfer students who entered the University under the current Twin Cities campus liberal education requirements must fulfill those requirements.

Students who entered a degree program under the old general education requirements who transfer to CHE follow CHE’s old collegiate general education requirements (categories A-D). Consult your academic adviser for a list of courses that fulfill these requirements.

Students under the old requirements may request permission to complete the current liberal education requirements by consulting a transfer specialist in 32 McNeal Hall (612/624-1725) at the time of transfer.

Clothing Design
Department of Design, Housing, and Apparel
240 McNeal Hall
1985 Buford Avenue
St. Paul, MN 55108
612/624-9700

This program provides students with information and experiences helping them to understand design problems, production, and marketing of textile and clothing products. Students in the program gain an understanding of the product, business systems, and the consumer. Program coursework concentrates on developing professional competence in creative design.

The program emphasizes developing a high degree of creative thinking as well as technical skill. It also relates principles of clothing design to industrial production. Courses in this major include studies in basic and advanced design, textiles, and apparel production from a historical, cross-cultural, and cultural approach; and art, economics, and humanities as a foundation for understanding people and their lifestyles and needs.

Students entering this program should have clothing construction/assembly competence and a working knowledge of microcomputers and software. Students are encouraged to use the liberal education categories to explore multicultural issues and themes and to strengthen the knowledge base that will support and enhance their major coursework.

Pre-Clothing Design

Admission Requirements

Freshmen and transfer students are initially admitted as pre-clothing design majors.

Freshmen
Refer to the University of Minnesota—Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
• Completion of high school preparation requirements if post-1986 high school graduate.
• Completion of high school intermediate algebra or equivalent.
• Overall GPA of at least 2.50.

Clothing Design Requirements for Full Major Status

After being admitted to CHE, students must meet the following criteria to achieve full major status in the clothing design program.

• Demonstration of competence in basic clothing construction skills. This competence may be demonstrated by passing the DHA sewing proficiency examination, successfully completing DHA 1221, or successfully completing a clothing construction course at a technical college. For more information, consult your adviser.
• Completion of DHA 1231, 1261, 1300, 1323, 1325, 1328 with a GPA of at least 2.50.
• Positive assessment of design work through portfolio review.

Liberal Education Requirements

All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.
Communication Requirement
All CHE students must complete the following courses.

Freshmen composition
- Rhet 1101 or Comp 1011 or equivalent

Intermediate composition
- Rhet 1151/1104 or Comp 1027 or equivalent

Advanced composition
- Rhet 3562 or Comp 3xxx or equivalent

Public speaking
- Rhet 1222 or Spch 1101 or equivalent

Graduation Requirements
- Completion of all program and college requirements.
- Overall GPA of at least 2.50.
- Completion of 185 credits.

Program Requirements

Professional Core Courses
- DHA 1101—Introduction to the Designed Environment (3)
- DHA 1231—Clothing Design Studio I (4)
- DHA 1261—Clothing Design Studio II (4)
- DHA 1300—Introduction to Design (3)
- DHA 1323—Design Process: Drawing I (4)
- DHA 1325—Design Process: Two-Dimensional Design I (4)
- DHA 1328—Design Process: Color I (4)
- DHA 3117—History of Costume: Origins Through 18th Century (3)
- DHA 3211—Pattern Development I (4)
- DHA 3212—Cultural Perspectives in Dress (4)
- DHA 3215—Apparel Analysis I (4)
- DHA 3216—Textile Analysis (5)
- DHA 3217—Aesthetics of Clothing (4)
- DHA 3218—Pattern Development II (4)
- DHA 3232—Clothing Design Studio III (4)
- DHA 3262—Tailoring (4)
- DHA 3332—Fiber Structure: Weaving (4)
- DHA 5118—History of Costume: 19th and 20th Centuries (4)
- DHA 5180—Directed Study (1-4 cr, max 8 cr)
- DHA 5211—Issues and Trends in Textiles and Apparel (3)
- DHA 5216—Textile and Apparel Consumer (4)
- DHA 5218—Pattern Development III (4)
- DHA 5231—Clothing Design Studio IV (4)
- DHA 5232—Clothing Design Studio V (4)
- DHA 5234—Clothing Design for Special Needs (4)
- DHA 5254—Performance Evaluation: Fabrics and Garments (5)

Clothing design majors have an opportunity to participate in student-selected field experiences. See your adviser for more information.

Supporting Emphasis
A minimum of 18 credits of related courses selected with approval of your adviser.

Electives
Electives to complete 185 credits required for graduation with the B.S. degree.
The design communication program prepares designers accomplished in design methods, design theory, creative problem solving, and visual and verbal literacy. The program fosters flexibility that allows for adaptation to social, cultural, and technological change in graphic design.

The program’s foundation is purposefully broad-based. Students begin their study of design with courses that focus on fundamental aspects of visual studies. Introductory lecture and studio courses describe, analyze, and articulate the way people see and interpret the visual material they encounter every day. The emphasis is on communication and perception: how humans communicate, perceive, interpret, and understand visual information. Upper division courses prepare students for graphic design positions in business and industry. Graduate programs at the M.A. and Ph.D. level are individually tailored. See the Graduate School Bulletin.

Pre-Design Communication

Admission Requirements

Freshmen and transfer students are initially admitted as pre-design communication majors.

Freshmen
Refer to the University of Minnesota—Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
• Completion of high school preparation requirements if post-1986 high school graduate.
• Completion of high school intermediate algebra or equivalent.
• Overall GPA of at least 2.50.

Design Communication Requirements for Full Major Status

After being admitted to CHE, pre-design communication students must meet the following criteria to achieve full major status in the design communication program.
• Completion of DHA 1101, 1300, 1301, 1323, 1325, 1328, 1334.
• Overall GPA of at least 2.50.
• Pass portfolio review.
  Contact your academic adviser for more information.

Transfer Students

Transfer students may apply for portfolio review the same quarter they are admitted to the college if all other design communication admission requirements are met. See student services staff, 32 McNeal Hall, for more information.

Liberal Education Requirements

All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

Communication Requirement

All CHE students must complete the following courses.

Freshmen composition
Rhet 1101 or Comp 1011 or equivalent
Intermediate composition
Rhet 1151/1104 or Comp 1027 or equivalent
Advanced composition
Rhet 3562 or Comp 3xxx or equivalent
Public speaking
Rhet 1222 or Spch 1101 or equivalent

Graduation Requirements

• Completion of all program and college graduation requirements.
• Minimum grade of C in all professional courses in the major.
Program Requirements

Professional Courses in the Major

Preparatory Core (A-F only, minimum grade of C required)*
- History, one survey course
- Literature, one introductory course
- Psychology, one introductory course

* Students should consult their academic adviser for the courses that will meet both the preparatory core and liberal education requirements.

Program Core

Basic design requirements (minimum grade of C required)
- DHA 1101—Introduction to the Designed Environment (3)*
- DHA 1300—Introduction to Design (3)*
- DHA 1301—Introduction to Visual Communication and Graphic Design (4)*
- DHA 1323—Design Process: Drawing I (4)*
- DHA 1325—Design Process: Two-Dimensional Design I (4)*
- DHA 1328—Design Process: Color I (4)*
- DHA 1331—Surface Design (4)
- DHA 1334—Introduction to Computer Applications to Design (2)*

Design history courses (3 courses from the following)
- DHA 3117—History of Costume: Origins Through 18th Century (3)
- DHA 5107—History of Decorative Arts: Textiles (3)
- DHA 5109—History of Decorative Arts: Ceramics, Metals, Glass (3)
- DHA 5112—History of European Furniture and Interiors (3)
- DHA 5114—History of American Furniture and Interiors (3)
- DHA 5115—20th-Century Interiors and Furnishings (3)
- DHA 5118—History of Costume: 19th and 20th Centuries (4) and/or courses taught in Department of Art History (see adviser for suggested courses) and/or history courses taught in College of Architecture and Landscape Architecture (see adviser for suggested courses)

Professional courses (to be taken following portfolio review) (minimum grade of C required)
- DHA 3301—Production for the Graphic Designer (4)
- DHA 3323—Design Process: Drawing II (May precede or follow portfolio review)
- DHA 3325—Design Process: Two-Dimensional Design II (4)
- DHA 3327—Packaging Design (4)
- DHA 3328—Design Process: Color II (4)
- DHA 3350—Typographic Design (4)
- DHA 3351—Graphic Design I (4)
- DHA 3352—Graphic Design II (4)
- DHA 3353—Graphic Design III (4)
- DHA 3381—Portfolio and Professional Development (4)
- DHA 5105—History of Visual Communication (4)
- DHA 5130—Internship in DHA (1-4, S-N only)
- DHA 5327—Advanced Packaging and Display Systems (4)
- DHA 5350—Advanced Typography (4)
- DHA 5384—Interactive Media (4)

Minimum of 4 credits in business or marketing

* Required for portfolio review

Collateral Area

Minimum of 18 credits from an area selected with approval of your adviser (A-F only, minimum grade of C required); at least 12 credits must be 3xxx or above. Suggested areas include American studies, Anthropology, Architecture, Art education, Art history, Business, Computer science, Industrial education, Journalism and mass communication, Psychology, Sociology, Speech communication, Studio art, Theatre arts. Other collateral areas may be developed. For courses relevant to collateral areas, see adviser.

Electives

Electives to complete 185 credits required for graduation with the B.S. degree.
Family Education
(formerly Home Economics Education)

Family Education Program
325 Vocational and Technical Education Building
1954 Buford Avenue
St. Paul, MN 55108
612/624-3010

This program offers
- a specialization in the Department of Work, Community, and Family Education doctoral degrees (See Graduate School Bulletin).
- a specialization in the Department of Work, Community, and Family Education master of arts degree (See Graduate School Bulletin).
- a master of education degree with a focus on family education and human ecology.
- a master of education degree that leads to a license to teach family and consumer sciences in a secondary school.
- courses and advising to qualify students for additional Minnesota educator licenses.
- a family education minor that complements majors in CHE and the College of Liberal Arts.

Family Education/Secondary School Teacher Preparation Program

Successful completion of this program leads to a license to teach junior or senior high school in Minnesota, as well as a master of education degree. The full-time program takes about 11 months (depending on the need to fulfill prerequisites), beginning Summer Session II and ending the following spring quarter. The application deadline is April 1. To inquire about admission, call (612) 624-3010. Criteria for admission include
- a completed baccalaureate degree in an area related to family and consumer sciences.
- a minimum GPA of 2.80 in undergraduate coursework.
- completion of the Pre-Professional Skills Tests.
- completion of prerequisite coursework specified by the Family Education Program.

Course Requirements
8-12 credits in family education core courses
20 credits of clinical experience with accompanying seminars
15-20 credits in foundations of education
Students must participate in secondary school activities in late August and early September.

Family Education Minor
This minor (18-20 credits) is available to undergraduates in CHE, College of Liberal Arts, and Inter-College Program. Before beginning coursework, students design their own FE minor in consultation with an FE adviser. Examples of minors include cooperative extension service, parent education, methods of instruction, program planning, evaluation, family life, and nutrition education.

Master of Education
There are two master of education (M.Ed.) programs in family education. One leads to a license to teach secondary school family and consumer sciences courses. The other leads to professional preparation as an educator who works with individuals and families in a variety of settings. For information, see the family education section of the College of Education and Human Development Bulletin.

Minnesota Educator Licenses
Licenses for which students can qualify while studying for a degree, or by taking additional courses related to family education, include
- secondary school license for teaching family and consumer sciences in junior and senior high school.
- family education endorsement for elementary and secondary educators who hold a license and want to teach family studies as a component of their program.
- family education/parent educator license for teaching adults about parenting.
Detailed information about courses qualifying students for these licenses may be obtained from the Family Education Program, 325 Vocational and Technical Education Building, 1954 Buford Avenue, St. Paul, MN 55108 (612/624-3010).
Family Social Science

Department of Family Social Science
290 McNeal Hall
1985 Buford Avenue
St. Paul, MN 55108
612/625-1900

This multidisciplinary major prepares students for a variety of careers working with individuals, families, and policies and systems in human services. Qualified graduates of the program may continue their education through graduate study in family social science, family education, child and human development, social work, and other related disciplines. The program begins with a strong foundation of liberal education courses and a multidisciplinary series of courses in the social and behavioral sciences and progresses to the major core of upper division family social science courses. Students choose one of the following applied/advanced areas of study.

Family economics and policy area focuses on courses that review the impact of economics and public policy on families.

Family gerontology area focuses on the influences of aging in society, including government policies, health care, and housing.

Alcohol and drug studies area examines issues of alcohol and drug abuse with an option to obtain an Alcohol and Drug Counseling Education Program certificate.

Adviser/student-designed family area allows students to design a family-oriented area of study around special interests, including international issues, in consultation with their faculty adviser.

Admission Requirements

The program admits freshmen and transfer students. The major accommodates traditional students and those who are changing majors, transferring from community or other colleges, and working adults who must take some of their coursework at night.

Freshmen
Refer to the University of Minnesota–Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
• Completion of high school preparation requirements if post-1986 high school graduate.
• Completion of high school intermediate algebra or equivalent.
• Overall GPA of at least 2.50.

Liberal Education Requirements

All University students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

Communication Requirement

All CHE students must complete these courses.

Freshmen composition
  Rhet 1101 or Comp 1011 or equivalent
Intermediate composition
  Rhet 1151/1104 or Comp 1027 or equivalent
Advanced composition
  Rhet 3562 or Comp 3xxx or equivalent
Public speaking
  Rhet 1222 or Spch 1101 or equivalent

Graduation Requirements

• Completion of all program and college requirements.
• A minimum 2.00 cumulative GPA with no grades lower than C (2.00) in any FSoS-designated course.
• A total of 185 credits.

Program Requirements

Preparatory Requirements in Social and Behavioral Sciences
Courses taken to meet these requirements may also fulfill liberal education requirements. Consult your academic adviser.

One course in each of the following areas:
  Sociology
  Psychology
  Economics
  Child psychology or human development
  Statistics

Two courses from the following areas/courses:
  Political science
  Cultural anthropology
  FSoS 1001—Introduction to Family Relationships (4)
  FSoS 1025—Introduction to Parenthood (4)
  SW 1001—Intro to Social Welfare and Community Services (5)

Family Social Science Major Core Studies (68 credits)
The required core provides basic substantive knowledge about diverse family systems; intervention skills at the individual, group, community, and policy levels; and research skills. The 3xxx core courses should be completed before the 5xxx core and applied/advanced courses.

Entry-Level Core Requirements (19 credits)
  FSoS 3231—Planning for Education and Career (2)
  FSoS 3260—Family Resource Management (4)
  FSoS 3600—Family Issues Across the Life Span (5)
SW 3201—Interventions with Individuals and Groups (4)
SW 3202—Interventions in Community and Social Policy (4)

Advanced Core Requirements (49 credits)

Required
FSoS 5200—Family Systems (5)
FSoS 5205—Introduction to Family Research Methods (4)
FSoS 5500—Racial and Ethnic Diversity in Families (4)

Select at least one course from each of the following areas to total a minimum of 36 credits:

Family Structure/Process
FSoS 5001—Human Sexual Behavior (5)
FSoS 5025—Parenting (4)
FSoS 5202—Family Psychology (4)
FSoS 5260—Dynamics of Family Decision Making (4)
FSoS 5240—Special Topics (2-6) (if topic appropriate to area)

Family Economics/Policy
FSoS 5218—Family Financial Management (4)
FSoS 5220—Family Economics (4)
FSoS 5241—Legal and Economic Controversies in Family Life (4)
FSoS 5255—Approaches to Family Policy (4)
FSoS 5256—Family Policy: An International Perspective (4)
FSoS 5240—Special Topics (2-6) (if topic appropriate to area)

Family/Culture
FSoS 5210—Family in World Perspective (4)
FSoS 5251—Aging Families (4)
FSoS 5252—Aging, Family, and Society (4)
FSoS 5253—Humanities, Aging, and Family Living (4)
FSoS 5240—Special Topics (2-6) (if topic appropriate to area)

Applied/Advanced Areas of Study

Select one of the following five areas. Each course may be used only once to satisfy program requirements.

Family Economics and Policy Area

Required Courses
FSoS 5218—Family Financial Management (4)
FSoS 5220—Family Economics (4)
FSoS 5260—Undergraduate Research Internship (1-5)
or FSoS 5249—Fieldwork–Directed Community Work Experience (5)
FSoS 5255—Approaches to Family Policy (4)
FSoS 5260—Dynamics of Family Decision Making (4)

Select two:
ApEc 5580—Human Capital and Household Economics (3)
FSoS 5210—Family in World Perspective (4)
FSoS 5241—Legal and Economic Controversies in Family Life (4)
FSoS 5256—Family Policy: An International Perspective (4)

Family Gerontology Area

Required Courses
DHA 5481—Designed Environments for Aging (4)
FSoS 5206—Undergraduate Research Internship (1-5)
or FSoS 5249—Fieldwork–Directed Community Work Experience (5)
FSoS 5251—Aging Families (4)
SW 5024—Multidisciplinary Perspectives on Aging (4)

Select three:
DHA 5467—Housing and the Social Environment (4)
FSoS 5252—Aging, Family, and Society (4)
FSoS 5253—Humanities, Aging, and Family Living (4)
FSoS 5256—Approaches to Family Policy (4)
WoSt 5201—The Older Woman (4)

Alcohol and Drug Studies Area

Students may elect to complete the 52-credit Alcohol and Drug Counseling Education Program certificate (ADCEP). Consult your adviser and the ADCEP director. All courses in ADCEP are offered in the evening through University College.

Required Courses
FSoS 3026—Assessment of Alcohol and Drug Use Problems (4)
FSoS 3027—Current Issues and Pharmacology of Alcohol and Drug Abuse (4)
FSoS 3028—Treatment of Alcohol and Drug Abuse Problems (4)
FSoS 3032—Chemical Abuse and Families: An Overview (4)
FSoS 5206—Undergraduate Research Internship (1-5)
or FSoS 5249—Fieldwork–Directed Community Work Experience (5)

Select two:
FSoS 3029—Counseling Skills Practicum I (4)
FSoS 3030—Counseling Skills Practicum II (4)
FSoS 3037—Group Therapy: Theory and Practice (3)

Adviser/Student-Designed Family Area (29 credits)

Students design a family-oriented application area in consultation with their adviser. The area may focus on a population such as children, adolescents, women, gays and lesbians, or refugees; an issue such as health, sexuality, human rights, the military, war, or violence; complementary discipline such as social psychology, public health, education, sociology, or social work; or a skills area such as family research, advocacy, or policy development.

Students considering graduate school are strongly encouraged to design a research-oriented skills application area with higher level mathematics, statistics, and research experiences in consultation with their adviser. It is also possible to select courses from two or more of the other four family social science applied areas to combine, for example, family gerontology and economics, family addictions and public policy. A written proposal for the adviser/student-designed family area must be preapproved by the academic adviser.

Required Courses
FSoS 5206—Undergraduate Research Internship (1-5)
or FSoS 5249—Fieldwork–Directed Community Work Experience (5)

A minimum of three approved family social science or other adviser-approved courses organized around the population, issue, complementary discipline, or skills area. Additional courses from appropriate disciplines to satisfy credit minimum.

International Studies Area (31-46 credits)

Students may elect to complete this minor as an applied/advanced area of study. Students must be formally admitted to the minor, which enables them to integrate an international internship or research project on families into their major program. Careful planning permits students to combine core courses from the major with the minor requirements.

Requirements
• Intercultural communication: pre- and postdeparture.
• Predeparture course linking the human-ecological framework with the student’s international interests.
• Minimum of 10 weeks (1 quarter) of study, internship, or research in chosen country.
• 23 credits of foreign language study.
• 15 3xxx or 5xxx credits focusing on chosen country/region or issue of interest in a specific country/region. For example, the following courses are not required for the minor but may be selected to fulfill the minor and major core requirements simultaneously:
FSoS 5206—Undergraduate Research Internship (5)
or FSoS 5249—Fieldwork–Directed Community Work Experience (5)
FSoS 5210—Family in World Perspective (4)
FSoS 5252—Aging, Family, and Society (4)
FSoS 5255—Family Policy: An International Perspective (4)
Food Science

Department of Food Science and Nutrition
225 Food Science and Nutrition
1334 Eckles Avenue
St. Paul, MN 55108
612/624-1290

Food science applies scientific principles to the manufacture, distribution, marketing, and consumer aspects of food. Food scientists apply basic principles and techniques of many disciplines, including chemistry, physics, economics, microbiology, nutrition, and management, to food processing and preservation and new product development. Food scientists are concerned with the theoretical and practical aspects of the food chain from the production of raw materials to the use of food products by consumers.

The program is open to students registered in either the College of Agricultural, Food, and Environmental Sciences or CHE. Faculty advisers are from the Department of Food Science and Nutrition, which is jointly administered by the two colleges.

Many graduates of the program seek employment after earning the bachelor of science degree, while others continue on to graduate study. Career areas include production management, product and process research and development, public health and regulatory agency service, education, marketing, technical sales and promotion, and quality control supervision.

Admission Requirements

Freshmen
Refer to the University of Minnesota—Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
- Completion of high school preparation requirements if post-1986 high school graduate.
- Completion of high school intermediate algebra or equivalent.
- Overall GPA of at least 2.50.

Liberal Education Requirements
All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

Communication Requirement
For food science majors, this requirement is included in the required supporting courses in communication, math, and sciences.

Program Requirements

Required Supporting Courses in Communication, Math, and Sciences (71-77 credits)
ApEc 1101—Principles of Microeconomics (4)
Biol 1009—General Biology (5)
Chem 1051-1052—Chemical Principles I-II (4,4)
Chem 3301, 3305—Organic Chemistry I and Laboratory (4,2)
Chem 3302, 3306—Organic Chemistry II and Laboratory (4,2)
Math 1251-1252—One-Variable Differential and Integral Calculus I-II (4,4)
or Math 1142—Short Calculus (5)
McB 5105—Biology of Microorganisms (5)
or VPB 3103—General Microbiology (5)
Phys 1041-1042—Introductory Physics (5,5)
Rhet 1101—Writing to Inform and Persuade (4)
Rhet 1104—Library Research Methods (1)
Rhet 1222—Public Speaking (4)
Rhet 3562—Writing in Your Profession (4)
Stat 3011-3012—Statistical Analysis (4,4)
or Stat 5021—Statistical Analysis (5)

Required Professional Courses (63 credits)
FScN 1102—Food: Safety, Risks, and Technology (4)
FScN 1612—Principles of Nutrition (4)
FScN 3112—Introduction to Food Science (4)
FScN 3112—Food Analysis (4)
FScN 3135—Food Processing I (4)
FScN 3136—Food Processing II (4)
FScN 5100—General Seminar (1)
FScN 5110—Food Chemistry (4)
FScN 5120—Food Microbiology (5)
FScN 5122—Control Systems in Food Microbiology (2)
FScN 5123—Food Fermentation and Biotechnology (3)
FScN 5135—Food Engineering Unit Operations (5)
FScN 5312—Instrumental Analysis of Foods (3)

In addition to these required courses, a minimum of 16 credits must be chosen from the following courses. A maximum of 4 credits in FScN 5000/5111 may be used to meet the 16-credit requirement.
FScN 3400—Food Marketing Communication (3)
FScN 3472—Food Selection Principles (4)
FScN 5000—Professional Experience Program (4)
FScN 5111—Independent Study in Food Science and Nutrition (1-5)
FScN 5314—Physicochemistry of Foods (4)
FScN 5360—Sensory Evaluation of Food Quality (4)
FScN 5380—Food Packaging (3)
FScN 5390—Introduction to Food Law (4)
FScN 5474—Food Marketing Economics (4)
FScN 5512—Meat Technology (4)
FScN 5522—Technology of Fluid and Concentrated Milk Products (4)
FScN 5523—Technology of Fermented Dairy Products (4)
FScN 5524—Sensory Evaluation of Dairy Products (1)
FScN 5550—Grains: Introduction to Cereal Chemistry and Technology (4)
FScN 5555—Freezing and Dehydration of Foods (5)
FScN 5560—Introduction to New Product Development (3)
FScN 5562—Flavor Technology (4)
FScN 5620—Nutrition and Metabolism (5)

Optional Area of Emphasis

An area of emphasis that meets the student’s educational and career goals may be designed in consultation with his/her adviser. The area of emphasis plan must include 20 credits and be submitted to the undergraduate studies committee for approval. Two special areas of emphasis, biochemistry and engineering, are available. In addition, some suggested areas are chemistry, microbiology, statistics, management, economics, nutrition, international affairs, and communications.

Biochemistry Emphasis

Students must substitute Phys 1251, 1252, and 1253 (4, 4, 4) for Phys 1041, 1042
Chem 5501—Introduction to Thermodynamics and Kinetics (3)
Chem 5502—Introduction to Quantum Theory and Spectroscopy (3)

Math 1261—Calculus III (4)
Math 3251—Multivariable Differential Calculus (4)
Math 3252—Multivariable Integral Calculus (4)
Select 8 credits or more from:
- BioC 5525—Physical Biochemistry: Solution Structure and Interactions of Biological Macromolecules (4)
- BioC 5528—Physical Biochemistry: Enzyme Kinetics (4)
- BioC 5331—Structure, Catalysis, and Metabolism in Biological Systems (4)
- BioC 5333—Molecular Mechanism of Gene Action (4)

Engineering Emphasis

Students must substitute Phys 1251, 1252, and 1253 (4, 4, 4) for Phys 1041, 1042
ChEn 5001—Computational Methods in Chemical Engineering and Material Science (4)
ChEn 5101—Principles of Chemical Engineering I (4)
ChEn 5102—Principles of Chemical Engineering II (4)
Math 1261—Calculus III (4)
Math 3251—Multivariable Differential Calculus (4)
Math 3252—Multivariable Integral Calculus (4)
Math 3261—Differential Equations With Linear Algebra (4)

Electives

Electives to complete 180-186 credits required for graduation with the B.S. degree, depending on year and term the student entered the University of Minnesota–Twin Cities. See your adviser for more information.
Housing

Department of Design, Housing, and Apparel
240 McNeal Hall
1985 Buford Avenue
St. Paul, MN 55108
612/624-9700

Housing is an interdisciplinary program of integrated study that prepares students for a wide variety of housing-related positions. The program uses the social and behavioral sciences, design, and technology to provide background in the housing-related interactions within households, between households and society, and with the natural and built environments. The background provided derives from two orientations, the individual or household level and the societal level, focusing on the interplay between them.

After acquiring a general background of coursework in housing, students may specialize in one of four broad areas: community development and policy, housing technology, management and finance, or special populations. In addition, a student may propose an area of concentration tailored to individual background and interest after consulting with an adviser and receiving program committee approval.

Students in the housing program complete an internship that typically involves one quarter of work experience (a minimum of 400 hours) in a situation related to the student’s area of specialization. Graduates of the program work in a variety of positions that grow out of their area of concentration and internship experience. The program provides background for graduate studies for additional professional preparation for college teaching, research, planning, and administration. Note that the program requires a basic knowledge of drafting that can be acquired in a variety of ways including high school, vocational, or technical coursework.

Community Development and Policy—Students take additional coursework in such areas as public affairs, planning, geography, and political science. The concentration prepares students for work with agencies and organizations involved in policy making, planning, and development related to housing. These include housing and redevelopment authorities, city planning departments, and non-profit organizations.

Housing Technology—Students take additional coursework in design, technology, and environmental studies. This background prepares students for work in construction and development firms; accessibility, rehabilitation, energy, and housing inspection programs; and historic preservation.

Management and Finance—Students take additional coursework in such areas as economics and business. This specialization prepares students for work in public and private housing management, state finance agencies, commercial banks, and mortgage and title companies.

Special Populations—Students take courses in sociology, social work, gerontology, women’s studies, Afro-American studies, American Indian studies, and Latin American studies. This specialization prepares students to work in housing-related programs involving human relations; advocacy; affirmative action; and housing for the elderly, disabled, and low-income families of various types.

Admission Requirements

Freshmen
Refer to the University of Minnesota–Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
• Completion of high school preparation requirements if post-1986 high school graduate.
• Completion of high school intermediate algebra or equivalent.
• Overall GPA of at least 2.50.

Liberal Education Requirements

All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.
Communication Requirement

All CHE students must complete the following courses.

Freshmen composition
  Rhet 1101 or Comp 1011 or equivalent

Intermediate composition
  Rhet 1151/1104 or Comp 1027 or equivalent

Advanced composition
  Rhet 3562 or Comp 3xxx or equivalent

Public speaking
  Rhet 1222 or Spch 1101 or equivalent

Program Requirements

Professional Courses in the Major (A-F only)

Preparatory Core*

ApEc 1101-1102—Principles of Microeconomics, Macroeconomics (4,4)
  or  Econ 1101-1102—Principles of Microeconomics, Macroeconomics (4,4)

Phys 1001—The Physical World (4)

Psy 1001—Introduction to Psychology (5)

Soc 1001—Introduction to Sociology (4)

* Preparatory courses may meet liberal education requirements. Consult your adviser.

Program Core (Minimum grade of C required)

DHA 1101—Introduction to the Designed Environment (3)

DHA 1400—Introduction to Housing (4)

DHA 1401—Residential Technology (4)

DHA 1621—Intermediate Drafting (4) or drafting proficiency

DHA 3463—Housing and Community (4)

DHA 3470—Professional Seminar in Housing (1)

DHA 3632—Interior Building Technology (4)
  or  ForP 5412—A Systems Approach to Residential Construction (3)

DHA 5461—Housing Management (5)

DHA 5463—Housing Policy (3)

DHA 5467—Housing and the Social Environment (4)

FSoS 3260—Family Resource Management (4)

FSoS 5200—Family Systems (52)

One of the following finance courses:
  ApEc 3001—Applied Microeconomics: Consumers and Markets (4)
  or  Econ 3101—Microeconomic Theory (4)

One of the following family courses:
  DHA 5482—The Family and Energy Issues (3)
  or  FSoS 5202—Family Psychology (4)

One of the following policy courses:
  Econ 5623—Housing Markets and Public Policy: United States (4)

One of the following statistics options:
  EPsy 3260—Basic and Applied Statistics (4)
  or  Stat 3011-3012—Statistical Analysis (4,4)

One of the following computer courses:
  CSci 1001—Introduction to Computers for Non-Computer Science Majors (4)

Internship (S-N only)

DHA 5130—Internship in DHA (3 cr) (after completion of one-half of professional sequence and DHA 3470)

Area of Concentration

A minimum of 30 credits in one of the following areas:

Community development and policy

Housing technology

Management and finance

Special populations

Students who wish to develop skills in educational programming are encouraged to supplement their program with the family education minor, offered by the Family Education Program, listed on page 29 in this bulletin.

Suggested Courses for Area of Concentration

This is not an inclusive list. Check the current Class Schedule and meet with your adviser to determine if other courses may be appropriate to fulfill the minimum credit requirement of 30 credits in one area of concentration. Any housing course not required above may be used in any concentration. Any course not selected to fulfill a professional requirement may be appropriate for use in an area of concentration. Concentration courses must be primarily upper division courses. Courses must be taken A-F.

Community Development and Policy

ApEc 5600—Land Economics (3)

ApEc 5620—Regional Economic Analysis (3)

ApEc 5630—Regional Development Systems (3)

ApEc 5640—Financing State and Local Governments (4)
Anth 5153—Urban Anthropology (4)
Arch 5645—Real Estate Development (4)
Arch 5711—Design Principles of the Urban Landscape (4)
CE 5703—Project Management (4)
DHA 5483—Housing and Discrimination
DHA 5485—Homelessness (5)
Econ 3801—Elements of Public Finance (4)
Econ 5301—Economic Development (4)
Econ 5621—Urban Economics (4)
Econ 5623—Housing Markets and Public Policy (4)
Geog 3361—Land Use and Federal Government (4)
Geog 3371—Introduction to Urban Geography (4)
Geog 3373—Changing Form of the City (4)
Geog 5371—North American Cities (4)
Geog 5372—Metropolitan Analysis I: Population and Housing (4) (prereq Geog 5371)
Geog 5373—Metropolitan Analysis II: Urban Economic Geography (4)
Geog 5375—American Metropolitan Evolution (4)
Geog 5393—Look of the Land (4)
PA 5200—Introduction to Planning (3)
PA 5501—Economic Development I (3)
PA 5601—Land Use (4) (also Geog 5601)
PA 5622—Managing Urban Growth and Change (4)
Pol 1001—American Government and Politics (5)
Pol 3331—Minnesota Government and Politics (4)
Pol 5327—Local Government and Politics (4)
Rhet 5573—Grant Proposal (3)
Soc 3601—Urban Community (4)
UrbS 3104—Introduction to Urban Studies (4)
UrbS 3301—American Cities: Settings for Cultural Pluralism (4)

**Housing Technology**

All students in this area of concentration must take the following courses as part of the 30 credits required:
DHA 1300—Introduction to Design (3)
DHA 1323—Design Process: Drawing I (4)
DHA 1328—Design Process: Color (4)
DHA 1641—Interior Design Studio I (4)

Select from the following to complete 30 credits (these must be primarily upper division courses):
Anth 5117—Anthropology of Resource Management (4)
Arch 3411—History of Architecture to 1750 (4)
Arch 3412—History of Architecture Since 1750 (4)
Arch 5411—Historic Preservation (4)
Arch 5413—Historic Building Research and Documentation (4)
Arch 5431—Eighteenth-Century Architecture and the Enlightenment (4)
Arch 5432—Modern Architecture (4)
Arch 5458—Architecture and Culture (3)
Arch 5511—Construction Materials in Architecture (4)
Arch 5512—Historic Building Conservation (4)
Arch 5521—Building Methods in Architecture (4)
Arch 5711—Design Principles of the Urban Landscape (4)
Arch 5724—The Meanings of Place (4)
ArtH 5546—American Architecture From 1860-1914 (5)
CE 5703—Project Management (4)
DHA 1642—Interior Design Studio II (4)
DHA 3631—Interior Design Resources and Materials (3)
DHA 3633—Lighting for Environmental Spaces (3)
DHA 5112—History of European Furniture and Interiors (3)
DHA 5114—History of American Furniture and Interiors (3)
DHA 5115—Twentieth Century Interiors and Furnishings (3)

A housing student inspects a structure for code violations as part of her senior internship with the City of Brooklyn Park, Minn.
DHA 5481—Designed Environments for Aging (4)
DHA 5482—The Family and Energy Issues (3)
Geog 5371—North American Cities (4)
Geog 5372—Metropolitan Analysis I: Population and Housing (4)
Geog 5373—Metropolitan Analysis II: Urban Economics Geography (4)
Ind 3010—Construction (3)
PA 5711—Energy Policy I (4)
PA 5712—Energy Policy II (4)
PA 5721—Environmental Policy (3)
Pol 1001—American Government and Politics (5)
Pol 5327—Local Government and Politics (4)
Rhet 5573—Grant Proposal (3)

**Housing Management and Finance**
Acct 1050—Introduction to Financial Reporting (5)
ApEc 3001—Applied Microeconomics: Consumers and Markets (4)
Arch 5645—Real Estate Development (4)
BFin 3000—Finance Fundamentals (4)
BFin 3500—Advanced Corporate Finance (4)
BLaw 3058—Introduction to Law, the Law of Contracts and Sales Contracts (4)
DHA 5481—Designed Environments for Aging (4)
DHA 5482—The Family and Energy Issues (3)
DHA 5483—Housing Discrimination (4)
DHA 5485—Homelessness (5)
Econ 3101—Microeconomics Theory (4)
Econ 3701—Money and Banking (4)
Econ 3801—Elements of Public Finance (4)
Econ 5623—Housing Markets and Public Policy (4)
Geog 5371—North American Cities (4)
Geog 5372—Metropolitan Analysis I: Population and Housing (4)
Geog 5373—Metropolitan Analysis II: Urban Economics Geography (4)
Mgmt 3001—Fundamentals of Management (4)
Mgmt 3002—Psychology in Management (4)
Mktg 3000—Principles of Marketing (4)
Mktg 3040—Buyer Behavior (4)
PA 5601—Land Use (4) (also Geog 5601)
PA 5691—Topics in Land Use and Human Settlements (3)
Rhet 5258—Interviewing: Dynamics of Face-to-Face Communication (4)
Rhet 5573—Grant Proposal (3)

**Special Populations**
An area of concentration in special populations may be fulfilled in two ways. Option 1 is completed by meeting the requirements of an appropriate minor along with additional credits in supporting courses. Option 2 is met through a general concentration that focuses on a number of special populations or on a special population for which there is no specific undergraduate minor offered at the University.

Under Option 1 a concentration can be done in such minors as African studies, Afro-American studies, Chicano studies, East Asian studies, international studies, Latin American studies, Russian and East European studies, Scandinavian studies, South and Southwest Asian studies, West European studies, and women’s studies. Contact the department offering the minor for admission procedures and credit requirements.

If you choose Option 1 and the minor you select requires fewer than 30 credits, you must complete additional supporting coursework to total a minimum of 30 credits. Supporting coursework could include social work, communication, anthropology, economics, education, geography, language, mathematics, political science, sociology, statistics, or others.

Under Option 2, a concentration can be based on 20 credits of coursework in courses focused on a specific special population for which there is no minor offered with ten additional credits in supporting work; or 20 credits of course work focused on two more different special populations plus the additional ten credits in supporting work. These special populations include the elderly, low-income households, disabled or handicapped individuals, minority families, American Indians, or single-parent families.

**Courses for Concentration in Special Populations**

**Low-Income, Minority, and Single-Parent Families**
DHA 5483—Housing Discrimination (4)
DHA 5485—Homelessness (5)
Econ 3103—Welfare Economics (4)
Econ 5621—Urban Economics (4)
FSoS 5028—Treatment of Alcohol and Drug Use Problems (4)
FSoS 5500—Racial and Ethnic Diversity in Families (4)
PA 5401—Social Policy (4)
PA 5432—Poverty and Public Policy (4)
Pol 1001—American Government and Politics (5)
PubH 3003—Fundamentals of Alcohol and Drug Abuse (2)
PubH 5616—Rights of Children and Youth: Abuse and Neglect (4)
Rhet 5258—Interviewing: Dynamics of Face-to-Face Communication (4)

**Rhet 5573—Grant Proposal (3)**
**Soc 3405—Inequality: Introduction to Stratification (4)**
**Soc 3601—Urban Community (4)**
**Soc 3954—Sociological Perspectives on Race, Class, and Gender (4)**
**Soc 5405—Social Stratification and Mobility (4)**
**SW 1001—Introduction to Social Welfare and Community Services (5)**
**SW 3201—Interventions with Individuals and Groups (4)**
**SW 3202—Interventions in Community and Social Policy (4)**
**SW 5024—Multidisciplinary Perspectives on Aging (4)**
**SW 5111—Contemporary Policy and Programs in Social Welfare (4)**

**Aging**
DHA 5481—Designed Environments for Aging (4)
DHA 5483—Housing Discrimination (4)
DHA 5485—Homelessness (5)
FSoS 5251—Aging Families (4)
FSoS 5252—Aging, Family and Society (4)
FSoS 5253—Humanities, Aging and Family Living (4)
Kin 5385—Exercise for Special Populations (3)
Phar 5007—Biological Aging (2)
Psy 5138—Psychology of Aging (4)
PubH 5736—The Elderly: A High-Risk Population (3)
PubH 5932—Nutrition: Adults and Elderly (3)
Rec 5240—Recreation and Aging (4)
Rhet 5258—Interviewing: Dynamics of Face-to-Face Communication (4)

**Rhet 5573—Grant Proposal (3)**
**Soc 3937—Social Gerontology: Elders in American Society (4)**
**Soc 5938—Aging and the Life Course (4)**
**Soc 5956—Sociology of Death (4)**
**SW 5024—Multidisciplinary Perspectives on Aging (4)**
**WoSt 5201—The Older Woman: A Feminist Perspective (4)**
For other courses, see **Courses on Aging**, available from your academic adviser.

**Electives**
Electives to complete 185 credits required for graduation with the B.S. degree.

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**Interior Design**

*Department of Design, Housing, and Apparel*

240 McNeal Hall
1985 Buford Avenue
St. Paul, MN 55108
612/624-9700

This program develops a student’s competence in identifying, researching, and creatively solving problems of the immediate physical environment by acquiring (1) an understanding of the relationship between the individual and the environment, (2) a sense of the designer’s responsibility to society, (3) a foundation in basic design, (4) an understanding of functional and aesthetic needs, (5) an understanding of historical styles and contemporary theories, (6) technical knowledge and communication skills, and (7) an awareness of business and professional ethics. The program is accredited by the Foundation for Interior Design Education Research (FIDER).

Upon graduation, students may work in residential or nonresidential design. Potential employers include interior design firms, architectural firms, health care institutions, or corporations.

If students temporarily drop out of the program for three or more consecutive quarters (excluding summer sessions), they must follow the current program at the time they reenroll.

**Pre-Interior Design Admission Requirements**

Freshmen and transfer students are initially admitted as pre-interior design majors. A basic knowledge of drafting is required before enrolling in DHA 1621—Intermediate Drafting. DHA 0620—Introduction to Drafting is an independent study course that teaches these skills. For more information, consult your academic adviser.

Freshmen
Refer to the University of Minnesota—Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
- Completion of high school preparation requirements if post-1986 high school graduate.
- Completion of high school intermediate algebra or equivalent.
- Overall GPA of at least 2.50.

**Interior Design Requirements for Full Major Status**

A limited number of pre-interior design students who have met the specified requirements are admitted to the interior design program.

After being admitted to CHE, pre-interior design students must meet the following criteria to achieve full major status in the interior design program:

- Completion of 90 credits, including all required 1xxx courses
- Overall GPA of at least 2.50
- Completion of DHA 1300, 1323, 1328, 1621, 1641, 1642
- Positive assessment of design work through portfolio review
Contact your academic adviser for more information.

**Liberal Education Requirements**

All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

**Communication Requirement**

All CHE students must complete the following courses.

- Freshmen composition
  - Rhet 1101 or Comp 1011 or equivalent
- Intermediate composition
  - Rhet 1151/1104 or Comp 1027 or equivalent
- Advanced composition
  - Rhet 3562 or Comp 3xxx or equivalent
- Public speaking
  - Rhet 1222 or Spch 1101 or equivalent

**Graduation Requirements**

- Completion of all program and college requirements.
- 400-hour internship.
- Minimum grade of C in all interior design studio courses.
Program Requirements

All courses listed in this curriculum must be taken A-F. This also applies to course equivalents for listed courses.

Professional Requirements in the Major

Preparatory Courses*

Arch 3411—History of Architecture to 1750 (4)
Arch 3412—History of Architecture Since 1750 (4)
or equivalent courses
Economics, two courses (Note: Mktg 3000 requires Econ 1101 and 1102 or equivalents as prerequisites)
History, one course in European or world history
Physics, one course
Psychology, one introductory course

* Preparatory courses may meet liberal education requirements. Consult your adviser.

Professional Courses

DHA 1101—Introduction to the Designed Environment (3)
DHA 1300—Introduction to Design (3)
DHA 1323—Design Process: Drawing I (4)
DHA 1328—Design Process: Color I (4)
DHA 1401—Residential Technology (4)
DHA 1621—Intermediate Drafting (4)
DHA 1641—Interior Design Studio I (4)
DHA 1642—Interior Design Studio II (4)
DHA 3216—Textile Analysis (5)
DHA 3611—Interior Design Professional Practice (3)
DHA 3622—Interior Design Presentation and Detailing (4)
DHA 3623—Computer-Aided Design, Drafting System I (4)
DHA 3624—Computer-Aided Design, Drafting System II (4)
DHA 3631—Interior Design Resources and Materials (3)
DHA 3632—Interior Building Technology (4)
DHA 3633—Lighting Design for Environmental Spaces (3)
DHA 3643—Interior Design Studio III (4)
DHA 5107—History of Decorative Arts: Textiles (3)
or DHA 5109—History of Decorative Arts: Ceramics, Metal, and Glass (3)
DHA 5112—History of European Furniture and Interiors (3)
DHA 5114—History of American Furniture and Interiors (3)
DHA 5115—20th Century Interiors and Furnishings (3)
DHA 5612—Interior Design Research (2)
DHA 5645—Interior Design Studio V (4)
DHA 5646—Interior Design Studio VI (4)
DHA 5647—Interior Design Thesis (6)

One three-dimensional design course

Select one of the following:

DHA 5481—Designed Environments for Aging (4)
DHA 5482—Family and Energy Issues (3)
DHA 5634—Interior Design Codes and Environmental Issues (3)

See adviser for other course options.

Select two from the following:

Acct 1050—Introduction to Financial Reporting (5)
or ApEc 1250—Principles of Accounting (5)
Mktg 3000—Principles of Marketing (4)
Mgmt 3001—Fundamentals of Management (4)

Electives

Electives (may be taken S-N) to complete 185 credits required for graduation with the B.S. degree.

International Studies Minor

This minor allows students to integrate a quarter of study abroad with their chosen major field in CHE. The study abroad experience is complemented by coursework pertaining to the language and culture of the chosen country/region giving an international focus to the student’s major field of study. Students planning to have an international studies minor must receive prior program approval.

Requirements

• Two predeparture courses, including one on international communication and one linking the human ecological framework with the student’s international interests.
• One intercultural communication course upon return.
• Minimum of 10 weeks (one quarter) of international study, internship, or research.
• 23 credits of the appropriate second language.
• 15 3xxx or 5xxx credits focusing on the chosen country/region.

Careful planning with the help of your academic adviser is necessary. Several courses must be taken before you leave for your study abroad experience while others must be completed after you return.

Application materials and a complete list of required courses are available in 32 McNeal Hall. For more information, contact the CHE international adviser, 32 McNeal Hall (612/624-1717).
Nutrition

Department of Food Science and Nutrition
225 Food Science and Nutrition
1334 Eckles Avenue
St. Paul, MN 55108
612/624-1290

Nutrition explores how nutrients and the foods from which they are derived aid the body in health, growth, and development. With the major national and international concern for how nutrition affects health and disease, there are many career opportunities for persons with a bachelor of science degree in nutrition.

The nutrition major offers excellent preparation in the basic sciences and liberal education, a background in food science, and a focus on human needs related to nutrition. Each nutrition student should identify several areas of interest and develop a strong, varied portfolio of competencies and experience. At least one internship or work experience in nutrition is strongly recommended along with elective courses and extracurricular activities that develop communication and leadership skills. Graduates of this program take positions as nutritionists, registered dietitians, and specialists in food companies, departments of health, and community programs.

Nutrition and dietetics is for students planning to become registered dietitians by meeting American Dietetic Association requirements. These requirements include completion of an approved baccalaureate program, approved or accredited professional experience, and a national registration examination. Students may complete the degree program and apply for a postbaccalaureate dietetic internship, a highly competitive process for a limited number of positions. An alternative is to apply, before the junior year, to the University of Minnesota’s Coordinated Program in Dietetics and to complete both the academic and professional experience requirements in a two-year program. Registered dietitians work in a wide variety of health care, community, educational, and corporate positions relating to food and health. Students expecting to apply to the Coordinated Program in Dietetics, an internship, or graduate school should maintain a GPA of at least 2.80 (a cumulative GPA of 3.00 or above is recommended).

Nutrition graduates choosing not to be registered dietitians may develop a wide variety of career opportunities based on their preparation in the sciences, liberal education, and nutrition.

The nutrition science option is for students planning to do graduate work in nutrition, related sciences, or professional programs such as medicine or dentistry. Students should be aware of the entrance requirements for the graduate or professional program of their choice and maintain a cumulative GPA of 3.00 or higher.

Admission Requirements

Freshmen

Refer to the University of Minnesota—Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students

- Completion of high school preparation requirements if post-1986 high school graduate.
- High school intermediate algebra or equivalent.
- Overall GPA of at least 2.50.

Liberal Education Requirements

All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

Communication Requirement

All CHE students must complete the following courses.

Freshmen composition

Rhet 1101 or Comp 1011 or equivalent

Intermediate composition

Rhet 1151/1104 or Comp 1027 or equivalent

Advanced composition

Rhet 3562 or Comp 3xxx or equivalent

Public speaking

Rhet 1222 or Spch 1101 or equivalent
Program Requirements

Computer Competency
As a nutrition student you will use computer applications in your coursework and will be expected to have basic computer competency in word processing, spreadsheets, database management, and telecommunications. Computer competency will be assessed in the advising process and students lacking the needed skills may seek advice on courses required to learn those skills.

Professional Courses in the Major

Required Supporting Courses in Math and Sciences
(53-57 credits)
BioC 3021—Biochemistry (4)
Biol 1009—General Biology (5)
CBN 3001—Elementary Anatomy (4 or 5)
Chem 1051-1052—Chemical Principles I-II (4,4)
Chem 3301, 3305—Elementary Organic Chemistry I and Lab (4,2)
Chem 3302, 3306—Elementary Organic Chemistry II and Lab (4,2)
Math 1031—College Algebra and Probability (4)
LaMP 5172—Pathology for Allied Health Students (4)
or LaMP 5177—Pathology for Allied Health Students: General and System Pathology (4)
Phsl 3051—Human Physiology (5)
or Phsl 1001—Human Physiology: Introductory Survey for Allied Health Sciences (4)
VPB 3103—General Microbiology (5)
or FScN 1020—Introductory Microbiology (4)
or MicB 5105—Biology of Microorganisms (5)

4-5 credits in statistics chosen from the following or in consultation with your adviser:
EPsy 5260—Introductory Statistical Methods (4)
PubH 5404—Introduction to Biostatistics and Statistical Decision (4)
PubH 5450—Biostatistics (4)
Soc 3801—Sociological Methods I: Descriptive Statistics (5)
Stat 1001—Introduction to Ideas of Statistics (4)
Stat 3011—Statistical Analyses (4)
Stat 3091—Introduction to Probability and Statistics (4)
Stat 5021—Statistical Analysis (5)

Required Professional Courses
(59-62 credits)
FScN 1612—Principles of Nutrition (4)
FScN 3102—Introduction to Food Science (4)
FScN 3112—Food Analysis (4)
FScN 3472—Food Selection Principles (4)
FScN 3610—Community Nutrition (3)
FScN 3612—Life Cycle Nutrition (4)
FScN 3730—Quantity Food Production Management (Lab) (3)
FScN 3732—Lecture in Quantity Food Production Management (2)

A nutrition major calculates nutrient content of fruits and vegetables in FScN 3112, Food Analysis.
Choose one of the following:
- AnPl 3010—Environment and World Food Production (4)
- FScN 3400—Food Marketing Communications (3)
- FScN 5110—Food Chemistry (4)
- FScN 5120—Food Microbiology (5)
- FScN 5360—Sensory Evaluation of Food Quality (4)
- FScN 5474—Food Economics (4)
- FScN 5643—World Food Problems (3)

3-4 credits in psychology of learning or nutrition education from the following:
- EPsy 5114—Psychology of Student Learning (3)
- EPsy 5115—Adult Learning and Educational Practice (4)
- FScN 5614—Nutrition Education (3)
- HSU 5011—The Teaching-Learning Process in the Health Care Setting (3)

Electives to complete 180-185 credits required for graduation with the B.S. degree depending on year and term students entered the University of Minnesota–Twin Cities. See your adviser for more information.

**Alternative Programs**

As an alternative, you may apply to one of the following programs.

**Coordinated Program in Dietetics**

The basic curriculum is similar to that specified above. However, it also includes field experience courses in which didactic and clinical phases of instruction are coordinated. A detailed plan of the coordinated program may be obtained from the Department of Food Science and Nutrition. A limited number of students are admitted to the program each year.

Minnesota law requires each student admitted to a supervised practice program in dietetics to have a criminal background study conducted by the state of Minnesota. The dietetic program director arranges this check.

**Nutrition Science**

**Liberal Education Requirements**

All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

**Communication Requirement**

All CHE students must complete these courses.

- Freshmen composition
  - Rhet 1101 or Comp 1011 or equivalent
- Intermediate composition
  - Rhet 1151/1104 or Comp 1027 or equivalent

Advanced composition
  - Rhet 3562 or Comp 3xxx or equivalent

Public speaking
  - Rhet 1222 or Spch 1101 or equivalent

**Professional Courses in the Major**

**Required Supporting Courses** (72-79 credits)
- BioC 3021—Biochemistry (4)
- BioC 5025—Biochemistry Laboratory (2)
- Biol 1009—General Biology (5)
- Biol 1106—General Zoology (5)
  - or Biol 3011—Animal Biology (4)
- Biol 5003—Genetics (4)
  - or GCB 3022—Genetics (4)
- Chem 1051-1052—Chemical Principles I-II (4,4)
- Chem 3301, 3305—Elementary Organic Chemistry I and Lab (4,2)
- Chem 3302, 3306—Elementary Organic Chemistry II and Lab (4,2)
- Math 1142—Short Calculus (5)
  - or Math 1251-1252—One-Variable Differential and Integral Calculus I-II (4,4)
- Phsl 3051—Human Physiology (5)
  - or Phsl 1001—Human Physiology: Introductory Survey for Allied Health Sciences (4)
  - or AnSci 3301—Systemic Physiology (6)
- Phys 1104, 1107—General Physics (4,1)
- Phys 1105, 1108—General Physics (4,1)
- Phys 1106, 1109—General Physics (4,1)
- VPB 3103—General Microbiology (5)
  - or MicB 5105—Biology of Microorganisms (5)

4-5 credits in statistics chosen from the following or in consultation with adviser:
  - EPsy 5260—Introductory Statistical Methods (4)
  - PubH 5404—Introduction to Biostatistics and Statistical Decision (4)
  - PubH 5450—Biostatics (4)
  - Soc 3801—Sociological Methods I: Descriptive Statistics (5)
  - Stat 1001—Introduction to Ideas of Statistics (4)
  - Stat 3011—Statistical Analysis (4)
  - Stat 3091—Introduction to Probability and Statistics (4)
  - Stat 5021—Statistical Analysis (5)

**Required Professional Courses** (35 credits)
- FScN 1612—Principles of Nutrition (4)
- FScN 3102—Introduction to Food Science (4)
- FScN 3610—Community Nutrition (3)
  - or FScN 5665—Applied Medical Nutrition Therapy I (3)
- FScN 3612—Life Cycle Nutrition (4)
- FScN 5100—General Seminar (1)
- FScN 5110—Food Chemistry (4)
  - or approved advanced chemistry course
- FScN 5612—Experimental Nutrition (2)
- FScN 5620—Nutrition and Metabolism (5)
- FScN 5623—Vitamin and Mineral Metabolism (4)
- FScN 5624—Human Protein and Energy Utilization (4)

Electives to complete 180-185 credits required for graduation with the B.S. degree depending on year and term students entered the University of Minnesota–Twin Cities. See your adviser for more information.

Note: Students considering applying to medical school should check the social science and humanities requirements of the specific schools of interest. For example, the University of Minnesota Medical School requires 27 credits (non-specified courses) in social science and humanities. Thus, a nutrition science student would need to take 9 extra credits in these categories.
The retail merchandising program emphasizes business, retailing, and the study of apparel and home furnishings. Students learn about inventory control, distribution channels, personnel management, problem solving, and presentation.

Retail merchandising offers strong job opportunities. Graduates find jobs in department, specialty, and discount stores, and in direct marketing. Many graduates secure managerial-level positions with local and national retailers.

Retail Merchandising
Department of Design, Housing, and Apparel
240 McNeal Hall
1985 Buford Avenue
St. Paul, MN 55108
612/624-9700

Retail Merchandising
Admission Requirements

Freshmen
Refer to the University of Minnesota—Twin Cities undergraduate application booklet for freshman admission requirements.

Transfer Students
• Completion of high school preparation requirements if post-1986 high school graduate.
• High school intermediate algebra or equivalent.
• Overall GPA of at least 2.50.

Liberal Education Requirements
All University of Minnesota students must complete certain liberal education courses. For more information, see page 24 and consult your academic adviser.

Communication Requirement
All CHE students must complete the following courses.

Freshmen composition
   Rhet 1101 or Comp 1011 or equivalent
Intermediate composition
   Rhet 1151/1104 or Comp 1027 or equivalent
Advanced composition
   Rhet 3562 or Comp 3xxx or equivalent
Public speaking
   Rhet 1222 or Spch 1101 or equivalent

Graduation Requirements
• Completion of all program and college requirements.
• Overall GPA of at least 2.00.
• Minimum grade of C in all professional courses in the major.
• Completion of 185 credits.

Professional Courses in the Major
Preparatory Courses* (Minimum grade of C required)
ApEc 1101 or Econ 1101—Principles of Microeconomics (4)
ApEc 1102 or Econ 1102—Principles of Macroeconomics (4)
Math 1031—College Algebra and Probability (4)
Phys 1001—The Physical World (4)

* Preparatory courses may meet liberal education requirements. Consult your adviser.

Professional Core Courses (53 credits)
(Minimum grade of C required)
Acct 1050—Introduction to Financial Reporting (5)
BA 1550—Business Statistics (4)
DHA 1101—Introduction to the Designed Environment (3)
DHA 1211—Introduction to Retail Merchandising (4)
DHA 3241—Merchandising Principles (4)
DHA 5130—Internship in DHA (1-4)
DHA 5241—Retail Promotion (4)
DHA 5242—Managerial Decision Making (4)
Mgmt 3001—Fundamentals of Management (4)
Mgmt 3002—Psychology in Management (4)
Mgmt 3008—Entrepreneurship and the Smaller Enterprise (4)
Mktg 3000—Principles of Marketing (4)
Mktg 3040—Buyer Behavior (4)
OMS 3000—Introduction to Operations Management (4)

Area of Emphasis
Students specialize in apparel or home furnishings. (Minimum grade of C required.)

Apparel Emphasis (57 credits)

Required
DHA 3212—Cultural Perspectives in Dress (4)
DHA 3213—Fashion Trend Analysis (4)
DHA 3214—Apparel Industries (4)
DHA 3215—Apparel Analysis (4)
DHA 3216—Textile Analysis (5)
DHA 3217—Aesthetics of Clothing (4)
DHA 5211—Issues and Trends in Textiles and Apparel (3)
DHA 5216—Textile and Apparel Consumer (4)
DHA 5217—International Trade in Textiles and Apparel (4)
DHA 5254—Performance Evaluation: Fabrics and Garments (5)

A minimum of 16 additional credits selected from
DHA 1231—Clothing Design Studio I (4)
DHA 1261—Clothing Design Studio II (4)
DHA 1300—Introduction to Design (3)
DHA 1323—Design Process: Drawing I (4)
DHA 1325—Design Process: Two-Dimensional Design I (4)
DHA 1328—Design Process: Color I (4)
DHA 3117—History of Costume: Origins Through 18th Century (3)
DHA 3211—Pattern Development I (4)
DHA 3218—Pattern Development II (4)
DHA 3263—Women’s Textile Arts: An Historical Perspective (3)
DHA 5101—Introduction to Design, Housing, and Apparel Research (4)
DHA 5103—Field Study: National/International (1-15 cr, max 15 cr)
DHA 5118—History of Costume: 19th and 20th Centuries (4)
DHA 5212—Clothing and Human Behavior (4)
DHA 5234—Clothing Design for Special Needs (4)
DHA 5266—Ethnic Dress (3)
HE 1191—Career Planning Strategies (2)
Alternative courses may be taken with adviser approval.

**Home Furnishings Emphasis** (57 credits)

**Required**
Arch 3411—History of Architecture to 1750 (4)
Arch 3412—History of Architecture Since 1750 (4)
DHA 1300—Introduction to Design (3)
DHA 3213—Fashion Trend Analysis (4)
DHA 3216—Textile Analysis (5)
DHA 3631—Interior Design Resources and Materials (3)
DHA 5107—History of Decorative Arts: Textiles (3)
DHA 5109—History of Decorative Arts: Ceramics, Metal, and Glass (3)
DHA 5112—History of European Furniture and Interiors (3)
DHA 5114—History of American Furniture and Interiors (3)
DHA 5115—Twentieth Century Interiors and Furnishings (3)
DHA 5211—Issues and Trends in Textiles and Apparel (3)
DHA 5216—Textile and Apparel Consumer (4)
DHA 5217—International Trade in Textiles and Apparel (4)
A minimum of 8 additional credits selected from

**Electives**

Electives (may be taken S-N) to complete 185 credits required for graduation with the B.S. degree.
The School of Social Work offers two graduate degrees: the master of social work (M.S.W.) and the doctor of philosophy (Ph.D.). The school also offers dual degrees with the School of Public Health (M.S.W./M.P.H.) and the Hubert H. Humphrey Institute of Public Affairs (M.S.W./M.Plan and M.S.W./M.A.). Students with an undergraduate degree in social work from an accredited program may be eligible for advanced standing. With advanced standing, the M.S.W. can be completed in one year of full-time study. Students with a degree in a field other than social work can complete the M.S.W. in two years. There are a variety of options for completing the degree, including full- or part-time and weekday or weekend study. The school also offers a number of undergraduate courses for those interested in combining coursework in direct human services with other CHE degrees.

The M.S.W. is considered the primary degree for professional social work practice. An undergraduate major in social work is not necessary for graduate study in social work, but preparation in the social sciences and liberal arts is required (for example, the school requires 39 quarter/26 semester credits in social sciences to apply for admission to the M.S.W. program). Many School of Social Work applicants have undergraduate majors in family social science, psychology, or sociology, though other undergraduate majors are represented as well.

Social workers use professional interventions with individuals, families, small groups, and communities to enhance people’s problem-solving and coping abilities; promote effective and humane operation of systems that provide resources and services to people; link people with systems and institutions that provide resources, services, and opportunities; and help develop and improve social policy. They work in a range of institutional settings, such as hospitals, health care and mental health facilities, school systems, correctional facilities, courts, and public social service agencies. Social workers also work in private practice providing consulting services and a range of mental health interventions. They also engage in supervision, management, policy development, research, planning, and education. The school combines in-class instruction with field internships to prepare students for professional practice.

Youth Studies

An undergraduate focus in youth studies (27-33 credits) is available to juniors and seniors registered in any college of the University.

Undergraduate Focus Requirements

Prerequisites
Psy 1001—General Psychology (5)
Soc 1001—Introduction to Sociology (4)
YoSt 1000—Introduction to Youth Studies (3)

Core Courses
YoSt 3100—Introduction to Youth Work (3)
YoSt 5201-5202-5203—Practicum (4 cr per qtr)
YoSt 5330—Child and Adolescent Psychology for Practitioners (3)
or CPsy 5303—Adolescent Psychology (4)
YoSt 5331—Youth Agencies, Organizations, and Service Systems (3)

Electives (6-9 cr)

Affiliated Graduate Programs

Youth studies may be incorporated into various University graduate programs:

- Master of social work with youth studies focus, School of Social Work
- Master of education in youth development leadership, College of Education and Human Development
- Master of education in family education, College of Education and Human Development
- Master of liberal studies (self-directed interdisciplinary graduate degree), University College
- Doctoral programs

Youth studies courses are offered cooperatively by the School of Social Work and University College. For more information, call Youth Studies at (612) 624-3700.