

Faculty of Agriculture, Forestry and Home Economics

40 Members of the Faculty

40.1 Officers of the Faculty

Dean

IN Morrison, PhD

Associate Dean (Academic Programs)

RJ Hudson, PhD

Associate Dean (Research)

RJ Christopherson, PhD

Assistant to the Dean

L Prud'homme, BA

40.2 Agricultural, Food and Nutritional Sciences

Professor and Chair

KG Briggs, PhD (Cereal Breeding and Agronomy)

University Professor

C Hiruki, PhD (Virology)

Professors

AW Bailey, PhD (Range Ecology and Management) (Joint Appointment with Renewable Resources)

VE Baracos, PhD (Protein Metabolism)

TK Basu, PhD (Nutritional Biochemistry)

RJ Christopherson, PhD (Animal Physiology)

MT Clandinin, PhD (Nutritional Biochemistry)

JR Feddes, PhD (Animal Housing)

GR Foxcroft, PhD (Swine Reproductive Physiology)

RT Hardin, PhD (Biometrics and Poultry Genetics)

RJ Hudson, PhD (Wildlife Management and Productivity) (Joint Appointment with Renewable Resources)

P Jelen, PhD (Food Processing)

JJ Kennelly, PhD (Dairy Production)

NR Knowles, PhD (Horticultural Crop Physiology)

JJ Leonard, PhD (Instrumentation, Electronics)

MH Makarechian, PhD (Animal Genetics)

GW Mathison, PhD (Nutrition)

B Ooraikul, PhD (Food Processing)

MA Price, PhD (Livestock Growth and Meat Production)

FE Robinson, PhD (Poultry Production)

WC Sauer, PhD (Swine Nutrition)

JS Sim, PhD (Poultry Technology)

P Sporns, PhD (Food Chemistry)

ME Stiles, PhD (Food Microbiology)

AA Szalay, PhD (Plant Biotechnology, Molecular Genetics)

JP Tewari, PhD (Plant Pathology)

WH Vanden Born, PhD (Herbicides and Weed Physiology)

Professor (Canola Research Professor)

GR Stringam, PhD (Plant Breeding)

Associate Professors

PV Blenis, PhD (Forest Pathology) (Joint Appointment with Renewable Resources)

CJ Field, PhD (Nutritional Biochemistry)

AM Flanagan, PhD (Oilseed Physiology and Biotechnology)

A Horak, PhD (Plant Physiology)

JR King, PhD (Forage Physiology and Agronomy) (Joint Appointment with Renewable Resources)

EL LeBlanc, PhD (Food Quality, Objective/Sensory Evaluations)

MI McBurney, PhD (Human Nutrition, GI Function)

LJ McCargar, PhD (Clinical Dietetics)

MA Naeth, PhD (Rangeland Science, Reclamation) (Joint Appointment with Renewable Resources)

F Temelli, PhD (Food Quality Physical/Chemical)

Associate Professor (Dairy Processing Technology Research Chair)

L Ozimek, PhD (Dairy Technology)

Assistant Professors

WT Dixon, PhD (Protein Biochemistry and Molecular Biology)

JA Ozga, PhD (Horticultural Crop Physiology)

T Vasanthan, PhD (Cereals, Fats and Oils)

Assistant Professor (AARI Food Packaging and Preservation Professor)

LM McMullen, PhD (Food Microbiology and Packaging)

Adjunct Professors

J Aalhus, PhD (Meat Quality)

JA Basarab, PhD (Animal Genetics and Production)

KJ Cheng, PhD (Rumen Microbiology)

RN Coleman, PhD (Environmental Microbiology)

L Goonewardene, PhD (Animal Genetics)

GG Greer, PhD (Food Microbiology)

R Howard, PhD (Horticultural Pathology)

WA Keller, PhD (Plant Molecular Biology/Biotechnology)

M Mohyuddin, PhD (Greenhouses/Horticultural Crops)

SD Morgan-Jones, PhD (Animal Growth, Meat Production)

M Palcic, PhD (Food Chemistry)

GE Phillipchuk, MSc (Food Processing, Food Microbiology)

L Roth, MSc (Food Microbiology)

AL Schaefer, PhD (Animal Physiology)

DJ Schroder, PhD (Food Processing, Technology Transfer)

JL Wilson, PhD (Poultry Management)

Administrative Officer

JE Carss, BSc

Faculty Service Officers

T Fenton, BSc

MC McKay, BSc (H Ec)

40.3 Human Ecology

Professor and Chair

EM Crown, PhD (Protective Clothing, Consumer Behaviour)

Professors

N Keating, PhD (Gerontology, Rural Families, Family Caregiving)

N Kerr, PhD (Textile Science, Conservation Science)

D Kieren, PhD (Family Problem Solving, Family Life/Sexuality Education, Family Well-being)

A Lambert, MA (Material Culture, Historic and Cross-Cultural Textiles and Clothing)

E Richards, MS (Textile Conservation and Performance, Environment)

Associate Professors

M Cox-Bishop, EdD, MFA (Cultural Aspects of Textiles, Textile Design, Visual Literacy)

J Fast, PhD (Consumer Behavior, Family Economics, Consumer and Family Policy)

B Munro, PhD (Sexuality and HIV/AIDS Evaluation, Intergenerational Relations)

S Niessen, PhD (Material Culture, Historic and Cross-Cultural Textiles and Clothing)

Assistant Professors

L Capjack, MSc (Functional Apparel and Computer-Aided Design)

N Langford, PhD (Family History, Gender Relations, Reproductive and Family Policy)

B Skrypnek, PhD (Family Relationships, Family Violence, Work and Families)

Adjunct Professors

T Burton, PhD

R Jevne, PhD

P McCormack, PhD

S McDaniel, PhD

J Oakes, PhD

Administrative Officer

L Capjack, MSc

Faculty Service Officer

H Prince, MSc (Textile Conservation)

40.4 Renewable Resources

Professor and Chair

JA Beck, PhD (Integrated Forest and Wildlife Habitat Management, Timber Supply Analysis)

Professors

AW Bailey, PhD (Range Ecology and Management) (Joint Appointment with Agricultural, Food and Nutritional Sciences)

JR Butler, PhD (Wildland Recreation, Management and Planning, Environmental Education)

DS Chanasyk, PhD (Applied Soil Physics and Hydrology)

PH Crown, PhD (Remote Sensing, Soil/Land Evaluation)

BP Dancik, PhD (Dendrology and Forest Tree Improvement)

MJ Dudas, PhD (Soil Chemistry and Mineralogy)
 RJ Hudson, PhD (Wildlife Management and Productivity) (Joint Appointment with Agricultural, Food and Nutritional Sciences)
 NG Juma, PhD (Soil Biology and Ecology)
 VJ Liefvers, PhD (Silviculture/Ecology)
 WB McGill, PhD (Soil Biochemistry)
 DJ Pluth, PhD (Forest Soils)
 SJ Titus, PhD (Resource Measurements and Mensuration)
 RW Wein, PhD (Northern Forest Ecology)
 PM Woodard, PhD (Forest Fire Management)
 FC Yeh, PhD (Forest Genetics)

Associate Professors

PV Blenis, PhD (Forest Pathology) (Joint Appointment with Agricultural, Food and Nutritional Sciences)
 Y Feng, PhD (Soil Physics)
 RF Grant, PhD (Agronomy)
 JR King, PhD (Forage Physiology and Agronomy) (Joint Appointment with Agricultural, Food and Nutritional Sciences)
 SE Macdonald, PhD (Forest Ecology, Ecophysiology)
 MA Naeth, PhD (Rangeland Science, Reclamation) (Joint Appointment with Agricultural, Food and Nutritional Sciences)
 J Zwiazek, PhD (Tree Physiology)

Associate Professor (AARI Soil Conservation Professor)

RC Izaurralde, PhD (Soil Conservation)

Adjunct Professors

SA Abboud, PhD (Soil Chemistry)
 MJ Apps, PhD (Carbon Budgets of Forests)
 MA Arshad, PhD (Soil Physics)
 L Bach, PhD (Wood Engineering)
 B Beck, PhD (Forest Management, Wildlife Habitat Modeling)
 J Brouard, PhD (Tropical Silviculture/Genetics)
 LN Carbyn, PhD (Wildlife/Parks)
 W Cheliak, PhD (Forest Genetics, Biotechnology)
 GM Coen, PhD (Soil Genesis and Classification)
 IGW Corns, PhD (Forest Science)
 RJ Hall, PhD (Remote Sensing/GIS)
 Y Hiratsuka, PhD (Forest Pathology)
 EH Hogg, PhD (Climate Change in the Boreal Forest)
 G Holroyd, PhD (Forest Wildlife)
 S John, PhD (Quantitative Genetics)
 FJ Larney, PhD (Wind Erosion)
 SS Malhi, PhD (Soil Fertility)
 KI Mallett, PhD (Forest Pathology)
 P McCornick, PhD (Agricultural Engineering/Irrigation)
 D McNabb, PhD (Soil Compaction)
 L Morgantini, PhD (Wildlife Habitat)
 S Navratil, PhD (Silviculture)
 WW Pettapiece, PhD (Soil Genesis and Mineralogy)
 R Pharis, PhD (Physiology of Flowering, Early Growth Evaluation)
 G Proulx, PhD (Zoology)
 JB Stelfox, PhD (Forest Wildlife)
 RH Swanson, PhD (Forest Hydrology)
 ES Telfer, PhD (Wildlife)
 LW Turchenek, PhD (Peatlands, Wetlands, Soil Classification)

Administrative Officer

RL Longworth, BA (Hon), BSc

Faculty Service Officer

TC Martin, MSc (Spatial Information Systems)

B LaPlante, PhD (Environmental Economics)
 GA Mumej, PhD (Finance, Management)
 BT Oleson, PhD (Marketing, Trade)
 WA White, PhD (Forest Economics)

Faculty Service Officer

JH Copeland, MSc

40.6 Additional Members of Faculty Council**Representatives from Other Faculties**

Faculty of Arts—one representative
 Faculty of Education—one representative
 Secondary Education, Home Economics teaching area—one representative
 Faculty of Engineering—one representative
 Faculty of Extension—one representative
 Faculty of Science—four representatives

Representatives from Professional Associations

KC Davies, BScAg, Alberta Institute of Agrologists
 T Knapp, BScF, Canadian Institute of Forestry
 L Heyworth, BEd (Home Economics), Alberta Registered Dietetics Association
 J McGregor, BSc (Home Economics), Alberta Home Economics Association

Student Representatives

Students from each of the undergraduate degree programs are to be elected on the basis of one representative to Faculty Council per 100 students or portion thereof in each program by the students in that program.

Graduate student representatives are to be elected from among all those pursuing graduate studies in the departments of the Faculty on the basis of one representative per 100 students or portion thereof.

41 General Information**41.1 General Information**

The Faculty of Agriculture, Forestry and Home Economics is the merged Faculty of Agriculture and Forestry and the Faculty of Home Economics. Both of these Faculties have a long tradition at the University of Alberta. The Faculty of Agriculture and Forestry was established in 1915 and the Faculty of Home Economics in 1918. The two Faculties merged in April of 1993. The Faculty administers undergraduate programs that lead to BSc degrees in Agriculture, Agricultural/Food Business Management, Environmental and Conservation Sciences, Forest Business Management, Forestry, Human Ecology, and Nutrition and Food Sciences. Students interested in these programs may receive additional information by visiting Room 2-10 of the Agriculture/Forestry Centre; by calling 492-4933 or 1-800-804-6417 (Western Canada), or by visiting our homepage at <http://www.afhe.ualberta.ca/>

40.5 Rural Economy**Professor and Chair**

MM Veeman, PhD (Marketing Policy, Trade)

Professors

WL Adamowicz, PhD (Environmental Economics, Econometrics, Forest Economics)
 DS Gill, PhD (Rural Sociology, Agricultural Extension)
 ML Lerohl, PhD (Production Economics Agricultural Policy)
 EW Tyrchniewicz, PhD (Policy, Transportation, International Development)
 TS Veeman, PhD (International Development, Resource Economics) (Joint Appointment with Economics)

Associate Professors

SR Jeffrey, PhD (Agricultural Business Management, Production Economics)
 MK Luckert, PhD (Forest Economics, Natural Resource Economics)
 FS Novak, PhD (Finance, Production Economics)

Associate Professor (Cooperative Chair in Agricultural Marketing and Business)

HG Brooks, PhD (Agricultural Policy, Marketing)

Assistant Professors

KZ Chen, PhD (Marketing, Policy)
 GK Hauer, MSc (Resource and Environmental Economics, Trade)
 NT Krogman, PhD (Sociology of Natural Resources, International Development, Gender)

Assistant Professor (AARI Marketing Professor)

JR Unterschultz, MSc (Marketing, Finance)

Adjunct Professors

TM Beckley, PhD (Forest Sociology)
 GW Lamble, PhD (Extension Education)

41.2 Faculty Objectives

Our undergraduate mission is to promote the development of graduates who are scientifically competent; sensitive to environmental, global, and other social issues; creative; and capable of leadership in addressing challenges faced by individuals, families, and the agriculture, forestry, food, and other natural resources sectors. In carrying out its mission, the Faculty strives to develop the following skills and traits in its students:

- (1) critical and creative thinking skills: the ability to analyse, integrate, and extrapolate information;
- (2) good judgement in problem solving and decision making;
- (3) good communication skills: literacy, speaking, and listening;
- (4) an appreciation of knowledge and education, and a commitment to continuous learning; and
- (5) an appreciation and understanding of international and cross-cultural considerations.

The Baccalaureate degrees in the Faculty provide students with both a broad education and a comprehensive preparation in their specialities. Thus, programs provide students with:

- (1) a solid foundation in applicable social, physical, and biological sciences, and in the humanities. Programs stress more than simple proficiency in these disciplines; they offer courses that feature an integrated, multi-disciplinary treatment of subjects.
- (2) awareness of current issues in the various disciplines and the ability to solve problems in their chosen occupations.

42 Faculty Regulations

42.1 Admission and Transfer

General University admission requirements are detailed in §§13 and 14. Detailed admission requirements for the Faculty of Agriculture, Forestry and Home Economics are specified in §15.1.

The Faculty of Agriculture, Forestry and Home Economics functions under enrolment management. As such, the Faculty's total student enrolment is limited. All applications with the minimum Admission Grade Point Average (AGPA) are evaluated and ranked as part of an applicant pool. Spaces in degree programs are allocated to the top applications in the applicant pool on downwards until the spaces in the degree programs are filled. Therefore, in any given year, the Admission Grade Point Average cutoff to a degree program may be higher than the minimum Admission Grade Point Average required for consideration.

- (1) **Residence Requirement:** A maximum of two years of transfer credit will be granted towards an undergraduate degree program in the Faculty of Agriculture, Forestry and Home Economics. This consists of ★60, or its equivalent (e.g. ten full-courses or 20 half-courses). The amount of transfer credit is determined by the same regulations applicable to those students who are transferring from one Faculty to another within the University.
- (2) **Letter of Permission:** Following initial admission, students are expected to complete all requirements at the University of Alberta. Students may apply for permission to take courses at another institution for application to their program here, provided:
 - a. they are degree program students in the Faculty of Agriculture, Forestry and Home Economics.
 - b. they present "satisfactory" academic standing (i.e., a CGPA of 5.0 or greater).

Approval will not be granted where the student has already received the maximum allowable transfer credit. Note there is no obligation to grant transfer credit unless prior permission has been obtained. Qualified students should contact the Student Services Office, 2-10 Agriculture/Forestry Centre, to obtain the necessary forms prior to enrolling at another institution.
- (3) **Exchange Programs:** For students already admitted to a degree program in the Faculty of Agriculture, Forestry and Home Economics who are participating in approved international exchange programs, credit will be considered on a course by course basis. Students participating in such exchanges will be bound by the same residency requirements as defined in (1) above.

42.2 Academic Standing and Graduation

- (1) The Faculty uses the cumulative grade point average (CGPA) for gauging academic performance. The cumulative grade point average is the weighted average over all attempted courses while registered in the Faculty (in all years and sessions, including Intersession), since September 1993.

Students are expected to maintain a 5.0 minimum CGPA. Students who do not maintain this level of academic performance may be permitted to continue under academic warning or may be required to withdraw. For students who are required to withdraw and subsequently readmitted—the CGPA will be computed only on the courses taken following readmission.
- (2) Terms Used in Assessing Academic Standing:
 - a. **Grade Point Average (GPA):** Grade point average (GPA) is a sessional measure of academic performance. Rules for the computation of the GPA are listed in §23.4(7).
 - b. **Cumulative Grade Point Average (CGPA):** The CGPA is the weighted average over all courses attempted while registered in the Faculty of Agriculture, Forestry and Home Economics (in all years and sessions, including Intersession), not just on sessional grade point averages.

The GPA is printed on the University transcript. Both averages, the GPA and CGPA, are printed on the Statement of Results at the end of each session.
 - c. **Categories of Academic Standing:** A student's academic standing will fall into one of the following categories based on CGPA:
 - 1) **Satisfactory Standing:** a CGPA of 5.0 or higher.
 - 2) **Marginal Standing:** a CGPA between 4.5 and 4.9 inclusive.
 - 3) **Unsatisfactory Standing:** a CGPA of 4.4 or lower.

(3) Application of Academic Standing:

- a. **Satisfactory Standing** (CGPA 5.0 or higher): Students who maintain a satisfactory standing are permitted to continue their studies in the Faculty subject to meeting the specific requirements of their degree program and the general requirements of the University of Alberta.
- b. **Marginal Standing** (CGPA 4.5 to 4.9 inclusive): Students receiving their first assessment of marginal standing are permitted to continue, under academic warning, until the next assignment of academic standing; provided their specific degree requirements and the general requirements of the University of Alberta are also met. At the time of the next assignment of academic standing, such students:
 - 1) who raise their CGPA to at least 5.0 may continue their studies with satisfactory standing.
 - 2) whose CGPA is less than 5.0 and whose average on the courses taken since the last review is less than 5.0 will be required to withdraw.
 - 3) whose CGPA is less than 5.0 but who have, during the period since the last review, achieved an average of at least 5.0 on all courses attempted, will be permitted to continue under academic warning for one more review period.
- c. **Unsatisfactory Standing** (CGPA of 4.4 or less): Students with unsatisfactory standing are required to withdraw.

Students who are required to withdraw from the Faculty at the end of the Winter Session may not register for the following Intersession. Students who register for Intersession prior to the requirement to withdraw will have their registration cancelled without penalty. Subject to Petition see §42.5.1.
- d. **Requirement to Withdraw:** Students with an Unsatisfactory Standing will normally be required to remain out of the Faculty until they have successfully completed at least ★24 transferable to the University and present an AGPA of at least 5.0.

Students who have been required to withdraw and who, after being readmitted, again fall below a cumulative grade point average (CGPA) of 5.0 will be required to withdraw and will not be readmitted to the Faculty.

Students who petition their 'Required to Withdraw' status and are successful will proceed on probation as a marginal student (i.e., they will be allowed to continue in the Faculty as long as they meet the marginal standing requirements as outlined in (3)b.3).
- (4) **First Class Standing:** For the purposes of scholarships and awards, First Class Standing in a given year shall be awarded to any undergraduate student who obtains a grade point average of not less than 7.5, the GPA to be computed on a minimum of ★24 taken during that year, the year to consist of first and second terms in Winter Session. Students who attend in only one term of the Winter Session are eligible if they complete at least ★12 with a minimum GPA of 7.5.
- (5) **Dean's List:** This designation shall be given to a student who achieves a grade point average (GPA) of at least 7.5 on a minimum of ★18 in the Winter academic session. Students who attend in only one term of the Winter Session are eligible if they complete at least ★9 with a minimum grade point average (GPA) of 7.5.
- (6) a. **Application for Graduation:** Students who intend to receive a BSc degree must apply for their degree at the Faculty Office by February 1 for Spring Convocation or by September 1 for Fall Convocation.
 - b. **Convocation:** All requirements for graduation at Spring Convocation must be met by the end of Winter Session. Those completing degree requirements during the first term of Winter Session will graduate at the Spring Convocation, whereas those completing degree requirements during Intersession will graduate at the Fall Convocation.
- (7) **Graduation With Distinction:** This designation shall be awarded to a student achieving a grade point average of 7.5 or better on the last ★60.

In cases where more than ★60 were taken in the last two years, the grades from all courses taken in the last year will be used in this calculation. The remaining courses necessary to make up the ★60 requirement will be selected from the previous term or terms and the average of all courses taken in the previous term (or terms) will be used in calculating the graduation GPA.

In cases where fewer than ★60 were taken in the last two years, the grades from all courses taken in the last two years will be used in this calculation, and additional units of course weight from the previous term or terms will be used as necessary to make up the ★60 requirement. The units of course weight used from the previous term or terms will be computed with the average of all courses taken in that term.

- (8) For the purposes of interpreting the Faculty's academic standing regulations a full-time student is defined as one who is enrolled in the equivalent of ★9 or more in a term; and a probationary year is defined as two consecutive regular academic terms (i.e., first and second terms of one Winter Session or second term of one Winter Session and first term of the next).
- (9) **Reexamination Policy:** See §23.5.5 for University Regulations.
- (10) **Nonstandard course load:** Students wishing to take more than ★15 in a term must have satisfactory standing and approval of a program advisor.

(11) Curriculum and Graduation

- a. The programs for the BSc degrees in Agriculture, Environmental and Conservation Sciences, Nutrition and Food Sciences, Forestry, Human Ecology, Agricultural/Food Business Management, and Forest Business Management, must conform to the descriptions in §§43.2 to 43.4 respectively. All students must seek advice about their programs from their academic advisors. Students are reminded of the regulation that they are responsible for the completeness and accuracy of their registrations.
- b. Students registered in degree programs in the Faculty must have successfully completed a minimum of ★122 for all programs except BSc Forestry and BSc in Forest Business Management which require ★125 to graduate. (Students who began their degree programs in the Faculty prior to September 1996 must have successfully completed a minimum of ★120 for all programs except the BSc Forestry which requires ★123 to graduate.) Students who register for more than a minimum number of courses for graduation must designate the additional courses as extra. In order to exclude courses in excess of the minimum requirement from the contract for graduation, students must designate such courses as 'extras' at the time of registration for their final year.

All students who upon admission to the Faculty of Agriculture, Forestry and Home Economics present less than ★24 transferable to the University are required to take a student orientation seminar (UNIV 100 ★2) during the first term in which they are registered in the Faculty. Students who present at least ★24 transferable to the University will receive credit for UNIV 100 (★2). In addition, students registered in the BSc in Forestry and BSc in Forest Business Management programs are required to complete Forestry Field Camps (FOR 101, 302, 303, and 304).

42.3 Withdrawal from Courses

Withdrawal from individual courses can be arranged through the Student Services Office in 2-10 Agriculture/Forestry Centre. Applications for withdrawal should be made according to the deadlines listed in the Academic Schedule (§11).

42.4 Petitions and Appeals

The Faculty of Agriculture, Forestry and Home Economics has established petition and appeal procedures so that students who encounter special problems relating to academic standing, grade or course concerns and program requirements are reviewed in a fair and equitable manner. A copy of Faculty of Agriculture, Forestry and Home Economics regulations regarding petitions and appeals may be obtained from the Faculty Office, 2-10 Agriculture/Forestry Centre.

Note: There are deadlines for submission of petitions and appeals. Contact the Faculty for details.

Under certain conditions, an unsuccessful appeal within the Faculty may be carried to the General Faculties Council Academic Appeals Committee. See §23.8.

42.5 Student Advisory Services

Undergraduate students seeking advice on academic matters should do the following:

- (1) For answers to general questions about careers, course content, fields of specialization, and preparation for graduate study, students should consult with an academic advisor. A list of academic advisors is available in the Faculty's Student Services Office in Room 2-10 of the Agriculture/Forestry Centre.
- (2) For information regarding Faculty regulations on admission, readmission, program requirements, transfer, course registration, withdrawal, and graduation requirements, students are directed to the Faculty's Student Services Office in Room 2-10 of the Agriculture/Forestry Centre.

- (3) Students who are encountering special difficulties related to either their programs, or to Faculty decisions, and students with problems of an individual nature, should contact the Associate Dean (Academic Programs), whose office is in Room 2-10 of the Agriculture/Forestry Centre.

43 Programs of Study

43.1 Structure of Degree Programs

The Faculty offers programs leading to seven BSc degrees in Agriculture; Environmental and Conservation Sciences; Forest Business Management; Nutrition and Food Sciences; Forestry; Human Ecology; and Agricultural/Food Business Management.

The structure of the Faculty's degree programs is shown below. General information and specific course requirements for each degree, major, and area of concentration can be found in §§43.2 to 43.8.

The degree programs in the Faculty have a common structure that includes the following:

- (1) The Faculty Common Core consists of ★38 required for most degree programs (the exceptions being the BSc Agricultural/Food Business Management, BSc Forest Business Management and the BSc Human Ecology) plus ★12 in enrichment (free) electives. The intent of the Common Core is to provide a broad university education. It also facilitates interprogram transfers within the Faculty in the first two years of study.
 - a. ★38 in the following areas are required in the Faculty Common Core:
 - Ecology or Global Ecosystems and Human Involvement (★3)
 - Communication (★3)
 - Quantitative/Qualitative Methods (★9 for most degree programs except for BSc Human Ecology which has ★6 requirement)
 - Life Sciences (For most degree programs this area includes two of the following five areas: Plant Biology, Animal Biology, Genetics, Microbiology, and Biochemistry courses. The BSc Human Ecology program may add Chemistry courses to this list.)
 - English (★3)
 - Economics (★6)
 - Basic Social Sciences/Humanities (★3) (See note below.)
 - Human Resource Management (★3)
 - Student Orientation (★2)

Note: For all degrees, with the exception of BSc Human Ecology, courses from the basic Social Sciences/Humanities may be selected from Family Studies, Human Ecology, Rural Sociology; Native Studies (except NS 100); Anthropology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology, Theology, and courses defined by the Faculty of Arts as Fine Arts.

- b. ★12 enrichment (free) electives to be chosen by the student within or outside the Faculty of Agriculture, Forestry and Home Economics.
- (2) **Natural Sciences or Social Sciences Common Core:** ★6 or ★12, respectively
 - (3) **Degree Program Core:** ★18 to ★36 (depending on the program)
 - (4) **Major or Area of concentration:** ★30 to ★48 (depending on the program)

Students have considerable opportunity to pursue areas of interest in their programs. To obtain the best possible program, students should work closely with their academic advisors.

43.2 The Degree of BSc in Agriculture

43.2.1 General Information

- (1) The Faculty offers courses leading to the Degree of Bachelor of Science in Agriculture. The objective of the degree program is to provide students with an understanding of the scientific principles underlying the many facets of agriculture together with their application in agricultural systems and related industries and, through a broadly based educational experience, to develop student capacities for critical and independent thought and clear expression of ideas. Throughout the program, emphasis is placed upon the integration of several areas in the physical, biological, and social sciences, relevant to modern agricultural practices.

Graduates of the program will have a background in basic social, natural, and agricultural sciences, with an emphasis on sustainable production, renewable agricultural resource management, and economic analysis. Graduates would qualify to apply to be Agrologists in Training which can lead to status as Professional Agrologists.

- (2) During their first year, or before they register for their second year, students must consult with a Faculty advisor. Course choices at this stage have implications for the scheduling of courses in majors students will choose to pursue.
- (3) Students in the BSc Agriculture degree program must choose one of five possible majors (Agricultural Sciences [Individual], Animal Science, Applied Economics, Crop and Horticultural Science, Land Resource Science). This choice must be made before entering the third year of the program, but may be made as early as the beginning of the first year. Required courses for each of the five majors are listed in Agriculture, Forestry and Home Economics Chart 1, §43.2.8.
- (4) Each student must complete at least ★3 in a capstone course, usually taken during the final year. These courses are offered with the purpose of providing cross-disciplinary integration of subject matter. Each course will normally have two or three instructors from different disciplines, and will have course prerequisites.
- (5) Students in the Pre-Veterinary Medicine program (§43.2.7) are able to continue in the BSc in Agriculture degree program and receive credit for courses already completed successfully.

43.2.2 Agricultural Sciences (Individual)

- (1) **General Information:** This major is intended for highly motivated students who wish to develop their own program in some area of Agricultural Sciences. The choice of program may be narrow or broad, but it must include study in depth of at least one approved discipline. Students may choose to modify one of the existing BSc program majors to better satisfy individual needs. Appropriate disciplines and depth are subject to approval of the faculty advisor and the Dean. Upon consultation with an advisor, a student submits a four-year plan outlining the intended courses for the program. The advisor will submit the plan to the Program Planning Committee for endorsement and subsequent final approval by the Associate Dean.

The course program in this major will provide students with a sound understanding of the scientific disciplines that underlie the specific fields of interest they have chosen to study.

Graduates with this major will find opportunities to work and serve in technical or management positions in the areas they have chosen to study. They also should be well prepared for entry into a graduate study program in the area or discipline they have chosen to study in depth.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 1, §43.2.8.

43.2.3 Animal Science Major

- (1) **General Information:** The Animal Science Major encompasses studies in the science of livestock and poultry production.

The objective of this major is to enable students to gain an understanding of the scientific disciplines of animal science including physiology, genetics, biochemistry, nutrition, and behavior. Students will also learn how to integrate and apply these concepts in the solution of problems in animal production systems.

Graduates with this major will find opportunities in a wide range of agribusiness industries, government agencies, primary agriculture, and graduate study programs.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 1, §43.2.8.

43.2.4 Applied Economics Major

- (1) **General Information:** The Applied Economics Major offers studies in the application of economics to agricultural production systems and related industries.

The objectives of this major are to provide students with an understanding of the basic principles of economics and of technical agricultural sciences that relate to production, processing, marketing, and financing farm and agrifood industries. Students are provided access to economic and management theory about farming and off-farm agriculture firms, as well as analytical techniques that permit them to understand and assess influences on farms and related industries. The emphasis in the program is to develop the knowledge of economics and agricultural sciences that will permit graduates to understand the systems of agriculture and to develop an ability to integrate ideas and concepts about agriculture industries.

Graduates with this major will find opportunity to work and serve in management, planning, and advisory positions in a wide range of agricultural industries, government agencies, or private consulting firms. In addition, students who complete this major will be well prepared for entry into a graduate study program.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 1, §43.2.8.

43.2.5 Crop and Horticultural Science Major

- (1) **General Information:** The focus of the Crop and Horticultural Science Major is studies in the agronomy and science of agricultural and horticultural crop production.

The objective of the Crop and Horticultural Science Major is to provide students with a sound understanding of the scientific disciplines involved in plant growth, soil characteristics, and plant responses to a range of environmental factors. Students will also learn about biotechnological, breeding, and production and management techniques used to develop, grow, and market well adapted high quality and high yielding crop cultivars, in a way that is responsive to economic situations, market demands, and societal expectations. Students may choose to emphasize either Crop or Horticultural Science or combine courses from both areas. The emphasis throughout the program is on integration of information relevant to the objectives.

Graduates with this major will find opportunity to work and serve in technical and management positions in agricultural industries, or in advisory, regulatory, sales and management positions in government agencies. In addition, students who complete this major will be well prepared for entry into a graduate study program.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 1, §43.2.8.

43.2.6 Land Resource Science Major

- (1) **General Information:** The Land Resource Science Major offers students the opportunity to study soils as natural and managed components of terrestrial ecosystems.

There is much local and global concern with soil processes and human interaction with the soil at the landscape level. The Land Resource Science Major offers students a thorough background in the fundamentals of soil and land resource science so that they can understand and assess these concerns and recommend appropriate action.

The career opportunities for the Land Resource Science Major are many and, as there is growing awareness of the need to preserve and sustain soil and land quality, other career paths are emerging. Opportunities include employment with the traditional government agencies (Agriculture at the federal and provincial levels). Opportunities are also available in other government agencies at the municipal level (regional and city planning agencies, engineering and agricultural projects, and extractive resource based industries) that are operating in agricultural areas.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 1, §43.2.8.

43.2.7 Pre-Veterinary Medicine Program

- (1) **General Information:** The Veterinary Medicine program consists of two years of Pre-Veterinary Medicine, and four years of Veterinary Medicine at the Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon. Alberta residents desiring to take Veterinary Medicine at the University of Saskatchewan may take two pre-veterinary years at the University of Alberta. There is a quota on Alberta students entering Veterinary Medicine at the University of Saskatchewan, and students with the highest standing in the work of the two pre-veterinary years will receive preference. Since the Western College of Veterinary Medicine is a regional institution, it admits almost exclusively students from western Canada with quotas for each province. For detailed information on residency policy and admissions procedures, contact the Admissions Office, Western College of Veterinary Medicine for a copy of the Admissions Brochure.

Students planning to enter Pre-Veterinary Medicine should note the entrance requirements described in §15.1.4. Inquiries about the program should be addressed to the Dean, Faculty of Agriculture, Forestry and Home Economics, University of Alberta.

- (2) **Required Courses:** Two full years of university training are required for admission to the Western College of Veterinary Medicine, during which credit must be secured for the number of courses customarily considered a standard load in the curriculum in which they are obtained.

The program of study must include

- | | |
|-------------------|--------------------------------|
| Biochemistry (★6) | Genetics (★3) |
| Biology (★6) | Introductory Microbiology (★3) |
| Chemistry (★6) | Mathematics or Statistics (★6) |
| English (★6) | Organic Chemistry (★3) |
| Electives (★15) | Physics (★6) |

(3) **Course Sequence:**

The course sequences for Years 1 and 2 are as follows:

Year 1

- | | |
|-----------|-------------------|
| AGFOR 100 | CHEM 161 and 163 |
| AGFOR 204 | ENGL (★3) |
| BIOL 107 | MATH 113 (or 114) |

- | | |
|------------------|----------|
| BIOL 108 | UNIV 100 |
| CHEM 101 and 102 | |

Note: These courses must be taken in Year 1. Students transferring from other programs or institutions will be required to complete all of the above courses in which they are deficient during their first year in

attendance in the Pre-Veterinary Medicine program at the University of Alberta.

Year 2

- BIOCH 203 and 205 or PL SC 331 and AN SC 391
 BIOL 207
 ECON 101 and 102
 PHYS 100 and 101
 PL SC 211, 221 or 235 or BIOL 208
 STAT ★3
 Elective ★3

Note: Students may wish to extend the pre-veterinary medicine requirements over more than two years. This should be done in consultation with the Pre-Veterinary Medicine program advisor.

(4) **Transfer to Programs in the Faculty:** Students successfully completing the two years of pre-veterinary medicine may continue in the Faculty and earn the BSc in Agriculture, or one of the other degrees that the

43.2.8 Required Courses and Sample Course Sequence for BSc Agriculture

Agricultural Sciences (Individual)	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★12)	Social Sciences Common Core	Program Core (★27)	Major Requirements (★33)
Refer to Notes 1 and 2						
Year 1 ★32 (See Note 2)	1. AGFOR 100 2. AGFOR 204 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. UNIV 100 (★2)		1. ★6 of Organic Chemistry, Inorganic Chemistry, or Physics	n/a	1. AN SC 200 2. Plant Science (★3)	
Year 2 ★30	1. Two of (PL SC 211, 221 or 235); (BIOL 107, 108, 207, 208); (★3) BIOCH		1. Two of (PL SC 211, 221 or 235); (BIOL 107, 108, 207, 208); (★3) BIOCH (if courses not taken as part of the Faculty Common Core)	n/a	1. One of BIOEN 200, NU FS 283, ★3 Physics 2. One of AG EC 333, 384; INT D 365 3. ENT 207 4. SOILS 210	1. Approved Program Electives (★6)
Year 3 ★30	1. Two of (AG EC 316 or MATH 120); STAT 151; (CMPUT 101 or 114); ★3 PHYS 2. Basic Social Sciences/ Humanities (★3) (See Note 1)	1. Free Elective (★3)		n/a	1. BIOEN 311 or ENCS 361 or FOR 350 2. One of AN SC 374, 471, 472, 474, 475, 476; ENT 392; PL SC 352, 380, 495	1. Approved Program Electives (★12)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★9)		n/a	1. CAPS 400	1. Approved Program Electives (★15)

Notes:

- (1) Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.
 (2) This major is for highly focused students who wish to develop their own program in an area not covered by the established majors in this degree program. Students must submit to the Faculty for approval a four-year plan outlining the intended courses for the program which was completed in consultation with an academic advisor.

43.2.8 Required Courses and Sample Course Sequence for BSc Agriculture (cont'd)

Animal Science	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★12)	Social Sciences Common Core (★12)	Program Core (★27)	Major Requirements (★33) Requirements (★21) Approved Program Electives (★12—★15; see Note 2)
Refer to Notes 1 and 2						
Year 1 ★32	1. AGFOR 100 2. PL SC 211, 221, 235 or BIOL 208 3. ECON 101 4. ECON 102 5. MATH 113 or 114 6. BIOL 107 7. UNIV 100 (★2)		1. CHEM 161 and 163	n/a	1. AN SC 200 2. Plant Science (★3)	
Year 2 ★30	1. ENGL (★3) 2. STAT 151	1. Free Elective (★3)	1. PL SC 331 or BIOCH 203 or 220 2. BIOCH 205 or AN SC 391	n/a	1. ENT 207 2. SOILS 210	1. AN SC 310 2. BIOL 207 3. NUTR 260 or 301 (See Note 2)
Year 3 ★30	1. AGFOR 204 2. CMPUT 101 or 114			n/a	1. AG EC 333 or 384 2. One of BIOEN 200, NU FS 283, (★3) Physics 3. BIOEN 311 or ENCS 361 or FOR 350 4. One of AN SC 374, 471, 472, 474, 475, 476	1. AN SC 311 2. AN SC 385 or 484 3. NUTR 302 or Approved Program Elective 4. Approved Program Elective (★3)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321 2. Basic Social Sciences/ Humanities (★3) (See Note 1)	1. Free Electives (★9)		n/a	1. CAPS 400	1. NUTR 365 2. Approved Program Electives (★9)

Notes:

- (1) Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.
- (2) Students who take NUTR 301 must follow this with NUTR 302 and should select a total of 12 Approved Program Electives. Students who take NUTR 260 should follow this with an Approved Program Elective and thus will select a total of 15 Approved Program Electives.

Applied Economics	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★12)	Social Sciences Common Core (★12)	Program Core (★27)	Major Requirements (★33) Requirements (★18) Approved Program Electives (★15)
Refer to Note						
Year 1 ★32	1. AGFOR 100 2. Two of (PL SC 211, 221, 235); (BIOL 107, 108, 207, 208); ★3 Biochemistry 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. AG EC 316 or MATH 120 8. STAT 151 9. UNIV 100 (★2)		n/a		1. Plant Science (★3)	
Year 2 ★30	1. Basic Social Sciences/Humanities (★3) (See Note)	1. Free Elective (★3)	n/a	1. ★3 from AG EC, R SOC, or SOC courses 2. One of R SOC 355, 391 or 100-level SOC	1. One of AG EC 333 or 384 or INT D 365 2. AN SC 200 3. One of BIOEN 200, NU FS 283, ★3 Physics 4. ENT 207 5. SOILS 210	1. ACCTG 300
Year 3 ★30	1. AGFOR 204	1. Free Elective (★3)	n/a	1. ECON 281 2. ECON 282	1. BIOEN 311 or ENCS 361 or FOR 350 2. One of AN SC 374, 471, 472, 474, 475, 476; ENT 392; PL SC 352, 380.	1. Three of AG EC 333, 373, 384; INT D 365 (not previously taken) 2. Approved Program Elective (★3)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)	n/a		1. CAPS 400	1. AG EC 400-level electives (★6) 2. Approved Program Electives (★12)

Note: Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.

43.2.8 Required Courses and Sample Course Sequence for BSc Agriculture (cont'd)

Crop and Horticultural Science	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★12)	Social Sciences Common Core	Program Core (★27)	Major Requirements (★33) Requirements (★18) Approved Program Electives (★15)
Refer to Note						
Year 1 ★32	1. AGFOR 100 2. PL SC 221 or 235 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. UNIV 100 (★2)		1. CHEM 161 and 163	n/a	1. AN SC 200 2. Plant Science (★3)	
Year 2 ★30	1. STAT 151 2. One of AG EC 316; MATH 120; CMPUT 101 or 114	1. Free Elective (★3)	1. BIOL 107	n/a	1. ENT 207 2. SOILS 210	1. BOT 240 2. PL SC 380 3. 300- or 400-level PL SC course 4. PL SC 324
Year 3 ★30	1. AGFOR 204 2. BIOL 207 3. Basic Social Sciences/ Humanities (★3) (See Note)	1. Free Elective (★3)	1. PL SC 331	n/a	1. AG EC 333 or 384 2. One of BIOEN 200, NU FS 283 or ★3 Physics 3. BIOEN 311 or ENCS 361 or FOR 350 4. PL SC 352	1. Approved Program Elective (★3)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)		n/a	1. CAPS 400	1. ENCS 360 or SOILS 460 2. PL SC 465 3. Approved Program Electives (★12)
Note: Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.						
Land Resource Science	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★12)	Social Sciences Common Core	Program Core (★27)	Major Requirements (★33) Requirements (★21) Approved Program Electives (★12)
Refer to Note						
Year 1 ★32	1. AGFOR 100 2. PL SC 211, 221, 235 or BIOL 208 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. BIOL 107 8. UNIV 100 (★2)		1. CHEM 161 and 163	n/a	1. Plant Science (★3)	
Year 2 ★30	1. STAT 151	1. Free Elective (★3)	1. BIOL 108 or 207 2. (★3) Biochemistry	n/a	1. AN SC 200 2. ENT 207 3. SOILS 210	1. One of BOT 202, 210; REN R 120; ENCS 356, 406 2. One of EAS 101; EAS 201, 225 3. Approved Program Elective (★3)
Year 3 ★30	1. AGFOR 204 2. One of AG EC 316; MATH 120; CMPUT 101 or 114	1. Free Elective (★3)		n/a	1. One of AG EC 333 or 384 or INT D 365 2. One of BIOEN 200, NU FS 283, ★3 Physics 3. BIOEN 311 or ENCS 361 or FOR 350 4. One of PL SC 352, 380; AN SC 374, 471, 472, 474, 475, 476	1. SOILS 330 or 430 2. SOILS 420 3. SOILS 450
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321 2. Basic Social Sciences/ Humanities (★3) (See Note)	1. Free Electives (★6)		n/a	1. CAPS 400	1. REN R 425 2. SOILS 440 3. Approved Program Electives (★9)
Note: Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.						

Faculty offers. Two additional years of course work, or more depending on the program selected may be required to complete the degree.

43.3 The Degree of BSc in Environmental and Conservation Sciences

43.3.1 General Information

- (1) The Faculty's new program in environmental and conservation sciences is particularly suited to students with an interest in conservation and environmental matters. Graduates of this program will have the ability to evaluate impacts of human land use and industrial activity on plant, soil, water, and animal resources. They will also be able to assess and facilitate conservation measures and remediation for natural and damaged ecosystems.

Graduates of the Bachelor of Science in Environmental and Conservation Sciences will have a strong background in the basic and applied sciences. A further objective of the program is to develop graduates who are not only reactive, but are agents for positive, responsible stewardship and change. Graduates will also understand the role that social, economic, and political forces play in natural resource management. They will integrate knowledge from a variety of disciplines and be cognizant of the various philosophies about the role of humans in the environment. Thus, graduates will be able to employ balanced judgement, based on a foundation of environmental ethics and philosophy, and suggest wise use of natural resources.

The BSc in Environmental and Conservation Sciences emphasizes the integration of natural science, management, and social science as related to environmental issues. It offers a program of study with emphasis on applied problem solving and environmental management and is distinct from, but complementary to, the BSc (with Specialization and Honors in Environmental Biology) offered in the Faculty of Science. However, first year requirements in both programs are similar permitting easy transfer between programs at the end of the first year. These two programs offer students the opportunity to pursue study in the areas of environmental science at the undergraduate level.

Employment opportunities include work with government or non-government agencies concerned with forestry, parks, nature reserves, nature centres, environmental education, recreational areas, fish and wildlife management, environmental policy analysis, rangeland management, land reclamation, and ecotourism. Employment opportunities also exist with private corporations and consulting firms concerned with environmental planning, management and remediation strategies and related areas.

- (2) The BSc Environmental and Conservation Sciences program follows the Faculty Core and Natural Sciences Core. The Program Core extends the Faculty Core and Natural Sciences Core by requiring course work in resource assessment, environmental philosophy, environmental policy, and natural resource/environmental economics. Students must choose an area of concentration or construct an independent program in consultation with a Faculty advisor. Beginning in the second year, students should begin to develop a program of study in consultation with an Environmental and Conservation Sciences program advisor.

Required courses for all areas of concentration are detailed in Agriculture, Forestry and Home Economics Chart 2, §43.3.8.

43.3.2 Conservation Biology and Management Concentration

- (1) **General Information:** This concentration emphasizes a foundation in ecological sciences and natural resources for the management and stewardship of protected areas and critical ecological environments. The program emphasizes understanding, planning, management and communications regarding complex ecological relationships of natural environments, securing the biological integrity of those environments, and facilitating, where appropriate, their use for outdoor recreation, ecotourism, and environmental education. Students selecting this concentration most often focus on landscapes designated as national and provincial parks, ecological reserves, nature sanctuaries, wildlife refuges, and wilderness areas.

Employment opportunities include work with government or non-government agencies concerned with forestry, parks, nature reserves, nature centres, environmental education, recreational areas, fish and wildlife, and ecotourism. Employment opportunities also exist with private corporations and consulting firms concerned with planning, and management strategies.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 2, §43.3.8.

43.3.3 Environmental Economics and Policy Concentration

- (1) **General Information:** Graduates choosing this area of concentration will develop skills in the economic analysis of environmental problems and the policy process associated with environmental issues. The interaction between economic, social, political, and legal elements of environmental problems will also be addressed. The Environmental Economics and Policy Concentration builds on the Environmental and Conservation Sciences Core with a block of courses intended to provide the background for economic, political, social, and legal approaches to environmental problems. Extensions into advanced economic theory, political theory, social theory or other policy sciences may be considered by the student in consultation with an advisor.

Graduates will be prepared for careers in government and private industry in environmental economic analysis, policy analysis, and other related areas.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 2, §43.3.8.

43.3.4 Independent Concentration

- (1) **General Information:** The individual option within the BSc Environmental and Conservation Sciences is a flexible program designed for students with a specific desire to design their own programs of study in consultation with an advisor. Details on the programs and advisors are available from the Dean of the Faculty. Upon consultation with an advisor, a student submits a four-year plan outlining the intended courses for the program. The advisor will submit the plan to the Program Planning Committee for endorsement and subsequent final approval by the Associate Dean.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 2, §43.3.8.

43.3.5 Land Remediation, Reclamation, and Conservation Concentration

- (1) **General Information:** This concentration combines the natural and applied sciences in order to understand and minimize the impacts of anthropogenic activities on natural resources, with emphasis on soil, plant, and water components of the ecosystem. Graduates should be able to conduct and/or direct remediation strategies and conservation measures to maintain quality environments and to restore damaged ecosystems.

Graduates will be prepared for careers in government and private industry as environmental scientists dealing with a broad range of issues related to soil and water pollution, land reclamation, and soil and water conservation. Graduates should also be able to contribute natural science expertise to environmental impact assessments and land-use planning.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 2, §43.3.8.

43.3.6 Wildlife and Rangeland Conservation

- (1) **General Information:** The Wildlife and Rangeland Conservation Concentration introduces the theory and practice of managing soil-plant-animal relationships. Students will have an understanding of multiple uses of wildlands and the integration of wildlife and landscape conservation with agriculture, forestry and other forms of natural resource utilization. This concentration deals with means to increase the productivity and diversity of wild plants and animals.

Graduates will be prepared for careers with government agencies or private firms dealing with management of wildlife, rangelands, and forests.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 2, §43.3.8.

43.3.7 Wildlife Restoration Concentration

- (1) **General Information:** This area of concentration provides opportunities for students interested in captive breeding, repatriation, and rehabilitation of wildlife, an increasingly important part of maintaining biological diversity. Students gain a background in nutrition, physiology, diseases,

husbandry, and welfare to prepare them for careers with breeding programs for endangered species, rescue centres, wildlife management agencies, zoos, private reserves, and wildlife production enterprises. This background also prepares them for graduate studies in laboratory disciplines such as forensic science, conservation genetics, reproductive

technologies, bioenergetics, and environmental physiology. If courses are properly sequenced and free electives are carefully selected, the concentration also meets the entrance requirements of the Western College of Veterinary Medicine for students wishing careers as wildlife veterinarians (see §43.2.7).

43.3.8 Required Courses and Sample Course Sequence for BSc Environmental and Conservation Sciences

Conservation Biology and Management	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★27)	Areas of Concentration Core (★39) Requirements (★12) Approved Program Electives (★27)
Refer to Notes 1, 2, 3, 4, and 5					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL (★3) 5. Basic Life Sciences Options (★6) (See Note 1) 6. MATH 113 or 114 7. STAT 151 8. UNIV 100 (★2)		1. Organic Chemistry, Inorganic Chemistry, or Physics (★6)		
Year 2 ★30	1. One of AG EC 316, BIOEN 200, MATH 120 (See Note 2) 2. AGFOR 204 3. Basic Social Sciences/Humanities (★3) (See Note 3)	1. Free Elective (★3)		1. Basic Ecological Principles (★3) (See Note 4) 2. ENCS 201 3. ENCS 203 4. ENCS 204 5. ENCS 260 6. SOILS 210	
Year 3 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)		1. INT D 365 or 369	1. Approved Program Electives (★12) (See Note 5) 2. ENCS 462 3. ZOOL 467
Year 4 ★30		1. Free Elective (★3)		1. CAPS 410 2. ENCS 473	1. Approved Program Electives (★15) (See Note 5) 2. ENCS 464 3. ENCS 467
Environmental Economics and Policy	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★27)	Areas of Concentration Core (★39) Requirements (★12) Approved Program Electives (★27)
Refer to Notes 1, 2, 3, 4 and 5					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL (★3) 5. Basic Life Sciences Options (★6) (See Note 1) 6. MATH 113 or 114 7. STAT 151 8. UNIV 100 (★2)		1. Organic Chemistry, Inorganic Chemistry, or Physics (★6)		
Year 2 ★30	1. One of AG EC 316, BIOEN 200, MATH 120 (See Note 2) 2. AGFOR 204 3. Basic Social Sciences/Humanities (★3) (See Note 3)			1. Basic Ecological Principles (★3) (See Note 4) 2. ENCS 201 3. ENCS 203 4. ENCS 204 5. ENCS 260 6. INT D 365 7. SOILS 210	
Year 3 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★9)			1. Approved Program Electives (★12) (See Note 5) 2. ECON 352 or AG EC 435 3. INT D 369
Year 4 ★30		1. Free Elective (★3)		1. CAPS 410 2. ENCS 473	1. Approved Program Electives (★15) (See Note 5) 2. ENCS 472 or AG EC 416 3. INT D 465
Notes:					
(1) Basic Life Sciences: BIOL 107 and 108 recommended.					
(2) AG EC 316 or MATH 120 recommended for Environmental Economics and Policy concentration.					
(3) Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology, and courses defined by the Faculty of Arts as fine arts.					
(4) BIOL 208 recommended.					
(5) Approved Program Electives must be selected with an academic advisor.					

43.3.8 Required Courses and Sample Course Sequence for BSc Environmental and Conservation Sciences (cont'd)

Independent Concentration	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★27)	Areas of Concentration Core (★39) Requirements (★12) Approved Program Electives (★27)
Refer to Notes 1, 2, 3, 4 and 6					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL (★3) 5. Basic Life Sciences Options (★6) (See Note 1) 6. MATH 113 or 114 7. STAT 151 8. UNIV 100 (★2)		1. Organic Chemistry, Inorganic Chemistry, or Physics (★6)		
Year 2 ★30	1. One of AG EC 316, BIOEN 200 or MATH 120 (See Note 2) 2. AGFOR 204 3. Basic Social Sciences/ Humanities (★3) (See Note 3)	1. Free Elective (★3)		1. Basic Ecological Principles (★3) (See Note 4) 2. ENCS 201 3. ENCS 203 4. ENCS 204 5. ENCS 260 6. SOILS 210	
Year 3 ★30	1. One of AG EC 323, ORGA 301, 311, 321	1. Free Electives (★6)		1. INT D 365 or 369	1. Areas of Concentration (★6) (See Note 6) 2. Approved Program Electives (★12) (See Note 6)
Year 4 ★30		1. Free Elective (★3)		1. CAPS 410 2. ENCS 473	1. Areas of Concentration (★6) (See Note 6) 2. Approved Program Electives (★15) (See Note 6)
Land Remediation, Reclamation and Conservation	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★27)	Areas of Concentration Core (★39) Requirements (★12) Approved Program Electives (★ 27)
Refer to Notes 1, 2, 3, 4 and 5					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL (★3) 5. Basic Life Sciences Options (★6) (See Note 1) 6. MATH 113 or 114 7. STAT 151 8. UNIV 100 (★2)		1. Organic Chemistry, Inorganic Chemistry or Physics (★6)		
Year 2 ★30	1. One of AG EC 316, BIOEN 200, MATH 120 (See Note 2) 2. AGFOR 204 3. Basic Social Sciences/ Humanities (★3) (See Note 3)	1. Free Elective (★3)		1. Basic Ecological Principles (★3) (See Note 4) 2. ENCS 201 3. ENCS 203 4. ENCS 204 5. ENCS 260 6. SOILS 210	
Year 3 ★30	1. One of AG EC 323, ORGA 301, 311, 321	1. Free Electives (★6)		1. INT D 365 or 369	1. Approved Program Electives (★12) (See Note 5) 2. One of SOILS 420, 430, 440, 450 3. ENCS 360
Year 4 ★30		1. Free Elective (★3)		1. CAPS 410 2. ENCS 473	1. Approved Program Electives (★15) (See Note 5) 2. Two of ENCS 455, 475, REN R 475, 485
<p>Notes:</p> <p>(1) Basic Life Sciences: BIOL 107 and 108 recommended.</p> <p>(2) AG EC 316 or MATH 120 recommended for Environmental Economics and Policy concentration.</p> <p>(3) Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology, and courses defined by the Faculty of Arts as fine arts.</p> <p>(4) BIOL 208 recommended.</p> <p>(5) Approved Program Electives must be selected with an academic advisor.</p> <p>(6) Independent concentration is intended for clearly defined programs that do not fall within established concentrations. Area of Concentration (★12) and Approved Program Electives (★27) must be selected with an academic advisor and approved by the ENCS Program Committee.</p>					

43.3.8 Required Courses and Sample Course Sequence for BSc Environmental and Conservation Sciences (cont'd)

Wildlife and Rangeland Conservation	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★27)	Areas of Concentration Core (★39) Requirements (★12) Approved Program Electives (★27)
Refer to Notes 1, 2, 3, 4 and 5					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL (★3) 5. Basic Life Sciences Options (★6) (See Note 1) 6. MATH 113 or 114 7. STAT 151 8. UNIV 100 (★2)		1. Organic Chemistry, Inorganic Chemistry, or Physics (★6)		
Year 2 ★30	1. One of AG EC 316 BIOEN 200, MATH 120 (★3) (See Note 2) 2. AGFOR 204 3. Basic Social Sciences/Humanities (★3) (See Note 3)	1. Free Elective (★3)		1. Basic Ecological Principles (★3) (See Note 4) 2. ENCS 201 3. ENCS 203 4. ENCS 204 5. ENCS 260 6. SOILS 210	
Year 3 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)		1. INT D 365 or 369	1. Approved Program Electives (★12) (See Note 5) 2. ENCS 356 3. ENCS 376
Year 4 ★30		1. Free Elective (★3)		1. CAPS 410 2. ENCS 473	1. Approved Program Electives (★15) (See Note 5) 2. ENCS 406 3. One of ENCS 407, 464, 471, 476 or REN R 475
Wildlife Restoration	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★27)	Areas of Concentration Core (★39) Requirements (★12) Approved Program Electives (★27)
Refer to Notes 1, 2, 3, 4, 5 and 6					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL (★3) 5. Basic Life Sciences Options (★6) (See Note 1) 6. MATH 113 or 114 7. STAT 151 8. UNIV 100 (★2)		1. Organic Chemistry, Inorganic Chemistry, or Physics (★6)		
Year 2 ★30	1. One of AG EC 316 BIOEN 200, MATH 120 (See Note 2) 2. AGFOR 204 3. Basic Social Sciences/Humanities (★3) (See Note 3)	1. Free Elective (★3)		1. Basic Ecological Principles (★3) (See Note 4) 2. ENCS 201 3. ENCS 203 4. ENCS 204 5. ENCS 260 6. SOILS 210	
Year 3 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)		1. INT D 365 or 369	1. Approved Program Electives (★12) (See Note 5) 2. AN SC 311 3. NUTR 260
Year 4 ★30		1. Free Elective (★3)		1. CAPS 410 2. ENCS 473	1. ENCS 464 2. AN SC 475 3. Approved Program Electives (★15) (See Note 5)
Notes:					
(1) Basic Life Sciences BIOL 107 and 108 recommended.					
(2) AG EC 316 or MATH 120 recommended for Environmental Economics and Policy concentration.					
(3) Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology, and courses defined by the Faculty of Arts as fine arts.					
(4) BIOL 208 recommended.					
(5) Approved Program Electives must be selected with an academic advisor.					
(6) To be eligible for the Western College of Veterinary Medicine at the end of Year 2, CHEM 101/102 must be taken as Free Electives, Physics ★3 and BIOL 207 must be taken as Natural Science Options, CHEM 161 and 163 must comprise the Natural Science Core, an additional ★3 of Physics should be taken instead of BIOEN 200, and BIOCH 203/205 or PL SC 331 and AN SC 391 must be taken as Approved Program Electives.					

(2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 2 §43.3.8.

(2) The program is offered jointly by the Faculty of Agriculture, Forestry and Home Economics and the Faculty of Business. While it is administered in the Faculty of Agriculture, Forestry and Home Economics, the program is managed by an interdisciplinary committee with representation from both faculties. See §15.1.3 for admission and recommended courses in the first year of studies.

43.4 The Degree of BSc in Forest Business Management

43.4.1 General Information

(1) The objective of this program is to develop graduates who possess both the abilities required of foresters and the abilities required of business professionals. Specifically, graduates should appreciate the need to manage forested areas with due concern for all resources and have the capability to manage forested areas as integrated ecological entities. In addition, graduates should also have a full understanding of and appreciation for the business management skills needed to manage organizations effectively and efficiently within the forestry industry.

Students may choose one of two specializations; Forestry Business Management and Forest Resource Business Management. Both specializations provide the background for a career in forestry, with government or in private sector organizations. The Forestry Business Management specialization prepares students for careers as professional foresters, and is intended for those individuals who expect to choose careers that focus on forest practices, but that also demand specialized knowledge in business management practices. Students graduating from this specialization will be able to apply to become Registered Professional Foresters. In contrast, the Forestry Resource Business Management specialization is more flexible in structure and is intended for those individuals who will choose careers that focus on business management, but that also require special expertise related to forestry products and processes. Students graduating from this specialization are not automatically eligible to apply for Registered Professional Forester status. Graduates from both specializations are prepared to enter the work force directly, or proceed to a program of graduate study. In either case, the graduates will be able professionals who will enhance the competitive strength of the Alberta and Canadian economies.

Students in the BSc in Forest Business Management program are provided with the analytical, scientific and broad educational foundations upon which to build the business and forestry components of their field. The forestry component for both specializations includes courses in areas such as ecology, engineering and conservation. Those students choosing the Forestry Business Management specialization complete additional prescribed coursework in areas such as entomology, forestry engineering, forest fire management, plant physiology and silviculture. This specialization prepares students for careers as registered professional foresters and is designed for individuals for whom professional certification is important.

In contrast, the Forest Resource Business Management specialization is a more flexible program. This flexibility is provided through approved program electives and additional business electives. These electives allow students to develop an emphasis in certain aspects of forest resource management or business management within their program and is designed for individuals who desire a more open structure for their studies.

The program core for both specializations also includes four one-week field camps (FOR 101, 302, 303 and 304) that provide training in technical aspects of forestry. FOR 101 should be taken in the student's first year (or in the student's initial year in the BSc in Forest Business Management program) just prior to the start of regular classes. FOR 302, 303 and 304 are taken in the spring between second and third years.

The business management component of this degree program consists of introductory and advanced courses in business including accounting, finance, marketing, and human resources. Each student in the program is expected, through a capstone course, to integrate knowledge from forestry-related sciences with the business management disciplines.

43.4.2 Required Courses and Sample Course Sequence for BSc Forest Business Management

Forestry Business Management	Faculty Common Core (★35)	Free Electives in or outside the Faculty (★9)	Supporting Courses (★3)	Business Courses (★15)	Technical Courses (★57)	Program Electives (★6) (See Note 2)
Year 1 ★32	1. AGFOR 204 2. BIOL 108 3. REN R 220 4. ENGL (★3) 5. MATH 113 or 114 6. ECON 101 7. ECON 102 8. UNIV 100 (★2)		1. CHEM 161		1. FOR 101 (★0) (See Note 1) 2. REN R 110 3. REN R 120	
Year 2 ★33	1. AG EC 316 2. STAT 151			1. ACCTG 311 2. ACCTG 322	1. FOR 302 (★1) (See Note 1) 2. FOR 303 (★1) (See Note 1) 3. FOR 304 (★1) (See Note 1) 4. FOREN 201 5. SOILS 210 6. FOR 314 7. FOR 210 8. FOR 322 9. REN R 321	
Year 3 ★30	1. AG EC 416 2. ECON 281			1. FIN 301 2. MARK 301 3. ORG A 301	1. FOR 323 2. FOREC 345 3. FOREN 335 4. ENT 280 5. FOR 340	
Year 4 ★30		1. Free Electives (★9)			1. FOREC 473 2. CAPS 423 3. PL SC 385 4. FOREN 355 5. REN R 430	1. Approved Program Electives (★6)

Notes:

(1) FOR 101 should be taken in the student's first year (or in the student's initial year in the BSc Forest Business Management program) just prior to the start of regular classes. Register for FOR 302, 303, 304 as Intersession courses. They must be taken in the spring between second and third years.

(2) For students in the Forestry Business Management specialization, these Approved Program Electives must both be 400-level courses in the Faculty of Business.

(3) For students in the Forest Resource Business Management specialization, ★9 of Approved Program Electives must be courses in the Faculty of Business, of which at least ★6 must be at the 400-level.

43.4.2 Required Courses and Sample Course Sequence for BSc Forest Business Management (cont'd)

Forest Resource Business Management	Faculty Common Core (★35)	Free Electives in or outside the Faculty (★12)	Supporting Courses (★3)	Business Courses (★15)	Technical Courses (★36)	Program Electives (★24) (See Note 3)
Year 1 ★32	1. AGFOR 204 2. BIOL 108 3. REN R 220 4. ENGL (★3) 5. MATH 113 or 114 6. ECON 101 7. ECON 102 8. UNIV 100 (★2)		1. CHEM 161		1. FOR 101 (★0) (See Note 1) 2. REN R 110 3. REN R 120	
Year 2 ★33	1. AG EC 316 2. STAT 151	1. Free Elective (★3)		1. ACCTG 311 2. ACCTG 322	1. FOR 302 (★1) (See Note 1) 2. FOR 303 (★1) (See Note 1) 3. FOR 304 (★1) (See Note 1) 4. FOREN 201 5. SOILS 210 6. FOR 210 7. FOR 322	1. Approved Program Elective (★3)
Year 3 ★30	1. AG EC 416 2. ECON 281			1. FIN 301 2. MARK 301 3. ORG A 301	1. FOREC 345 2. PL SC 385 or ENT 280	1. Approved Program Electives (★9)
Year 4 ★30		1. Free Electives (★9)			1. FOREC 473 2. CAPS 423 3. REN R 430	1. Approved Program Electives (★12)
Notes: (1) FOR 101 should be taken in the student's first year (or in the student's initial year in the BSc Forest Business Management program) just prior to the start of regular classes. Register for FOR 302, 303, 304 as Intersession courses. They must be taken in the spring between second and third years. (2) For students in the Forestry Business Management specialization, these Approved Program Electives must both be 400-level courses in the Faculty of Business. (3) For students in the Forest Resource Business Management specialization, ★9 of Approved Program Electives must be courses in the Faculty of Business, of which at least ★6 must be at the 400-level.						

Agriculture, Forestry and Home Economics Chart 3 (cont'd)

(3) **Required Courses and Sample Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 3, §43.4.2.

43.5 The Degree of BSc in Forestry

43.5.1 General Information

(1) The Faculty offers courses leading to the degree of Bachelor of Science in Forestry. Students may major in either Forest Management or Forest Resources. The program consists of four years of University study with a yearly load of ★30.

The objective of the BSc in Forestry is to develop graduates who appreciate the need to manage forested areas with due concern for all resources and who have the capability and knowledge to manage forested areas as integrated ecological entities.

The field of Forestry embraces topics as diverse as economics, ecology, engineering and conservation. As a consequence, a broad range of career opportunities exist for graduates of the Forestry Program. The Forest Management Major prepares students for careers as Registered Professional Foresters, whereas the Forest Resource Major is designed with greater flexibility to enable students to pursue specific interests in the field of Forestry.

(2) The BSc Forestry program follows the Faculty Core and the Natural Sciences Core. The program core consists of ★33 including four 1-week field camps (FOR 101, 302, 303, and 304). FOR 101 must be taken in the student's first year just prior to the start of regular classes and FOR 302, 303, and 304 are taken in the spring between second and third years. Camp exercises provide training in technical aspects of Forestry, including forest mensuration, engineering, ecology, and silviculture.

All students are required to complete a capstone course (CAPS 431) in Integrated Resources Management. This course will normally be taken in the final year and will focus on the integration of concepts

from a variety of disciplines within the natural and social sciences (including Forest Policy and Natural Resource Economics) and their application to problems and challenges in forest resource management.

(3) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 4, §43.5.4.

43.5.2 Forest Management Major

(1) **General Information:** This major focuses on forest management, which has been defined as "the protection, manipulation and use of the forest, assuring the viability of the living components as well as providing for the economic, social, cultural and spiritual needs of man."

Students graduating from this major will be eligible to become Registered Professional Foresters. The Forest Management Major is intended for persons interested in pursuing careers with Government or Industrial organizations or as consultants, and for whom professional certification is essential. Elective courses can be used to develop enrichment in some particular area, although students desiring more flexibility in course selection may wish to consider the Forest Resources Major.

(2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 4, §43.5.4.

43.5.3 Forest Resources Major

(1) **General Information:** This major is less prescribed than the Forest Management Major. Its emphasis is on forest resources, which have been defined as "any physical or biological components, or cultural values, recognized within a forest." Nearly one third of the units of course weight are electives; this major is intended for those who prefer a more open program than the Forest Management Major.

Completion of this major is appropriate for those who wish to pursue particular interests in forest resources or forest sciences such as grazing, wildlife, hydrology, physiology, ecology, economics, soils, conservation,

43.5.4 Required Courses and Sample Course Sequence for BSc Forestry

Forest Management	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★36)	Major Requirements (★33) Requirements (★21) Approved Program Electives (★12)
Refer to Notes 1, 2, 3, and 4					
Year 1 ★32	1. AGFOR 204 2. BIOL 108 3. REN R 220 4. ENGL (★3) 5. MATH 113 or 114 6. ENCS 201 7. UNIV 100 (★2)		1. ★6 in Organic Chemistry, Inorganic Chemistry, or Physics. CHEM 161 plus one of CHEM 101, 163; PHYS 100, 108. (CHEM 101 recommended.)	1. FOR 101 (★0) (See Note 2) 2. REN R 110 3. REN R 120	
Year 2 ★33	1. AG EC 316 or MATH 120 2. ECON 101 3. ECON 102 4. Basic Social Sciences/ Humanities (★3) (See Note 1) 5. STAT 151			1. FOR 302 (★1) (See Note 2) 2. FOR 303 (★1) (See Note 2) 3. FOR 304 (★1) (See Note 2) 4. FOREN 201 5. SOILS 210 6. FOR 210	1. FOR 314 2. REN R 321
Year 3 ★30	1. One of AG EC 323; ORG A 301, 311, 321			1. FOR 322 2. FOREC 345 3. PL SC 385 4. REN R 430	1. ENT 280 2. FOR 323 3. FOR 340 4. FOREN 335 5. FOREN 355
Year 4 ★30		1. Free Electives (★12)		1. CAPS 431 (See Note 3) 2. FOREC 473 (See Note 3)	1. Approved Program Electives (★12)

Notes:

- (1) Courses from the basic Social Sciences/ Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology, and courses defined by the Faculty of Arts as fine arts.
- (2) FOR 101 must be taken in the student's first year just prior to the start of regular classes. Register for FOR 302, 303, 304 as Intersession courses. They must be taken in the spring between second and third years.
- (3) FOREC 473 and CAPS 431 must be taken concurrently.
- (4) Approved Program Electives must be chosen in consultation with an academic advisor.

Forest Resources	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★36)	Major Requirements (★33) Approved Program Electives (★33)
Refer to Notes 1, 2, 3 and 4					
Year 1 ★32	1. AGFOR 204 2. BIOL 108 3. REN R 220 4. ENGL (★3) 5. MATH 113 or 114 6. ENCS 201 7. UNIV 100 (★2)		1. ★6 in Organic Chemistry, Inorganic Chemistry, or Physics. CHEM 161 plus one of CHEM 101, 163; PHYS 100, 108. (CHEM 101 recommended.)	1. FOR 101 (★0) (See Note 2) 2. REN R 110 3. REN R 120	
Year 2 ★33	1. AG EC 316 or MATH 120 2. ECON 101 3. ECON 102 4. Basic Social Sciences/ Humanities (★3) (See Note 1) 5. STAT 151			1. FOR 302 (★1) (See Note 2) 2. FOR 303 (★1) (See Note 2) 3. FOR 304 (★1) (See Note 2) 4. FOREN 201 5. SOILS 210 6. FOR 210	1. Approved Program Electives (★6) (See Note 4)
Year 3 ★30	1. One of AG EC 323; ORG A 301, 311, 321			1. FOR 322 2. FOREC 345 3. PL SC 385 or ENT 280 4. REN R 430	1. Approved Program Electives (★15) (See Note 4)
Year 4 ★30		1. Free Electives (★12)		1. CAPS 431 (See Note 3) 2. FOREC 473 (See Note 3)	1. Approved Program Electives (★12) (See Note 4)

Notes:

- (1) Courses from the basic Social Sciences/ Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology, and courses defined by the Faculty of Arts as fine arts.
- (2) FOR 101 must be taken in the student's first year just prior to the start of regular classes. Register for FOR 302, 303, 304 as Intersession courses. They must be taken in the spring between second and third years.
- (3) FOREC 473 and CAPS 431 must be taken concurrently.
- (4) Approved Program Electives must be chosen in consultation with an academic advisor.

protection. Graduates will not be eligible to become Registered Professional Foresters.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 4, §33.5.4.

43.6 The Degree of BSc in Human Ecology

43.6.1 General Information

The Faculty of Agriculture, Forestry and Home Economics has restructured its program offerings effective September 1993. Students who are currently registered in programs taught by the Faculty prior to September 1993, and who wish to complete those degrees should consult the Calendar of the year in which they entered the program for degree requirements.

The Faculty offers a program leading to the Degree of Bachelor of Science in Human Ecology. Human Ecology is the interdisciplinary study of the human ecosystem: humans as social, physical, and biological beings in interaction with each other and with their physical, socio-cultural, aesthetic, and biological environments, and with the material and human resources of these environments. Humans and their near environments are viewed as integrated wholes, mutually influencing each other. Human ecology views the near environment as a source of essential resources and as the setting for human behavior and development. Applied aspects of the program provide opportunities for students to learn to apply knowledge and develop skills to meet the need of employers and the community. These include course work in communication and in program planning, implementation, and evaluation. An important part of the program is the practicum (field placement) in the final year of the program.

Three majors are offered within the Human Ecology program: Consumer Studies; Family Studies; and Textiles, Clothing and Culture. Graduates from each of the majors will meet the educational requirements for registration as a Professional Home Economist in the province of Alberta.

43.6.2 Consumer Studies Major

- (1) **General Information:** The Consumer Studies major provides an opportunity for students to become familiar with a variety of theoretical approaches to the study of consumer behavior and to the consideration of current consumer issues and policies.

The objectives of the major are to enable students to gain a multidisciplinary understanding of how consumers behave, why they behave the way they do, and how to influence their behavior through education, marketing, individual counselling, and public policy. Students also will learn how to apply their knowledge to the analysis and management/resolution of current issues and problems faced by Canadian consumers.

Through careful selection of electives, students may design programs that will enable them to pursue careers in consumer education, consumer advocacy, consumer relations, merchandising, or financial counselling and planning.

- (2) **Course Requirements and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 5, §43.6.5.

43.6.3 Family Studies Major

- (1) **General Information:** The Family Studies major is designed for students who wish to pursue careers in the helping professions and/or desire a concentrated study of families. Within this major, family issues are studied with a human ecological approach that addresses the personal, interpersonal, and environmental contexts of families. The primary focus of the major is the integration of knowledge of family units and their environments with professional practice skills.

- (2) **Course Requirements and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 5, §43.6.5.

43.6.4 Textiles, Clothing and Culture

- (1) **General Information:** The Textiles, Clothing and Culture major provides the opportunity to study textiles and clothing as part of material culture and as an important part of people's near environment. Human issues are addressed in a human ecological and global context. The social sciences, physical sciences, and humanities are applied to the study of people's most personal environment: their clothing and shelter. Through choice of suitable options, the program can be designed for a broad university education or as preparation for careers in education, business, extension, and cultural agencies in areas such as textile science, textile and apparel design, textile conservation and curatorship, or consumer affairs.

43.6.5 Required Courses and Sample Course Sequence for BSc Human Ecology

Consumer Studies	Faculty Common Core (★35)	Free Electives in or outside the Faculty (★12)	Social Sciences/ Humanities Common Core (★12)	Program Core (★18)	Major Requirements (★45) Requirements (★21) Approved Program Electives (★24)
Refer to Notes 1 and 2					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL 101 5. ★6 chosen from BIOL 107, 108, 207, 208; CHEM 101, 102, 161, 163 6. UNIV 100 (★2)		1. ★6 chosen from Social Sciences/ Humanities (See Note 1)	1. HECOL 102	
Year 2 ★30	1. AGFOR 204 or HECOL 259 2. One of POL S 316 or SOC 210 3. One of MARK 412, PHIL 265, SOC 315, NS 390, W ST 302	1. Free Elective (★3)	1. ★3 at 200-level or above chosen from Social Sciences/ Humanities (See Note 1)	1. HECOL 238	1. CONS 220 or MARK 422 2. FAM 110 3. MARK 301 4. TCC 150 or 151
Year 3 ★30	1. One of AG EC 323; ORG A 301, 311, 321	1. Free Electives (★6)	1. ★3 at 200-level or above chosen from Social Sciences/ Humanities (See Note 1)	1. HECOL 380	1. CONS 330 2. CONS 340 3. Approved Program Electives ★9 from CONS, FAM, HECOL, NU FS, NUTR, or TCC (See Note 3)
Year 4 ★30		1. Free Elective (★3)		1. HECOL 480 2. HECOL 482	1. CONS 420 or MARK 423 2. CONS 430 3. Approved Program Electives (★12) (See Note 2)

Notes:

- (1) For Consumer Studies and Family Studies Majors courses in the Social Sciences/Humanities Core can be chosen from the following areas: Agricultural Economics, Arts, Business, Education, Geography, Native Studies, Physical Education and Recreation, and Rural Sociology.
 (2) Approved Program Electives must be chosen in consultation with an academic advisor. ★9 of all the Approved Program Electives must be chosen from CONS, FAM, HECOL, NU FS, NUTR, or TCC, or from an approved list of courses consistent with the Human Ecology program.
 (3) Approved Program Electives must be chosen in consultation with an academic advisor.

43.6.5 Required Courses and Sample Course Sequence for BSc Human Ecology (cont'd)

Family Studies	Faculty Common Core (★35)	Free Electives in or outside the Faculty (★12)	Social Sciences/ Humanities Common Core (★12)	Program Core (★18)	Major Requirements (★45) Approved Program Electives (★24) Requirements (★21)
Refer to Notes 1 and 2					
Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL 101 5. ★6 chosen from BIOL 107, 108, 207, 208; CHEM 101, 102, 161, 163; ZOOL 260 6. UNIV 100 (★2)		1. ★3 chosen from Social Sciences/ Humanities (See Note 1)	1. HECOL 102	1. FAM 110
Year 2 ★30	1. AGFOR 204 or HECOL 259 2. One of POL S 316 or SOC 210	1. Free Elective (★3)	1. ★3 chosen from Social Sciences/ Humanities (See Note 1) 2. ★6 at 200-level or above chosen from Social Sciences/ Humanities (See Note 1)	1. HECOL 238	1. FAM 215 2. Approved Program Electives (★6) (See Note 2)
Year 3 ★30	1. One of AG EC 323; ORG A 301, 311, 321 2. One of W ST 302; PHIL 265, 316, 375; SOC 315; NS 390	1. Free Elective (★3)		1. HECOL 380	1. CONS 340 2. FAM 323 3. Approved Program Electives (★12) (See Note 2)
Year 4 ★30		1. Free Electives (★6)		1. HECOL 480 2. HECOL 482 (★6)	1. FAM 410 or 420 2. FAM 411 3. FAM 412 4. Approved Program Electives (★6) (See Note 2)

Notes:

- (1) For Consumer Studies and Family Studies Majors courses in the Social Sciences/Humanities Core can be chosen from the following areas: Agricultural Economics, Arts, Business, Education, Geography, Native Studies, Physical Education and Recreation, and Rural Sociology.
- (2) Approved Program Electives must be chosen in consultation with an academic advisor. ★9 of all the Approved Program Electives must be chosen from CONS, FAM, HECOL, NU FS, NUTR, or TCC, or from an approved list of courses consistent with the Human Ecology program.

Textiles, Clothing, and Culture	Faculty Common Core (★35)	Free Electives in or outside the Faculty (★12)	Social Sciences/ Humanities Common Core (★12)	Program Core (★15-18)	Major Requirements (★45-48) Requirements (★9) Approved TCC Electives (★24-27) (See Note 3) Approved Program Electives (★12)
Refer to Notes 1, 2, 3 and 4					
(See Note 1) Year 1 ★32	1. AGFOR 100 2. ECON 101 3. ECON 102 4. ENGL 101 5. UNIV 100 (★2)		1. ★9 chosen from Social Sciences/ Humanities (See Note 2)	1. HECOL 102	1. TCC 150
Year 2 ★30	1. AGFOR 204 or HECOL 259 2. ★6 chosen from CHEM 101, 102, 161, 163; or courses in Biology, Botany, Genetics, Microbiology, Physics, or Zoology 3. One of POL S 316; STAT 141 or 151; SOC 210		1. ★3 chosen from Social Sciences/ Humanities (See Note 2)	1. HECOL 238	1. TCC 270 2. Approved TCC Electives (★6) 3. Approved Program Elective (★3) (See Note 4)
Year 3 ★30	1. One of AG EC 323; ORG A 301, 311, 321; CONS 340 2. One of W ST 302; INT D 498; PHIL 265, 311; SOC 315; MARK 412; NS 390	1. Free Elective (★3)		1. HECOL 380	1. Approved TCC Electives (★6) 2. Approved TCC Electives (★6) 300-level or above 3. Approved Program Electives (★6) (See Note 4)
Year 4 ★30		1. Free Electives (★9)		1. HECOL 480 2. HECOL 481 (★3) or 482 (★6) (See Note 3)	1. TCC 467 2. Approved TCC Elective (★3) 300-level or above 3. Approved TCC Electives (★3-★6) 400- or 500-level (See Note 3) 4. Approved Program Elective (★3) 300-level or above (See Note 4)

Notes:

- (1) Students are advised to consider the prerequisites for advanced courses when selecting courses
- (2) For Textiles, Clothing and Culture Majors courses in the Social Sciences/Humanities Core can be chosen from SOC 100, 101, 102; ECON 281; PSYCO 104, 105; ANTHR 101, 307; ART H 101, 102, 209; ART 131; or courses in Agricultural Economics, Canadian Studies, Geography, Philosophy, Rural Sociology, and Women's Studies.
- (3) Students who take HECOL 482 should select only ★24 of Approved TCC Electives under Major Requirements.
- (4) Approved Program Electives must be chosen in consultation with an academic advisor.

Students wishing to pursue a career in the apparel industry may choose to spend one term in the third or fourth year of their program at the University of Manitoba. Students choosing this plan should consult the Department Chair.

- (2) **Course Requirements and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 5, §43.6.5.

43.7 The Degree of BSc in Nutrition and Food Sciences

43.7.1 General Information

- (1) The Faculty offers courses leading to the degree of Bachelor of Science in Nutrition and Food Sciences. Three majors are offered: Food Science and Technology, Foods and Nutrition, and Nutrition.

The BSc in Nutrition and Food Sciences follows the Faculty Core and the Natural Sciences Core listed in Agriculture, Forestry and Home Economics Chart 5, §43.6.5. The program core and major requirements (Agriculture, Forestry and Home Economics Chart 5, §43.6.5) extend these common Faculty components with fundamental and advanced nutrition and food science courses. The three majors in the degree program are built on a common degree core and students who wish to do so can readily change majors during the first two years of their program. Before their second year, students should develop their program of study in consultation with an advisor.

- (2) The Food Science and Technology Major meets both the Canadian Institute of Food Science and Technology (CIFST) and the Institute of Food Technologists (IFT) guidelines.

Students from each of the three majors may select courses enabling them to apply for entry into a 12-month post-degree dietetic internship approved by the Dietitians of Canada. It is essential that students consult with an Academic Advisor during their second year to develop a program of study to obtain eligibility for approved General, Clinical, Administrative, and Community Nutrition Internships. Students may also apply for the departments' Coordinated Dietetics Program (CDP) which provides an alternative to the traditional 12-month dietetic internship. In the CDP, academic terms are alternated with internship terms in cooperation with health care facilities throughout the province of Alberta such that a degree and internship can normally be completed in 4.5 years and the individual is eligible for membership in the Dietitians of Canada. Applications to the CDP are accepted during the second academic year.

Dietitians are employed in health care institutions, industry, government services, retail food services, teaching, community clinics, public relations, the media, and in private practice.

Students in the Foods and Nutrition and Nutrition Majors can meet the educational requirements for registration as Professional Home Economists with appropriate electives in Human Ecology.

43.7.2 Food Science and Technology Major

- (1) **General Information:** The focus of this major is on the application of chemistry, microbiology, and engineering to the food systems and technological processes used in food manufacturing, preservation, storage, and distribution.

Graduates of this major may enter the food industry as technical specialists, quality control, or product control managers. Opportunities also exist in government employment as inspectors, laboratory managers, and extension workers; in international development agencies; and in private laboratories providing consultative or technical service to the food industry and food marketing chain.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 6, §43.7.5.

43.7.3 Foods and Nutrition Major

- (1) **General Information:** This major builds on a strong background in basic sciences and emphasizes two fundamental areas: (a) food quality (sensory, physical, chemical, nutritional, safety, and sociocultural/psychological aspects), and (b) human nutrition focusing on the relationships of dietary components and dietary patterns to health and disease. This foods and human nutrition emphasis is integrated with knowledge of management of quality/quantity food service operations, and the behavioral and social sciences.

Graduates of this major are suited for food industry or government positions requiring expertise in the interrelationships of food, human nutrition, and its application to people, as well as careers in health sciences, education, and private practice.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 6, §43.7.5.

43.7.4 Nutrition Major

- (1) **General Information:** Graduates with a Nutrition Major will have a working knowledge of the fundamentals of nutrition. Metabolic processes involved in nutrient utilization during different physiological states and behavioral factors associated with nutrition will be integrated with the underlying physical, chemical, biological, and social sciences.

Additional course work can be obtained in areas such as chemistry, biochemistry, physiology, endocrinology, and metabolic regulation. Students may choose programs emphasizing either animal or human nutrition as areas of concentration.

Students concentrating in human nutrition will be prepared for careers in health sciences, education, private practice, government

43.7.5 Required Courses and Sample Course Sequence for BSc Nutrition and Food Sciences

Food Science and Technology	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences/ Common Core (★6)	Program Core (★15)	Major Requirements (★51) Requirements (★30) Approved Program Electives (★21)
Refer to Note					
Year 1 ★32	1. AGFOR 100 2. AGFOR 204 3. BIOL 107 4. ENGL (★3) 5. MATH 113 or 114 6. MATH 115 7. UNIV 100 (★2)		1. CHEM 101 and 102	1. CHEM 161 and 163	
Year 2 ★30	1. BIOCH 220 2. STAT 151			1. NUTR 303	1. CHEM 211 and 213 2. NU FS 283 3. PHYS 100 or 108 4. NU FS 372 5. NU FS 374 6. BIOL 108
Year 3 ★30	1. ECON 101 2. ECON 102 3. Basic Social Sciences/ Humanities (★3) (See Note)	1. Free Electives (★6)		1. NU FS 361	1. NU FS 312 2. NU FS 353 3. NU FS 454 4. Approved Program Elective (★3)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)		1. CAPS 440	1. Approved Program Electives (★18)

Note: Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.

43.7.5 Required Courses and Sample Course Sequence for BSc Nutrition and Food Sciences (cont'd)

Foods and Nutrition	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences Common Core (★6)	Program Core (★15)	Major Requirements (★51) Requirements (★27) Approved Program Electives (★24)
Refer to Notes 1 and 2					
Year 1 ★32	1. AGFOR 100 2. BIOL 107 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. UNIV 100 (★2)		1. CHEM 101 and 102	1. CHEM 161 and 163	
Year 2 ★30	1. BIOCH 220 2. CMPUT 101 or 114 3. Basic Social Sciences/ Humanities (★3) (See Note 1) 4. STAT 151 5. AGFOR 204			1. NUTR 301 or 303 (See Note 2)	1. NU FS 323 2. NU FS 372 or 373 (See Note 2) 3. NU FS 374 4. AN SC 391
Year 3 ★30		1. Free Electives (★6)		1. NU FS 363	1. NUTR 302 2. NU FS 468 3. PHYSL 252 (★6) 4. Approved Program Electives (★9)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★6)		1. CAPS 440	1. NU FS 461 2. Approved Program Electives (★15)

Notes:

(1) Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.

(2) Students in the Foods and Nutrition Major who select NUTR 301 must take NU FS 373, whereas those who select NUTR 303 must take NU FS 372.

Nutrition	Faculty Common Core (★38)	Free Electives in or outside the Faculty (★12)	Natural Sciences/ Common Core (★6)	Program Core (★15)	Major Requirements (★51) Requirements (★27) Approved Program Electives (★24)
Refer to Note					
Year 1 ★32	1. AGFOR 100 2. AGFOR 204 3. BIOL 107 4. ENGL (★3) 5. MATH 113 or 114 6. UNIV 100 (★2)		1. CHEM 101 and 102	1. CHEM 161 and 163	1. BIOL 207
Year 2 ★30	1. BIOCH 220 2. CMPUT 101 or 114 3. ECON 101 4. STAT 151			1. NU FS 361 or 363 2. NUTR 301	1. AN SC 310 and 311; or PHYSL 210; or ZOOL 241 and 242 2. AN SC 391 3. NU FS 283 or 323 or 373
Year 3 ★30	1. ECON 102 2. Basic Social Sciences/ Humanities (★3) (See Note)	1. Free Elective (★3)			1. NUTR 302 2. ★9 from AN SC 461; BIOCH 410; NUTR 365, 410; NU FS 452, 468, 476, 477, 478, 479 3. Approved Program Electives (★9)
Year 4 ★30	1. One of AG EC 323, ORG A 301, 311, 321	1. Free Electives (★9)		1. CAPS 440	1. Approved Program Electives (★15)

Note: Courses from the basic Social Sciences/Humanities may be selected from Rural Sociology, Family Studies, Human Ecology, Native Studies (except NS 100), Anthropology, Theology, Classics, Comparative and other Literature, Geography (Arts), History, Languages, Linguistics, Philosophy, Political Science, Psychology (Arts), Religious Studies, Sociology and courses defined by the Faculty of Arts as Fine Arts.

Agriculture, Forestry and Home Economics Chart 6 (cont'd)

and health protection agencies, and nutrition development programs. Those concentrating in animal nutrition will be prepared for careers as nutritionists with feed companies, pharmaceutical and chemical supply companies, consulting companies, agricultural production enterprises, or with governments as extension agents, and field service and regulatory personnel.

- (2) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 6, §43.7.5.

43.8 The Degree of BSc in Agricultural/Food**Business Management****43.8.1 General Information**

- (1) The aim of this four-year program leading to the degree of Bachelor of Science in Agricultural/Food Business Management, is to develop graduates with the capability of practising improved management in the agricultural and food industries. Graduates will have developed a strong understanding of business concepts and principles as applied to either the agricultural industry or the food industry, and have a basic knowledge of the technical processes involved.

The program provides the background for a career in an agricultural or food business. Some graduates may choose careers in management, sales or finance in the agricultural or food industry, but will have the ability to interact comfortably with technical specialists and have a good understanding of the products and processes with which they are involved. Others may choose to be scientists and technical specialists, but will have a deeper understanding of business management. Graduates are prepared to enter the workforce directly, or proceed to a program of graduate study. In either case, the graduates will be able professionals who will enhance the competitive strength of the Alberta and Canadian economies.

(2) The program is offered jointly by the Faculty of Agriculture, Forestry and Home Economics and the Faculty of Business. While it is administered in the Faculty of Agriculture, Forestry and Home

Economics, the program is managed by an interdisciplinary committee with representation from both faculties.

Students choose from among three specializations: Agricultural Business Management, Food Processing Business Management, and Food Service Business Management. See §15.1.2 for admission information and recommended courses in the first year of studies.

Students are provided with the analytical, scientific and broad educational foundation upon which to build the business and technical components of their field. Those choosing Agricultural Business Management are challenged with introductory and advanced technical courses in agricultural science including animal, plant or soil sciences. Students interested in Food Business Management may pursue one of two specializations; Food Processing Business Management or Food Service Business Management. Students whose interests lie in food processing will complete technical courses in such areas as food processing, manufacturing, microbiology, and food engineering. Students

43.8.2 Required Courses and Sample Course Sequence for BSc Agricultural/Food Business Management Degree

Agricultural Business Management	Basic Courses (★35)	Free Electives in or outside the Faculty (★15)	Supporting Courses (★9)	Business Courses (★15)	Technical Courses (★15)	Program Electives (★33) (See Notes 1, 2, 3, and 5)
Year 1 ★32	1. AGFOR 204 2. CMPUT (★3) 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. UNIV 100 (★2)	1. Free Elective (★3)	1. One of AGFOR 100; BIOL 208; INT D 369; MGTSC 428 2. Two of BIOL 107; BIOL 108; PL SC 221 or 235			
Year 2 ★30	1. AG EC 316 2. STAT 151	1. Free Electives (★6)		1. ACCTG 311 2. ACCTG 322	1. Three of AG EC (300-level or higher); BIOEN (300-level or higher); AN SC (200-level or higher); ENT 207; PL SC (200-level or higher); SOILS 210	1. AG Elective
Year 3 ★30	1. AG EC 416 2. ECON 281 3. ECON 282	1. Free Elective (★3)		1. FIN 301 2. MARK 301 3. ORG A 301		1. AG Elective 2. AG Elective 3. AG or BUS Elective
Year 4 ★30		1. Free Elective (★3)			1. (★6) 300-level or higher in selected introductory technical courses (Refer to Year 2. Three of AG EC, BIOEN, AN SC, ENT, PL SC, SOILS)	1. AG Elective 2. AG Elective, 400-level 3. AG Elective, 400-level 4. AG or BUS Elective 5. BUS Elective, 400-level 6. BUS Elective, 400-level 7. CAPS 423
Food Processing Business Management	Basic Courses (★35)	Free Electives in or outside the Faculty (★12)	Supporting Courses (★12)	Business Courses (★15)	Technical Courses (★15)	Program Electives (★33) (See Notes 1, 2, 3, and 5)
Year 1 ★32	1. AGFOR 204 2. CMPUT (★3) 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. UNIV 100 (★2)		1. CHEM 161 and 163 2. BIOL 107 or BIOL 108 3. NU FS 100			
Year 2 ★30	1. AG EC 316 2. ECON 281 3. STAT 151	1. Free Elective (★3)		1. ACCTG 311 2. ACCTG 322	1. NU FS 283 2. NU FS 363 3. NU FS 373	1. AG Elective
Year 3 ★30	1. AG EC 416 2. ECON 282	1. Free Elective (★3)		1. FIN 301 2. MARK 301 3. ORG A 301	1. NU FS 353 2. NU FS 454	1. AG Elective 2. AG or BUS Elective
Year 4 ★30		1. Free Electives (★6)				1. AG Elective 2. AG Elective 3. AG Elective, 400-level 4. AG Elective, 400-level 5. AG or BUS Elective 6. BUS Elective, 400-level 7. BUS Elective, 400-level 8. CAPS 423
Notes:						
(1) AG Electives are courses in the Faculty of Agriculture, Forestry, and Home Economics.						
(2) BUS Electives are courses in the Faculty of Business.						
(3) In the Agricultural Business Management Major and Food Processing Major no more than ★15 of the AG Electives can be Social Science courses.						
(4) In the Food Service Major no more than ★12 of the AG Electives can be Social Science courses.						
(5) A list of AG Electives that qualify as Social Science courses may be obtained from an academic advisor.						

43.8.2 Required Courses and Sample Course Sequence for BSc Agricultural/Food Business Management Degree (cont'd)

Food Service Business Management	Basic Courses (★35)	Free Electives in or outside the Faculty (★12)	Supporting Courses (★12)	Business Courses (★15)	Technical Courses (★18)	Program Electives (★30) (See Notes 1, 2, 4, and 5)
Year 1 ★32	1. AGFOR 204 2. CMPUT (★3) 3. ECON 101 4. ECON 102 5. ENGL (★3) 6. MATH 113 or 114 7. UNIV 100 (★2)		1. CHEM 161 and 163 2. BIOL 107 or BIOL 108 3. NU FS 100			
Year 2 ★30	1. AG EC 316 2. ECON 281 3. STAT 151	1 Free Electives (★6)		1. ACCTG 311 2. ACCTG 322	1. NU FS 363 2. NU FS 373 3. NU FS 374	
Year 3 ★30	1. AG EC 416 2. ECON 282	1. Free Elective (★3)		1. FIN 301 2. MARK 301 3. ORG A 301	1. NU FS 323 2. NU FS 461	1. AG Elective 2. AG or BUS Elective
Year 4 ★30		1. Free Elective (★3)			1. NU FS 463	1. AG Elective 2. AG Elective 3. AG Elective, 400-level 4. AG Elective, 400-level 5. AG or BUS Elective 6. BUS Elective, 400-level 7. BUS Elective, 400-level 8. CAPS 423

Notes:

- (1) AG Electives are courses in the Faculty of Agriculture, Forestry, and Home Economics.
(2) BUS Electives are courses in the Faculty of Business.
(3) In the Agricultural Business Management Major and Food Processing Major no more than ★15 of the AG Electives can be Social Science courses.
(4) In the Food Service Major no more than ★12 of the AG Electives can be Social Science courses.
(5) A list of AG Electives that qualify as Social Science courses may be obtained from an academic advisor.

Agriculture, Forestry and Home Economics Chart 7 (cont'd)

interested in food service management will complete technical courses in such areas as food microbiology and chemistry, food quality, food service systems management, and food service facility planning and design. Students in all specializations for this degree program are provided with introductory and advanced courses in business including accounting, finance, marketing, and human resources. Each student in the program is expected, through a capstone course, to integrate knowledge from the agricultural or food sciences with the business management disciplines.

- (3) **Required Courses and Sample Course Sequence:** Refer to Agriculture, Forestry and Home Economics Chart 7, §43.8.2.

43.9 The BSc After Approved Degrees

Holders of previous degrees may qualify for a BSc degree in the Faculty when they have fulfilled all program requirements. Holders of a four-year degree must complete a minimum of ★54 at the University of Alberta with a CGPA of at least 5.0.

43.10 Graduate Studies

Programs leading to advanced degrees at the Masters and Doctorate levels are offered by most Faculty departments. Course programs and thesis projects are arranged in consultation with Faculty members or with the Department's graduate coordinator.

General information about graduate studies with respect to such matters as admissions and fees is provided in the Graduate Programs section of this Calendar. Specific information about requirements and opportunities in a particular field of study may be obtained from the appropriate Department in the Faculty of Agriculture, Forestry and Home Economics.

44 Courses

The Faculty of Agriculture, Forestry and Home Economics courses are listed in §211, Course Listings, under the following subject headings:

- Agricultural Economics (AG EC)
- Agricultural, Food and Nutritional Sciences (AFNS)

- Agriculture and Forestry (AGFOR)
- Animal Science (AN SC)
- Bioresource Engineering (BIOEN)
- Capstone Course (CAPS)
- Consumer Studies (CONS)
- Dairy (DAIRY)
- Environmental and Conservation Sciences (ENCS)
- Family Studies (FAM)
- Forest Economics (FOREC)
- Forest Engineering (FOREN)
- Forest Science (FOR)
- Human Ecology (HECOL)
- Interdisciplinary Courses (INT D)
- Nutrition (NUTR)
- Nutrition and Food Sciences (NU FS)
- Plant Science (PL SC)
- Renewable Resources (REN R)
- Rural Sociology (R SOC)
- Soil Science (SOILS)
- Textiles, Clothing, and Culture (TCC)
- University (UNIV)