

## Agriculture

The following matrix indicates those courses deemed transferable among institutions listed across the top of this page. The numbers on the matrix represent the number of semester hours associated with the course at each institution and which institutions have agreed to transfer the commonly numbered course in each row.

A list of the academic discipline liaisons contacts for each institution are listed at the bottom of this document.

Prefix	Number	Course Title	BSC	DCB	DSU	LRSC	NDSCS	NDSU	VCSU	WSC	NHSC	SBC
AGEC	141	Introduction to Agribusiness Management	2	3		2	1/1			2		3
AGEC	142	Agricultural Accounting			3	3				2		
AGEC	240	Holistic Resources Management								3		
AGEC	242/342	Introduction to Agricultural Management	3	3	3	3	3	3	3	3		
AGEC	244	Introduction to Agricultural Marketing	3	3	3		3	3		3		
AGEC	246	Introduction to Agricultural Finance	3	3	3		3	3		2		
AGEC	275/375	Applied Agricultural Law			3			3		2		
AGRI	241	Farm Management Education	2			3	1					
AGRI	242	Advanced Farm Management Education	2			2	1					
AGRI	275	Introduction to Precision Agriculture					3					
AGRI	285	Precision Agriculture – Systems Software					2					
ANSC	114	Introduction to Animal Sciences	2/1		3	3	3	3		2		3
ANSC	123	Feeds and Feeding	2/1		3	3	3			3		
ANSC	220	Livestock Production	2/1		3		3	3		3		
ANSC	238	Livestock Breeding								2		
ANSC	252	Large Ruminant Production	2				3					
ANSC	260	Introduction to Equine Studies			3		3	2				

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Prefix	Number	Course Title	BSC	DCB	DSU	LRSC	NDSCS	NDSU	VCSU	WSC	NHSC	SBC
PLSC	235	Field Scouting Techniques	2			3	2					
PLSC	235L	Field Scouting Techniques Lab	1				1					
PLSC	265/365	Herbaceous Landscape Plants		4				2				
PLSC	268/368	Plant Propagation		2				3				
PLSC	323	Principles of Weed Science			3			3				
PPTH	256/456	Forest and Shade Tree Pathology		4								
RNG	236/336	Introduction to Range Management	3	4	4		2	3		2		3
SOIL	210	Introduction to Soil Science	2/1	3	4	3	3	3		4		4
SOIL	222/322	Soil Fertility and Fertilizers	2/1		3	3	3	3		3		2
VETS	239/339	Animal Health	3		3							

#### **AGEC 141 Introduction to Agribusiness Management**

This is an introductory course dealing with the economic importance of the agribusiness community and the potential for employment with the agribusiness industry.

#### **AGEC 142 Agricultural Accounting**

An introduction to the preparation of farm records and financial statements for use in business analysis.

#### **AGEC 240 Holistic Resources Management**

Comparison of scientific and holistic thought models as applied to personal, organizational, and biological problem solving and goal setting.

#### **AGEC 242/342 Introduction to Agricultural Management**

Economic and managerial concepts related to farm or agribusiness production process, development of cost data, enterprise analysis, organization, and management of production inputs.

#### **AGEC 244 Introduction to Agricultural Marketing**

A study of the agricultural marketing system to include cash marketing, commodity futures trading, branded products merchandising and the interrelationship of the government and international trade.

**AGEC 246 Introduction to Agricultural Finance**

Introduction to agricultural finance; provides background in farm and agribusiness credit use and evaluation. Discussion of specific financial conditions on farms and in agribusiness.

**AGEC 249 Computerized Farm Record Keeping**

Use of computer systems to initialize, maintain, and summarize farm/ranch financial and production records.

**AGEC 275/375 Applied Agricultural Law**

Study of laws affecting agriculture and agribusiness including property ownership, financial relations, and environmental regulation.

**AGRI 241 Farm Management Education**

BD. Variable one to six credit hours. Repeatable. The Farm Management Education program provides a practical study of the farming business for farm families currently engaged in managing their farms or ranches.

**AGRI 242 Advanced Farm Management Education**

BD. Variable one to four credit hours. Repeatable. Prerequisite: AGRI 291 or departmental approval. This course continues the application of farm management principles for decision making.

**AGRI 275 Introduction to Precision Agriculture**

This course is designed to introduce the student to precision farming applications. The student will understand the historical development of GPS/GIS and learn about current agricultural practice that utilize precision farming including positioning systems, yield monitoring and mapping, soil sampling and analysis, remote sensing, variable rate technology and geographic information systems.

**AGRI 285 Precision Agriculture - Systems Software**

This course introduces various precision farming software in real-world applications. Discussion of how Geographic Information Systems (GIS) can be used to input and store data, assist in the analysis of data and create interpretive maps. It focuses on initial setup of software, data management and evaluation, saving and unloading data cards, processing field data, and compiling prescription application maps.

**ANSC 114 Introduction to Animal Sciences**

General principles of the livestock industry and relationships to humankind.

**ANSC 123 Feeds and Feeding**

Principles of feeding livestock including digestive systems, nutrient requirements, nutrient characteristics, and sources used in the formulation of balanced rations.

**ANSC 220 Livestock Production**

General production and management of major meat animal species. Topics include production systems, feeding, facilities, health, economics, and marketing.

**ANSC 231/331 Livestock Selection**

Visual and performance evaluation of breeding and slaughter classes of the major meat producing livestock.

**ANSC 238 Livestock Breeding**

The anatomy and physiology of the reproductive systems of farm animals, management practices related to breeding livestock, genetics, and performance testing programs.

**ANSC 252 Large Ruminant Production**

Large ruminant production will explore common production practices of beef and dairy in the upper Midwest. A focus of the class will be making production decisions based on profitability and efficiency.

**ANSC 260 Introduction to Equine Studies**

A review and evolution, historical roles of the horse, breeds, and the modern-day equine industry. Introduction to anatomy, physiology, selection, nutrition, health care, and stable design/management.

**ARSC 210 Introduction to Equine Assisted Services**

Gain a comprehensive understanding of the fields of Equine Assisted Services and its applications within education, facilitation, coaching, and therapy fields.

**ARSC 310 Principles of Equine Assisted Services**

Gain a comprehensive understanding of the Equine Assisted Services and its applications within education, facilitation, coaching, and therapy fields. Offers hands on teaching hours critical to completion of the PATH INTL, CTRI Certification process.

**ARSC 360 Equine Nutrition & Care**

Basic equine anatomy & physiology, equine health, nutrition, and care fundamentals while integrating concepts in an applied and practical manner.

**ASM 115 Fundamentals of Agricultural Systems Management**

Overview of agricultural systems management; engines, machinery, structures, electricity, processing, and conservation.

**ASM 125 Fabrication and Construction Technology**

Introduction to materials, methods, and tools used in fabrication, installation, and maintenance of agricultural production and processing facilities.

**ASM 155 Agricultural Welding**

Principles and operation of oxyacetylene, electrode, and wire feed welding. \*(NDSU - IE 335)

**ASM 253 Small Engines**

Principles, maintenance, trouble shooting, and overhaul of small engines. Includes two-stroke and four-stroke cycle engines.

**ASM 254/354 Electricity and Electronic Applications**

Fundamentals and applications of electricity, electronic power distribution, controls, motors, and solid-state electronics.

**ASM 255 Advanced Welding**

Includes use of MIG welder and plasma arc torch; also includes hard surfacing, brazing, welding cast iron, aluminum, stainless and spring steel, and out-of-position welding.

**ASM 273/373 Tractor and Power Units**

Theory and principles of operation, use, maintenance, repair, and selection of tractors and power systems. Includes engines, transmissions, fuel, lubrication, hydraulics, traction, and electrical systems.

**ASM 278/378 Machinery Principles and Management**

Principles of agricultural machinery manufacture, sales, operation, and management. Topics include selection, replacement, operation, application, and maintenance.

**H&CE 241/341 Leadership & Presentation Techniques**

Development of youth leadership professionals in educational settings; methods, principles, and practices in organizing, developing, conducting, and evaluating community-based student organizations and student organizations and student leadership programs.

**H&CE 281/381 Early Experience**

Field-based experience in a middle or high school educational setting. Provides an opportunity to observe and interact with students, teachers, and administrators.

**PAG 115 Introduction to Precision Agriculture**

An introduction to the principles of precision agriculture. Students will receive instruction in GPS, GIS, remote sensing, and data management.

**PAG 215 Mapping of Precision Agriculture Data**

An introduction to mapping data in precision agriculture. Emphasis is placed on zone management, variable rate prescriptions, and basic GIS functions.

Prerequisite: PAG 115

**PAG 276 Data Collection and Management**

This course will experiment with types and methods of data collection of spatial data. The majority of the course will concentrate on datalogging using GPS receivers (various monitors, rugged handheld units, and Ipads), utilizing mobile software and geospatial apps. The course also will include downloading data from the Internet and evaluation and purchase of data from commercial sources. Students will learn data collection processes based on a real world project. They will be responsible for identifying a study area, a question or management issue, and the data needed to answer the question. Students completing this course will demonstrate an understanding of geospatial data collection and gain experience with several different types of GPS receivers and mobile software/apps.

**PAG 286 Advanced Mapping**

This course covers the use of spatial data for recordkeeping, analytical decision making and modeling prescription maps for variable rate applications. Students will use various data sets and apply GIS functions to answer management questions. Determining relationships and establishing patterns in yield and other

cropping factors and interpretation of these patterns and relationships will be a major component of this course. Prerequisite AGRI 276

### **PLSC 110 World Food Crops**

Scientific principles of crop growth, worldwide production, management alternatives, and processing for domestic and international consumption.

### **PLSC 175 Landscape Design**

Introduction to computer generated graphics and design. Further development of design skills for a variety of landscape settings and a more thorough study of landscape construction and maintenance.

### **PLSC 177 Floral Design I**

Acquaints students with the history of floral design, proper care, handling, and identification of fresh cut flowers and dried materials. Use of tools, equipment and supplies used in the industry and application of basic design styles, holiday designs and displays.

### **PLSC 210 Horticulture Science**

Principles of plant classification, structure, function, growth, propagation, culture, and use of horticultural crops. Covers vegetable and fruit production in the home garden, growing flowers and planting flower beds, and landscaping principles and materials.

### **PLSC 219 Introduction to Prairie and Community Forestry**

Introduction to urban and traditional forestry as they apply to the Great Plains region as well as the global forests. History, opportunities and how the basics of forestry interact with wildlife, parks and recreation, horticulture, and the ecology of our planet in general.

### **PLSC 223 Introduction to Weed Science**

Introduction of a basic knowledge of weeds, herbicide groups, the use of pesticides, economic and environmental considerations, personal safety, modes of action and terminology.

### **PLSC 225 Principles of Crop Production**

Principles of field crop production with emphasis on relationships of crops to their climate and production considerations as a means of managing resources and the environment.

### **PLSC 230 Grain and Seed Analysis**

Principles of grain grading and seed analysis in accordance with state and federal regulations and standards, but other crops of regional importance will also be discussed.

### **PLSC 235 Field Scouting Techniques**

The purpose of this course is to provide students the skills necessary for proper pest identification and crop scouting techniques. Information such as crop growth and development, pest life cycles, damage symptoms and economic thresholds will be covered. Communications skills and presentation techniques will also be emphasized.

### **PLSC 235L Field Scouting Techniques Lab**

Field scouting activities will be done in the field at various locations throughout the summer to give the student practical field experience. Prerequisite: PLSC 235

**PLSC 265/365 Herbaceous Landscape Plants**

Production, identification, and uses of annual, perennial, and bulbous ornamentals in home and public landscapes with consideration to insect and disease problems.

**PLSC 268/368 Plant Propagation**

Students learn the principles and practices of seed propagation and of asexual propagation--cuttings, layering division, specialized structures, grafting, budding and micropropagation.

**PLSC 323 Principles of Weed Science**

Introduction to biological, chemical, cultural, and mechanical weed control, characteristics of weeds and their identification, pesticide application and dissipation.

**PPTH 256/456 Forest and Shade Tree Pathology**

Biotic and abiotic sources of tree decline are included, as are some pathogens of forest products. Recognition and treatment techniques will be covered. Emphasis of field diagnostic skills.

**RNG 236/336 Introduction to Range Management**

Principles of range management, range evaluation, and range improvement.

**SOIL 210 Introduction to Soil Science**

Physical, chemical, and biological properties of soils related to use, conservation, and plant growth.

**SOIL 222/322 Soil Fertility and Fertilizers**

Principles of plant nutrition and soil nutrient availability; soil testing and fertilizer recommendations and management. Macronutrient emphasis.

**VETS 239/339 Animal Health**

Principles of animal health; prevention, sanitation, chemotherapy, immunology, disease symptoms, and management.