Luna Community College

General Agriculture Curriculum Profile 2012-2015

General Agriculture

Associate of Applied Science degree

The Associate of Applied Science degree in General Agriculture is an introductory program designed for individuals seeking employment opportunities in the agriculture industry or for transferability to a university. The curriculum includes instruction in technology principles and agricultural operations. Since the program offers students a choice of general education core and electives, it is extremely important for the student to use care in course selection. If the primary goal is to transfer, the student must learn in advance of the particular requirements of the intended school or university. If the primary goal involves occupational skills or personal growth, the student must consult with an LCC advisor before selecting courses.

Degree Requirements - Minimum of 61 Credit Hours

General Education Core	**(33 hours)**
Area I. Communications	**(9 hours)**
ENG111 Freshman Composition I	3 credits
ENG115 Freshman Composition II	3 credits
SPCH111 Public Speaking-or-	3 credits
SPCH112 Interpersonal Communication	3 credits
Area II. Mathematics	**(4 hours)**
MATH116 Intermediate Algebra	4 credits
Area III. Laboratory Science-or-	
Area IV. Social and Behavioral Sciences-or-	
Area V. Humanities and Fine Arts	**(20 hours)**
Program Requirements	**(16 hours)**
AG105 Introduction to Animal Science	3 credits
AG110 Introduction to Agriculture Economics and Business	3 credits
AG205 Agriculture Management Principles	3 credits
AG250 Agriculture Internship	4 credits
AG260 Research Methods in General Agriculture	3 credits
Related Studies	**(3 hours)**
CSA150 Computer Fundamentals	3 credits

Approved Electives **(9 hours)**

AG115	Introduction to Aquaculture	4 credits
BIO127	General Botany	4 credits
BIO142	General Zoology	4 credits
EQU105	Equine Behavioral Practices	3 credits
EQU120	Equine Health and Nutrition	3 credits
EQU140	Equine Anatomy and Physiology I	4 credits
EQU150	Introduction to Horseshoeing and Blacksmithing	3 credits
EQU155	Advanced Horseshoeing and Blacksmithing	3 credits
EQU210	Equine Genetics	3 credits
HRTC105	Garden Maintenance & Design	3 credits
HRTC122	Plant Propagation	3 credits
HRTC131	Soil Management	3 credits
SMET101	Intro to Science, Math, & Engineering Technology	3 credits

AG105: Introduction to Animal Science (3 credits)
This course is an introduction to the field of animal science. Specific topics include: animal nutrition, digestion, feeds, genetics, reproduction, disease, major/minor species, and animal behavior. Other topics include the animal science industry, food safety, and sustainability in agriculture

Learning Outcomes (Tentative)
The student will:

- Identify animal contributions to human needs
- List economically significant beef cattle, sheep, and swine breeds and areas of production
- Identify livestock body conformation and how it relates to function
- Identify life cycles and biotechnological principles of animal production
- Understand basic nutritional needs and feeding practices o scientific livestock production
- Name marketing strategies and market classification of livestock
- Demonstrate and understand animal behavior as it relates to health and performance
- In a group setting, discuss issues affecting confumer awareness to animal welfare, food safety and the environment
- Have reasonable accommodations made to perform all learning objectives regardless of physical and/or learning disabilities
- Collect and calculate data used to ensure scientifically-based management decisions
- Identify cultural contributions and ethnic influences to the animal industry
- Identify career opportunities and requirements for successful employment

AG110: Introduction to Agriculture Economics and Business (3 credits)
This course is designed to give the student an understanding of the theoretical concepts and principles of economics and business as they apply to food and the agriculture industry. Topics of interest include agriculture organization, agribusiness, economic principles, legal issues and public policy.

Learning Outcomes (Tentative)

- Identify the roles business and agriculture perform in society
- Explain the economic impact of profit and competition on business decisions.
- Explore concepts of business ethics and a business impact on the environment
- Understand the principles of owning and operating a business
- Identify the concepts of international trade and effects of globalization on business decisions
- Understand the separate operations in a business including management, marketing, production operations, and accounting and how each relates to the other
- Identify the steps needed to start a business
- Explore future career choices and decisions
- Explain the role and importance of managing personal and business finance, investment, and risk
- Explore concepts needed to successfully operate an agribusiness

AG115: Introduction to Aquaculture (4 credits)
This is an introductory course in aquaculture. Topics include aquaculture production, ecosystems, aquatic organisms, biological factors, life history and taxonomy.

Learning Outcomes
At the end of this course, each student will:

- Have an understanding of the basic principles of aquaculture
- Have an understanding of culture methods for common aquaculture species
- More effectively communicate through scientific writing
- Have a foundation for graduate studies in aquaculture or a career in aquaculture

AG205: Agriculture Management Principles (3 credits)
This course is designed to give the student an understanding of the basic principles of management in agriculture. Topics of interest include problem solving, marketing, communications, operations, personnel, and the management process.

Learning Outcomes (Tentative)

- Illustrate the role of the manager and the decision maker on agriculture today and issues they will be facing.
- Provide an introduction to key concepts needed to effectively manage a agriculture business
- Apply basic economic principles in the planning and decision making process.
- Understand tools useful to the manager in planning and controlling his/her agriculture business such as records, budgeting, break-even analysis and risk management.
- Discuss other concepts and factors which affect a manager's decision-making process and the profitability of a agriculture business.

AG250: Agriculture Internship (4 credits)
This course provides the students with the opportunity to gain practical experience working in the agriculture industry. Internships are unique and negotiated between the student,

employer/organization, and respective faculty/advisor. Students are required to comply with specifications set forth in the individualized cooperative education program training agreement. Student supervision is shared between the specific agency/organization and the faculty/advisor. Prerequisite: Instructor approval.

Learning Outcomes:

- The agriculture advisor, the student and work supervisor will develop, at a minimum, ten learning outcomes to be met during the work experience.

AG260: Research Methods in General Agriculture (3 credits)
This capstone course is an overview of the General Agriculture program. The student will select a research project based on the agriculture curriculum. Topics include principles and methods of research, selection of a research project, analysis, writing process and revisions. The student is required to write an in-depth research paper in consultation with the instructor. The student presents the research paper to a committee of evaluators and makes a final public (oral) presentation. Course also includes comprehensive examination in General Agriculture. Prerequisite: Instructor approval. Only students in their final semester of their final year should enroll in this class.

BIO127: General Botany (4 credits)
General Botany presents basic concepts of plant biology focusing on the plant characteristics, unity, diversity, growth, and reproduction. Students discuss current ideas in agriculture, horticulture, medicine, biotechnology, ecology, conservation, and environmental issues. The course covers the nomenclature, classification, field study, and laboratory identification of common plant families. Laboratory work includes greenhouse and field studies. Prerequisite: BIO105 or BIO110.

Course Objectives: Students will gain a general understanding of hierarchical classification of plants, their uses, and related concepts. Students will come to understand the development of botany as a science and investigate the various types of plants (function and morphology) and their various uses.
Learning Outcomes: upon completion of the course with a grade of "C" (70%) or better, the student will be able to:

- Demonstrate an understanding of plant cells, tissues, and parts including their functions
- Demonstrate an understanding of plant metabolism and reproduction
- Apply the laws of genetics and plant breeding
- Demonstrate an understanding of plant names and classification
- Demonstrate an understanding of the different kingdoms of plants

BIO142: General Zoology (4 credits)
Zoology is the study of the diversity of invertebrate and vertebrate animals. The goals of this course are to examine the evolutionary mechanisms that lead to the diversity of animals, to survey the animal kingdom by comparing the unique structures and functions that are used to classify organisms into major phylogenetic groups, and to gain experience with these organisms

in the laboratory. The laboratory portion of the course includes: examination of representative organisms using slides, specimens and dissections. Prerequisite: BIO105 or BIO110.

Course Objectives: Students will gain a general understanding of hierarchical classification of animals, the evolutionary development of various body plans, and related concepts. Students will come to understand the development of zoology as a science and investigate the various types of animals including phenotypes and genotypes.

Learning Outcomes: upon completion of the course with a grade of "C" (70%) or better, the student will be able to:

- Demonstrate an understanding of animal cells, tissues, and organs including their functions
- Demonstrate an understanding of animal metabolism and reproduction
- Apply the laws of genetics to understand artificial selection
- Demonstrate an understanding of animal scientific names and classification
- Demonstrate an understanding of the different groups within kingdom animalia

CSA150: Computer Fundamentals (3 credits)
This course provides an overview of the basic components and functions of the computer with an emphasis on current business software applications. The course will cover computer operating principles, file management, the Internet, Microsoft Office Suite using Word processing, Excel spreadsheets, Access database, and PowerPoint Presentations. NM Common Course Number: BCIS1113.

Learning Outcomes
COMPETENCIES**:** Upon successful completion of this course, with a minimum of 70%=C (700) or better, the student should:

- Describe basic information technology terminology;
- Identify and use hardware components of IT systems;
- Describe and apply concepts of file management;
- Describe the basic concepts of application and operating systems software;
- Describe and use IT systems for communication (e.g. word processing, presentation software, email, etc.,)
- Describe the concepts of information management, databases, and database management systems;
- Describe the social impact of information technology
- Describe the international impact of IT issues;
- Identify and explain important ethical, security, and privacy issues in information systems;
- Create and use spreadsheets;
- Create and use databases;
- Use internet search engines for research

EQU105: Equine Behavioral Practices (3 credits)

This course familiarizes students with a variety of equine behavioral practices. Topics of interest include an analysis of equine behavior, equine perception, learning and training techniques and behavioral management.

Learning Outcomes:

- The student will identify equine behavioral practices
- The student will analyze specific equine behavior
- The student will describe equine perception
- The student will identify learning and training techniques
- The student will demonstrate equine behavioral management techniques

EQU120: Equine Health and Nutrition (3 credits)
This course will provide an understanding of equine health and nutrition. Topics include maintaining a healthy equine, disease prevention, digestive system, hydration, proteins and fibers, energy and carbohydrates, vitamins and minerals, grains, hay and forage.

Learning Outcomes:

- The student will describe the importance of health and nutrition
- The student will identify disease prevention techniques
- The student will describe the digestive system, hydration, proteins, fibers, energy and carbohydrates
- The student will describe the importance of vitamins, minerals, grains, hay and forage.

EQU140: Equine Anatomy and Physiology I (4 credits)
This course includes the structure and function of the equine. Topics include anatomy of movement and locomotion, biomechanics, internal systems, oral and dental anatomy, digestive system, respiratory and nervous systems, and eye/skin anatomy.

Learning Outcomes:

- The student will describe the structure and function of the equine
- The student will identify internal systems, oral and dental anatomy, digestive system, respiratory and nervous systems.
- The student will describe eye/skin anatomy
- The student will describe biomechanics, and anatomy of movement and locomotion.

EQU150: Introduction to Horseshoeing and Blacksmithing (3 credits)
This course will teach students to become competent farriers. Students complete an in-depth study of hoof, lower leg anatomy and will understand hoof functions and performance qualities. This class will cover general care of horse maintenance and inform students on management operation of the horse and hoof care.

Learning Outcomes:

- The student will describe general core of horse maintenance and management operations
- The student will describe hoof, lower leg anatomy
- The student will identify hoof functions and performance quality

EQU155: Advanced Horseshoeing and Blacksmithing (3 credits)
This class will increase student knowledge and abilities as competent farriers. Students will complete an intense in-depth study of functions and performances qualities, as well as blacksmithing abilities and give students equestrian management skills. The course promotes an intense understanding of farrier applications and blacksmithing techniques. Prerequisite: EQU150.

Learning Outcomes:

- The student will analyze horseshoeing functions and performance
- The student will identify blacksmith functions and responsibilities
- The student will describe equestrian management skills

EQU210: Equine Genetics (3 credits)
This course will provide a basic understanding of equine genetics. Topics of interest include an overview of coat color genetics, equine breeding, equine/parent testing, phenotypes/pedigree and review of medical genetics.

Learning Outcomes:

- The student will summarize equine genetics
- The student will describe coat color genetics
- The student will describe breeding, testing, phenotypes/pedigree and medical review

HRTC105: Garden Maintenance & Design (3 credits)
This course will teach the fundamentals of maintenance and design of a garden. The emphasis will be on tools and techniques for planting, transplanting, pruning, soil preparation, size, texture, model design, plant selection, and basic maintenance functions.

Learning Outcomes:

- The student will describe the fundamentals of maintenance and design of a garden
- The student will identify the tools and techniques for planting, transplanting, pruning an soil preparation.
- The student will describe plant selection, size, texture and model desin

HRTC122: Plant Propagation (3 credits)
This course will cover the fundamentals of plant production with an emphasis on techniques to increase the stock of plants. Plant production topics will include: grafting, layering, root cutting and hybridization. This course includes hands-on-experience.

Learning Outcomes:

- The student will describe the fundamentals of plant production an techniques to increase stock of plants
- The student will demonstrate grafting layering, root cutting and hybridization

HRTC131: Soil Management (3 credits)

This course introduces the fundamentals of soil management. Topics include soil structure, fertility and water usage. Students will learn different strategies to improve the soil.

Learning Outcomes:

- The student will describe the fundamentals of soil management
- The student will demonstrate soil structuring, fertility and water usage
- The student will describe different strategies for improving the soil

SMET101: Intro to Science, Math, & Engineering Technology (3 credits)
This course is designed to develop a better understanding of the learning process within the domain of science, math and engineering technology. The course will use flexible learning strategies and creative problem solving techniques to include critical thinking skills. The ultimate goal of the course is to assist students in successfully meeting the demands of the technology field.

Course Objectives: The objectives of this course include introducing students to the various fields within science and engineering along with exploring the potential careers and ethical issues. The course offers strategies for success in the STEM fields at the community college and beyond.

Learning Outcomes: Upon completion of the course with a "C" or better the student will be able to:

- Select from a variety of problem solving strategies and use them to design potential problem solutions.
- Apply collaborative learning and teamwork skills in class assignments and team projects.
- Identify majors and career opportunities in engineering disciplines and be able to explain academic decisions.
- Identify and describe personal and professional strengths, abilities, and goals.
- Develop and initiate an individualized Academic Achievement Plan (AAP).
- Identify and effectively use LCC campus resources and services.

Assessment

Luna Community College defines assessment as a process that will lead to the improvement of student learning. The process must follow four steps as illustrated below.

LCC Assessment Plan

All course offerings, including degree and certificate programs, at Luna Community College are required to follow the four-step assessment process. They include:

1. A list of expected learning outcomes
2. Assessment tools that directly measure those learning outcomes
3. The results of the data, and
4. How the data will be used to improve student learning

Academic Departments as Luna Community College are required to participate in semester "Improving Student Learning" assessment reporting and Student Learning Outcomes Assessment (SLOA) Committee presentations. Every semester, academic departments focus on specific learning outcomes with a targeted student population. Faculty are selected to participate in SLOA; selected faculty participate in developing assessment methods and procedures for their particular course or courses. The faculty give oral presentations at the end of the semester and information gathered is disseminated among SLOA members, faculty and staff. The purpose is to provide a baseline for future improvements.

Visit our web site at www.luna.edu to review LCC's Improving Student Learning (ISL) reports. LCC also abides by the New Mexico state competencies for general education. 22

LUNA COMMUNITY COLLEGE
Standard "Minimal" Requirements for Course Syllabus

Course	course title and other course information including meeting times, dates, room number, credits, semester, prerequisites and/or co-requisites
Faculty	information about the instructor and his or her contact information (e.g., phone number and email). List time and day of office hours for full time faculty
Course Description	use catalog description
Expectations of Students	What do you expect from your students? For example, description of students' responsibilities in the learning process; how you hope the students will approach the course subject/content; take responsibility for their learning; the amount of study time expected in the course, and suggestions on how to succeed in the course.
Course Learning Outcomes (Competencies)	this section will include a list of skills or techniques students will develop from the course. This list will consists of a minimum of four to six quantifiable statements about what students will be able to do after completing the course.
New Mexico CORE Competencies	If teaching a CORE course, the State HED competencies must be stated (e.g., Communications, Mathematics, Laboratory Science, Social & Behavioral Sciences, Humanities & Fine Arts).
Methods of Measuring Learning Outcomes (Competencies)	What tools are used to measure student success based on the learning outcomes?

Evaluation	Indicate how the student will earn a particular grade, such as information about assignments including types of assignments, nature of exams (e.g., take home, open book, in-class) due dates, grading criteria and so forth.
Course Schedule	Add a tentative schedule indicating the course content that will be covered throughout the course (e.g., eight week or sixteen week schedule).
Policies	Include policies such as attendance, academic responsibilities, late assignments, missed exams, cell phones, etc. Add a statement that indicates: for additional student information, refer to the 2012-2015 Student Handbook
Grading Standard	Refer to page 37 of the LCC 2012-2015 Catalog
Textbook(s)	Name of required textbooks(s) and any recommended materials. Include ISBN number(s)
Important Dates	List important dates such as last day to withdraw from the course, holidays, add/drop, midterm, final exam week, spring break and other important dates.
ADA Statement	Add a statement regarding accommodations for students with disabilities
Syllabus Revisions or Changes	Add a statement that indicates the syllabus is subject to change
Internet Courses (non-proctored)	Use the following statement: LCC will ensure firm student identification for examinations through the use of username and password for non proctored exams. As an on-line student, you are responsible for keeping your username and password secure. Your username and password should not be given out as you are responsible for

all assessment, assignments, and on-line communications. Any academic dishonesty/plagiarism will not be tolerated and is grounds for disciplinary actions. [Please refer to page 6 of the LCC 2012-2015 Catalog]