AGRICULTURE

5056 INTRODUCTION TO AGRICULTURE, FOOD AND NATURAL RESOURCES – (9, 10, 11, 12) Intro to AFNR is a yearlong course that covers all of the industries and sciences related to agriculture. These include animal science, plant science, food science, horticulture, agribusiness management, landscape management, natural resources, leadership development, and career opportunities. This is a highly recommended class for someone interested in agriculture.

5132 ** HORTICULTURE SCIENCE (9, 10, 11, 12) This course may be taken for one semester or the entire year. The first semester of this course is designed to give students a background in the field of horticultural plants and products. Topics covered include: reproduction and propagation of plants, plant growth, growth media, management practices for field and greenhouse production, marketing concepts, production of plants of local interest and pest management. Students participate in a variety of activities to include extensive laboratory work usually in a school greenhouse, leadership development, supervised agricultural experience and learning about career opportunities in the area of horticulture science.

5136 **LANDSCAPE MANAGEMENT I (9, 10, 11, 12) This course may be taken for one semester or the entire year. This course provides the student with an overview of the many career opportunities in the diverse field of landscape management. Students are introduced to the procedures used in the planning and design of a landscape using current technology practices, the principles and procedures of landscape construction, the determination of maintenance schedules, communications and management skills necessary in landscape operations and the care and use of equipment utilized by landscapers.

5070 ADVANCED LIFE SCIENCE: ANIMALS (10, 11, 12) Advanced Life Science, Animals, is a standards-based interdisciplinary science course, geared to college bound and honors level students that integrates biology, chemistry and microbiology in an agricultural context. Students investigate concepts that enable them to understand animal life and animal science as it pertains to agriculture. Through instruction, including laboratory, fieldwork, leadership development, supervised agricultural experience and the exploration of career opportunities, they will recognize concepts associated with animal taxonomy, life at the cellular level, organ systems, genetics, evolution, and ecology, historical and current issues in animal agriculture in the area of advanced life science in animals. This year long course qualifies as a 3rd science credit towards an Academic Honors Diploma. Complete your science credits in a new and exciting way! This course provides excellent preparation for Purdue University's Advanced Credit Examination, which could allow students who excel the opportunity to earn college credit through Purdue University. **AHD and Core 40. Requirement: Successful completion of two of the following - Biology, Chemistry or ICP**

5074 ADVANCED LIFE SCIENCE: PLANTS AND SOILS (10, 11, 12) Advanced Life Science, Plant and Soils, is a standards-based Interdisciplinary science course, geared to college bound and honors level students, that integrates biology, chemistry and earth science in an agricultural context. Students study concepts, principles and theories associated with plants and soils. Students recognize how plants are classified, grown, function and reproduce. Students explore plant genetics and the use of plants by humans. They examine plant evolution and the role of plants in ecology. Students investigate, through laboratory and fieldwork, how plants functions and the influence of soil in plant life. This year long course qualifies as a 3rd science credit towards an Academic Honors Diploma. Learn about how plant life effects everyday life and learn your science credits in a new exciting way at the same time! This course provides excellent preparation for Purdue University's Advanced Credit Examination, which could allow students who excel the opportunity to earn college credit through Purdue University. **AHD and Core 40. Requirement: Successful completion of two of the following - Biology, Chemistry or ICP**

5008 **ANIMAL SCIENCE: SMALL ANIMAL CARE AND MANAGEMENT I &II (9, 10, 11, 12) This course will include knowledge of small animals varying from pets to wild small animals. Students participate in a large variety of activities and laboratory work including real and simulated animal science experiences and projects. All areas that the students study can be applied to both large and small animals. Topics to be addressed include: anatomy and physiology, genetics, reproduction, nutrition, common diseases and parasites, social and political issues related to the industry and management practices for the care and maintenance of animals while incorporating leadership development, supervised agricultural experience and learning about career opportunities in the area of animal science.

5008 ANIMAL SCIENCE: LIVESTOCK PRODUCTION (9, 10, 11, 12) (Offered in alternate year 2018-19) This is a yearlong course that provides students with an overview of the field of animal science. All areas which the students study can be applied to large and small animals. Topics to be addressed include: anatomy and physiology, genetics, reproduction, nutrition, aquaculture, careers in animal science, common diseases and parasites, social and political issues related to the industry, and management practices for the care and maintenance of animals.

5008 *ANIMAL SCIENCE: HORSE PRODUCTION (9, 10, 11, 12) (Offered in alternate year 2019-20) This course provides students with an overview of the field of horse science. Topics addressed include: anatomy and physiology, genetics, reproduction, nutrition, careers in the horse industry, common diseases and parasites, social and political issues related to the industry, and management practices for the care and maintenance of horses.

5088 **AGRICULTURAL POWER STRUCTURE AND TECHNOLOGY (WELDING) (9, 10, 11, 12) This one semester course will focus on oxy-fuel, arc, and wire welding. Topics will also include safety, careers in welding, types of welding, cutting metal, leadership, and supervised agricultural experience.

5088 **AGRICULTURAL POWER STRUCTURE AND TECHNOLOGY (SMALL ENGINES) (9, 10, 11, 12) During this one semester course students will develop an understanding of basic principles of selection, operation, maintenance, and management of small engines. Topics covered will include: safety, small engines, electricity, plumbing, concrete, carpentry, metal technology, and career opportunities in the area of agricultural power, structure, and technology. A final project is required for this course.

5228 SUPERVISED AGRICULTURAL EXPERIENCE (10, 11, 12) This course is designed to provide students with opportunities to gain experience in the agriculture field in which they are interested. Students should experience and apply what is learned in the classroom, laboratory and training site to real-life situations. Students work closely with their agricultural science and business teacher(s), parents and/or employers to get the most out of their SAE program. This course can be offered each year as well as during the summer session. SAE may be offered as a Cooperative Education Program. Curriculum content and competencies should be varied so that school year and summer session experiences are not duplicated. **Requirement – Introduction to Agriculture, Food and Natural Resources**

5180 **NATURAL RESOURCES (9, 10, 11, 12) This course may be taken for one semester or the entire year. Hands-on learning activities in addition to leadership development, supervised agricultural experience and career exploration encourage students to investigate areas of environmental concern. Students are introduced to the following areas of natural resources: soils, the water cycle, air quality, outdoor recreation, forestry, rangelands, wetlands, animal wildlife and safety.

5229 SUSTAINABLE ENERGY ALTERNATIVES (11, 12) Sustainable Energy Alternatives broadens a student's understanding of environmentally friendly energies. In this course students will use a combination of classroom, laboratory, and field experiences to analyze, critique, and design alternative energy systems. Class content and activities center on renewability and sustainability for our planet. Topics covered in this course include the following types of alternative energies: solar, wind, geothermal, biomass and emerging technologies. Leadership development, supervised agricultural experience and career exploration opportunities in the field sustainable energy are also included. **Requirement: Natural Resources or AP Environmental Science.**

Animal Sciences Pathway

Animal Science expands farther than veterinary sciences. Students in the animal science pathway will get hands on experience working with animals. Students will practice veterinary procedures, hear from professionals in the field, and work in a hands-on environment with animals. By taking all animal science courses, students will have a well-rounded understanding of the animal industry.

Careers Related to Animal Sciences:

- ✓ Animal Nutritionist
- ✓ Veterinarian
- ✓ Vet Tech

- ✓ Herd Manager
- ✓ Food/Meat Product Development
- ✓ Feed Sales

- ✓ Zoologist
- ✓ Wildlife Rehabilitation
- ✓ Habitat Specialists

Example Four- Year Course Plan

*This course plan assumes PE credits are earned during the summer or via alternative PE.

Freshman Year

Semester One	Semester Two
English 9	English 9
Algebra	Algebra
Biology	Biology
World History	World History
Fine Arts	Fine Arts
Foreign Language Year 1	Foreign Language Year 1
Introduction to Agriculture, Food, and Natural Resources	Introduction to Agriculture, Food, and Natural Resources

Junior Year

Semester One	Semester Two
English 11	English 11
Algebra II	Algebra II
ALS: Animals – Science Dual Credit	ALS: Animals – Science Dual Credit
Foreign Language Year 3	Foreign Language Year 3
US History	US History
Livestock Production	Elective
Elective	Elective

Sophomore Year

Semester One	Semester Two
English 10	English 10
Geometry	Geometry
Chemistry	Chemistry
Foreign Language Year 2	Foreign Language Year 2
Small Animals I – Dual Credit*	Health and Wellness
Elective	Small Animals II – Dual Credit*
Elective	Elective

Senior Year

Semester One	Semester Two
English 12	English 12
Probability and Statistics	Probability and Statistics
Government	Economics
Supervised Agricultural Experience	Supervised Agricultural Experience
Horse Production	Elective
Elective	Elective
Elective	Elective

Agricultural Powers, Structures, and Technology Pathway

Agricultural Powers, Structures, and Technology expands farther than working on small engines. Students in this pathway will get hands on experience working in a shop setting. Students will practice various types of welding, hear from professionals in the field, and work in a hands-on environment with machinery. By taking all agricultural powers, structures, and technology courses, students will have a well-rounded understanding of the ag mechanics industry.

Careers Related to Agricultural Powers, Structures, and Technology:

- ✓ Welder
- ✓ Agricultural Engineer
- ✓ Contractor/Builder
- ✓ Diesel Technician
- ✓ Farm Supplier
- ✓ GIS Specialist

- ✓ Farm Equipment Technician
- ✓ Land Surveyor
- ✓ Precision Ag Technicians

Example Four-Year Course Plan

*This course plan assumes PE credits are earned during the summer or via alternative PE.

Freshman Year

Semester One	Semester Two
English 9	English 9
Algebra	Algebra
Biology	Biology
World History	World History
Fine Arts	Fine Arts
Foreign Language Year 1	Foreign Language Year 1
Introduction to Agriculture, Food, and Natural Resources	Introduction to Agriculture, Food, and Natural Resources

Sophomore Year

Semester One	Semester Two
English 10	English 10
Geometry	Geometry
Chemistry	Chemistry
Foreign Language Year 2	Foreign Language Year 2
Welding	Health and Wellness
Elective	Ag Mechanics
Elective	Elective

Junior Year

Semester One	Semester Two
English 11	English 11
Algebra II	Algebra II
Welding	Ag Mechanics
Foreign Language Year 3	Foreign Language Year 3
US History	US History
Elective	Elective
Elective	Elective

Senior Year

Semester One	Semester Two
English 12	English 12
Probability and Statistics	Probability and Statistics
Government	Economics
Supervised Agricultural Experience	Supervised Agricultural Experience
Sustainable Energy Alternatives	Elective
Elective	Elective
Elective	Elective

Plant Sciences Pathway

Plant Science expands farther than having a garden. Students in the plant science pathway will get hands on experience working with plants, seeds, and soil. Students will practice managing a greenhouse, hear from professionals in the field, and work in a hands-on environment with plants. By taking all plant science courses, students will have a well-rounded understanding of the plant industry.

Careers Related to Plant Sciences:

- ✓ Botanist
- ✓ Plant Pathologist
- ✓ Landscape Architect
- ✓ Plant Geneticist
- ✓ Environmental Scientist
- ✓ Soil Scientist
- ✓ Agronomist
- ✓ Ecologist
- ✓ Floral Designer

Example Four-Year Course Plan

*This course plan assumes PE credits are earned during the summer or via alternative PE.

Freshman Year

Semester One	Semester Two
English 9	English 9
Algebra	Algebra
Biology	Biology
World History	World History
Fine Arts	Fine Arts
Foreign Language Year 1	Foreign Language Year 1
Introduction to Agriculture, Food, and Natural Resources	Introduction to Agriculture, Food, and Natural Resources

Sophomore Year

Semester One	Semester Two
English 10	English 10
Geometry	Geometry
Chemistry	Chemistry
Foreign Language Year 2	Foreign Language Year 2
Natural Resources	Health and Wellness
Elective	Horticulture
Elective	Elective

Junior Year

Semester One	Semester Two
English 11	English 11
Algebra II	Algebra II
ALS: Plants – Science and Dual Credit	ALS: Plants – Science and Dual Credit
Foreign Language Year 3	Foreign Language Year 3
US History	US History
Sustainable Energy Alternatives	Elective
Elective	Elective

Senior Year

Semester One	Semester Two
English 12	English 12
Probability and Statistics	Probability and Statistics
Government	Economics
Supervised Agricultural Experience	Supervised Agricultural Experience
AP Environmental Science	AP Environmental Science
Landscape Architecture	Elective
Elective	Elective