Agriculture

Overview

Agriculture is a vital component of our local, state, and national economies and offers many exciting employment opportunities. In addition to the production of a wide range of valuable agricultural commodities, the Sacramento region is home to numerous multi-national agricultural corporations and statewide governmental agencies. It is also a center for international agricultural trade and commerce.

Program Maps

Agriculture, General, A.S. Degree (/ccr/main/doc/programs/program-maps/ag-gen-ag-as-degree-ho.pdf)
Agriculture, General, Certificate of Proficiency (/ccr/main/doc/programs/program-maps/ag-gen-ag-cert-ho.pdf)
Plant-Based Nutrition and Sustainable Agriculture, Certificate of Proficiency (/ccr/main/doc/programs/program-maps/nutri-pbn-sa-cert-ho.pdf)

Dean
Nancy Reitz (/about-us/contact-us/faculty-and-staff-directory/nancy-reitz)

Department Chair
Dave Andrews (/about-us/contact-us/faculty-and-staff-directory/dave-andrews)

Career and Academic Community
Agriculture, Food and Natural Resources (/academics/career-and-academic-communities/agriculture-food-and-natural-resources)

Phone
(916) 691-7391

Email
ReitzN@crc.losrios.edu (mailto:ReitzN@crc.losrios.edu)

Associate Degree

A.S. in General Agriculture

Agriculture is a vital component of our local, state, and national economies and offers many exciting employment opportunities. In addition to the production of a wide range of valuable agricultural commodities, the Sacramento region is home to numerous multi-national agricultural corporations and statewide governmental agencies. It is also a center for international agricultural trade and commerce. This program is designed for students majoring in Agriculture while also allowing the student to select courses that fit his/her individual needs and desires.

As a General Agriculture major, you will:

* Study a general agriculture curriculum representing all of the departments of the Cosumnes River College agriculture program including: agriculture business, horticulture, welding, veterinary technology and plant science.
* Develop your leadership and communication skills.
* Identify the agricultural career you are most interested in and build a course of study to better qualify you for a profession.

HIGHLIGHTS

* As the only community college agriculture program in the Sacramento region, the CRC General Agriculture program provides an excellent opportunity for individuals who wish to pursue a career in agriculture and receive a General Agriculture Associate of Science degree.
* The faculty in this program works closely with the five California agricultural degree offering universities to provide a quality program for students interested in agriculture business, management and economics.
* The Sacramento region is fortunate to have some of the best high school agriculture programs in California. The faculty in the CRC Ag program works closely with these feeder schools to articulate coursework and facilitate the successful transition of agriculture students from high school to the university.
* Internships in agriculture are available for students interested in work experience opportunities.

NOTE TO TRANSFER STUDENTS: If you are interested in transferring to a four-year college or university to pursue a bachelor's degree in this major, it is critical that you meet with a CRC counselor to select and plan the courses for your major. Schools vary widely in terms of the required preparation. The courses that CRC requires for an Associate's degree in this major may be different from the requirements needed for the Bachelor's degree.

Catalog Date: June 1, 2020

Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGB 310</td>
<td>Agriculture Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>AGB 320</td>
<td>Agriculture Accounting</td>
<td>3</td>
</tr>
<tr>
<td>AGB 321</td>
<td>Agriculture Economics</td>
<td>3</td>
</tr>
</tbody>
</table>
This major requires that you complete all courses in the required program plus one area of concentration.

The General Agriculture Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.

### Student Learning Outcomes

Upon completion of this program, the student will be able to:

- **PSLO 1:** Demonstrate knowledge and hands-on experience in the basic concepts of all aspects of agriculture.
- **PSLO 2:** Demonstrate the ability to logically breakdown aspects of a project/problem and be able to resolve an issue in the agriculture industry.
- **PSLO 3:** Demonstrate independent & group learning expressing effective communication skills, both orally & written.
- **PSLO 4:** Participate in leadership opportunities to develop life-long learning traits.
Career Information

Management; Supervision; Finance; Insurance; Government; Marketing; Distribution; International Trade; Sales and Service; Nursery Management and Operations; Park Maintenance; Landscape Design; Teaching; Communication; Contracting & Maintenance; Fertilizer & Insecticide Application; Research; Retail/Wholesale; Estimator; Consultant; Government Agency employee; Welding Technician; Inspection; Welding Engineering; Sculpting; Home/Handicraft & Hobby; Construction; Trucking & Automotive

Some positions, however, require a four-year degree for which CRC's program is a good base for transfer.

Certificates of Achievement

General Agriculture Certificate

This program is designed to prepare students for entry level employment in Agriculture.

Catalog Date: June 1, 2020

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGB 300</td>
<td>Introduction to Agriculture Business</td>
<td>3</td>
</tr>
<tr>
<td>AGB 310</td>
<td>Agriculture Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>PLTS 310</td>
<td>Soils, Soil Management, and Plant Nutrition (3)</td>
<td>3</td>
</tr>
<tr>
<td>or HORT 302</td>
<td>Soils, Soil Management, and Plant Nutrition (3)</td>
<td>3</td>
</tr>
<tr>
<td>ANSC 300</td>
<td>Introduction to Animal Science</td>
<td>3</td>
</tr>
<tr>
<td>PLTS 300</td>
<td>Introduction to Plant Science</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Plant-Based Nutrition and Sustainable Agriculture Certificate

The Plant-Based Nutrition and Sustainable Agriculture Certificate Program brings farm-to-fork into the classroom. It provides the science that supports the benefits of whole plant-based foods to the health of the individual as well as the environment. Students will gain knowledge in the function of plant-based foods towards the treatment and prevention of chronic diseases. The program addresses the environmental and social concerns with strategies and principles of sustainable agriculture. Students will master the theories and skills of plant-based food preparation bringing the food to the fork and into everyday food choices.

Catalog Date: June 1, 2020

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTRI 303</td>
<td>Plant-Based Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>NUTRI 331</td>
<td>Plant-Based Food Principles and Preparation</td>
<td>3</td>
</tr>
<tr>
<td>HORT 313</td>
<td>Sustainable Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO 1: Demonstrate independent learning and effective communication skills.
- PSLO 2: Demonstrate responsibility for personal action and choices.
- PSLO 3: Communicate effectively both orally and in writing.
- PSLO 4: Explain the principles of nutrition and its effect on health.
- PSLO 5: Relate the dietary causes of chronic diseases.
- PSLO 6: Evaluate the role of plant-based foods on health and the environment.
- PSLO 7: Demonstrate a fundamental understanding of health behaviors on nutritional and health status.
- PSLO 8: Schematize the effects of personal food choice on health, the environment and public policy.
- PSLO 9: Basic and advanced plant science/horticulture skills development and improvement.
- PSLO 10: Demonstrate and apply the theories of sustainable and organic agriculture.
- PSLO 11: Demonstrate a fundamental understanding of soils, soil development, soil building and preparation and sustainable soil management.
- PSLO 12: Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.
- PSLO 13: Create agriculture design concepts based on sound, sustainable soil management, water conservation, construction and maintenance, and integrated pest management best practices.
- PSLO 14: Effectively and accurately prepare and analyze raw ingredients and prepared foods.
- PSLO 15: Evaluate food through sensory evaluation of texture, taste, color, presentation, smell and umami.
- PSLO 16: Identify optimal cooking procedures/heat transfer to maximize nutrient content as well as the quality of the ingredients and dish as a whole.
- PSLO 17: Analyze quality defects in cooked products and specify possible errors in techniques or ingredient selection.
Mechanized Agriculture Technology (MAT) Courses

MAT 299 Experimental Offering in Mechanized Agriculture Technology

- **Units:** 0.5 - 4
- **Prerequisite:** None.
- **Catalog Date:** June 1, 2020

This course provides an introduction to basic technical skills required throughout the agricultural and industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, plumbing and pipefitting, electric wiring fundamentals, basic carpentry and woodwork, concrete materials, mixes and estimating.

Upon completion of this course, the student will be able to:

- SLO 1: Display safe practices in both the shop and in the field.
- Become aware of shop safety practices when working with ropes, chains, electrical wiring and cold metal work.
- SLO 2: Differentiate the basic understanding of related tools and equipment and their usage.
- Operate and maintain the tools and equipment required to complete the tasks and skills presented in class.
- Demonstrate basic technical skills in all topics as listed in the course outline.
- Design a project using processes, tools and materials related to course content.

MAT 300 Introduction to Agriculture Mechanics

- **Units:** 3
- **Hours:** 36 hours LEC; 54 hours LAB
- **Prerequisite:** None.
- **Transferable:** CSU (effective Summer 2020)
- **Catalog Date:** June 1, 2020

This course provides an introduction to basic technical skills required throughout the agricultural and industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, plumbing and pipefitting, electric wiring fundamentals, basic carpentry and woodwork, concrete materials, mixes and estimating.

Upon completion of this course, the student will be able to:

- SLO 1: Identify and explain the various components and functions of a complete hydraulic system.
- Describe the terms fluid power, hydraulic system, and pneumatic system.
- Describe the theory and practice of compressing and transporting gases.
- Compare the various components and their symbols used in hydraulic and pneumatic systems in order to show how they fit into a schematic diagram.
- SLO 2: Demonstrate and practice proper safety practices in the shop and in the field.
- Become aware of shop safety practices when working with hydraulic and pneumatic systems.

MAT 301 Hydraulic and Pneumatic Power Systems

- **Units:** 3
- **Hours:** 36 hours LEC; 54 hours LAB
- **Prerequisite:** None.
- **Transferable:** CSU (effective Summer 2020)
- **Catalog Date:** June 1, 2020

This is an introduction to the principles of hydraulics applied to farm and light industrial equipment. The course includes a study of the technical language of fluid power, including graphical symbols, industrial standards, components, and maintenance of hydraulic units.

Upon completion of this course, the student will be able to:

- SLO 1: Identify and explain the various components and functions of a complete hydraulic system.
- Describe the terms fluid power, hydraulic system, and pneumatic system.
- Describe the theory and practice of compressing and transporting gases.
- Compare the various components and their symbols used in hydraulic and pneumatic systems in order to show how they fit into a schematic diagram.
- SLO 2: Demonstrate and practice proper safety practices in the shop and in the field.
- Become aware of shop safety practices when working with hydraulic and pneumatic systems.

Career Information

In restaurants, food service facilities, farms, urban farms, sustainable/organic farms, school garden, health education. Some of these career options may require more than the certificate and two years of college study. Classes beyond the associate degree may be required to fulfill some career options or for preparation for transfer to a university program.

Student Learning Outcomes

In restaurants, food service facilities, farms, urban farms, sustainable/organic farms, school garden, health education. Some of these career options may require more than the certificate and two years of college study. Classes beyond the associate degree may be required to fulfill some career options or for preparation for transfer to a university program.
Technology

Units: 0.5 - 4
Prerequisite: None.
Catalog Date: June 1, 2020

Faculty

Howard Lewis
Agriculture Professor

Office: CRC Main, WINN, 215J
Email: lewish@crc.losrios.edu
Phone: (916) 691-7614
Web: Howard Lewis's Profile Page (/about-us/contact-us/faculty-and-staff-directory/howard-lewis)