Russellville High School

Agriscience Education
Plant Systems Program

Course Syllabus
for
Greenhouse Production

Instructor – Mr. Nichols

07/24/17

Course Description

Greenhouse Production and Management is a one-credit course related to the production of greenhouse crops. Topics include career opportunities, safety, plant propagation, growing media, plant identification, greenhouse production, pest control, business management, and equipment and facilities. The hands-on approach to learning is a key component in this course.

Content standards for this course are not intended to serve as the entire curriculum. Teachers are encouraged to expand the curriculum beyond the limits of these content standards to accommodate specific community interests and utilize local resources. This course encourages critical thinking, use of the scientific method, integration of technology, development of student leadership skills, and application of knowledge and skills related to practical questions and problems. Safety concepts are integrated into instruction to the maximum extent possible.

Career and technical student organizations are integral, co-curricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

Course Goals

This course encourages critical thinking skills, use of the scientific method, integration of technology, development of student leadership skills, and application of knowledge and skills related to practical questions/problems. Safe field and laboratory investigations should be used in instruction to maximum extent possible to illustrate scientific concepts and principles and to support inquiry instruction.

This course emphasizes SAEP and FFA opportunities that develop students' potential for premier leadership, personal growth, and career success.

Career Technical Student Organization (CTSO): FFA

FFA is a dynamic youth organization that is an intra-curricular component of an agriscience program. FFA offers a variety of opportunities for members to get involved through leadership conferences, scholarship opportunities, and competitive events. The FFA Mission is to make a positive difference in the lives of young people by developing their potential for premier leadership, personal growth, and career success through agriscience education. To find out more about FFA, please visit www.alabamaffa.org or www.ffa.org.

Prerequisites

None

Essential Questions

1. What are the requirements for operating a quality greenhouse business?
2. What are some career opportunities associated with greenhouse management?
3. What are the tools and equipment needed to maintain a greenhouse operation?
4. What are the properties of greenhouse growing media and how can it be amended?
5. What is the correct procedure for using pesticides in the greenhouse production industry?
6. What criteria should a student need to discuss the role of plants?
7. What criteria should students use when selecting and planting flowers and vegetables?
8. What are the methods and techniques for propagating plants?
9. What are some safety considerations and procedures for greenhouse management?

Credit

One Carnegie Unit

Student Fees

$25.00

Evaluation/Assessment

Student grades will be based on a variety of daily exercises averaged with their test scores on the individual units of instruction. Forty percent of the final grade per grading period (9 weeks) will be based on daily work to insure that students will have ample opportunity to maintain adequate course grades. Fifty percent of the grade will be based on test grades. Daily work will include but not be limited to objective exercises, class participation, group work, shop/lab projects, and other forms of assessment that promote higher order thinking skills. Ten percent of the final grade per grading period will be based on employability skills. Semester grades will be calculated according to the method approved by school administration which will include mid-term and final exam scores.

Grading Method:

Nine Weeks' Grade:

A. 10% Employability Skills
B. 40% Daily Work
C. 50% Tests

10% Employability Skills:

On the job, it is so important for you to be organized, to be able to follow directions, to be at work on time, to have good attendance, to keep neat work areas, and to maintain professional behavior. In an effort to help build these characteristics in each agriscience student, part of every nine weeks' grade will be "Employability Skills". Everyone begins each nine weeks with a grade of 100 for Employability Skills. It is so easy to keep the 100 and let this portion of your total grade help your average; or, you can lose points from this part of your grade and hurt your average for the following reasons:

1. Unexcused Absence from class = -2 points per violation
2. Tardy to class = -2 points per violation
3. Coming to class without proper supplies = -2 points per violation
4. Failure to clean up your work area and leave it neat = -2 points per violation
   (Chair pushed under table, Paper/Trash removed from table, Clean-up from shop projects)
5. Not remaining seated in assigned seat until the bell rings and do not stand at the door = -5 points per violation
6. Any disorderly conduct that interferes with our classwork = -2 points per violation
7. Not wearing all required safety equipment (PPE) = -3 points per violation
8. Returning to classroom from assigned lab area without permission = -5 points per violation
9. Repeated misbehavior will result in a **zero** employability grade

RHS Grading Scale

A = 90-100
B = 80-89
C = 70-79
F = 69 and below

Culminating Product(s)

The greenhouse production class will start plants from seeds, grow out plugs, learn to manage these in a greenhouse environment, and then will learn business skills while selling our finished product to the public during the month of April and into May.

1. Students will participate in Career Development Events and Personal S.A.E.
2. Students will design a safety program for working in the horticultural industry.
3. Students will design a schedule for applying plant growth regulators on the athletic field(s).
4. Students will design a schedule for applying fertilizer on the athletic fields according to soil test.
5. Students will make scale models of different greenhouse designs.
6. Students prepare a greenhouse and nursery crop production schedule.
7. Students can make an arboretum on campus for the school and community.
8. Students will outline a pest control program, which shall include biological control and include the point of chemical control.
9. Students will develop and draw to scale a vegetable garden plan to include proper plant and site selection.
10. Students will prepare PowerPoint presentations to explain the types of automated systems used in commercial greenhouses.

Available Student Industry Credential(s)

1. Landscape Management = CRI
2. Urban Forestry = CRI
3. Alabama Hunter Education Certification =Stackable credential

For More Information
on the Agriscience Program at Russellville
High School Contact:

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256-331-2110

Natalie Bendall
Career/Technical Coordinator
256-331-2112 or EXT. 1302

No person shall be denied employment, be excluded from participation, be denied the benefits of, or subjected to discrimination in any program or activity on the basis of race, color, disability, sex, religion, national origin, or age by the Russellville City School System. Equal access shall be available to the Boy Scouts and other designated youth groups. The Superintendent, Heath Grimes, has been designated as the person coordinating the Russellville City Schools' effort to implement this non-discriminatory policy. If there are questions or concerns, contact him by phone at 331-2000, by e-mail at heath.grimes@rcs.k12.al.us ,or in writing at 1945 Waterloo Road, Russellville, AL 35653.

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Greenhouse Production and Management

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Career Opportunities

Students will:

1. Describe careers in the greenhouse production and management industry.

Safety

2. Describe safety precautions related to the greenhouse production and management industry.

Plant Propagation

3. Demonstrate propagation methods for greenhouse plants.

4. Practice seed germination techniques in greenhouse operations.

Growing Media

5. Adjust greenhouse growing media properties by adding amendments.
    - Adjusting the pH of greenhouse growing media

6. Prepare growing media mixtures for greenhouse plants.

Plant Identification

7. Identify greenhouse plants by common name.

Greenhouse Production

8. Differentiate among environmental factors affecting greenhouse plant growth.
   - Controlling environmental conditions for plant growth in the greenhouse
     Examples: temperature control, ventilation, watering

9. Produce seasonal greenhouse crops.
   Examples: winter—poinsettias
   spring—trumpet lilies

10. Identify common greenhouse plant disorders.
    Examples: root rot, insect damage, fungus

11. Select types of fertilizers and methods of application used in greenhouse production.

Greenhouse Pest Control

12. Apply pesticides to greenhouse crops.
    - Identifying safety and first aid precautions in greenhouse management
    - Using correct pesticides for intended target in greenhouse management
    - Disposing of containers and leftover pesticide mixtures according to Environmental Protection Agency (EPA) standards

Business Management

13. Select quality greenhouse plants for marketing.

14. Demonstrate managerial skills for successfully operating a greenhouse business.

Greenhouse Equipment and Facilities

15. Maintain greenhouse facilities.

16. Maintain equipment used in greenhouse operations.