**AUBURN UNIVERSITY**

**SYLLABUS**

**Instructor: Dr. Brock Nolin**

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**1. Course Number:** CTCT 7100/7106

**Course Title:** Teaching Mechanical Technology

**Credit Hours:** 3 semester hours

**Prerequisites:** CTCT 5050/5053 or CTCT 6050/6056 or departmental approval

**Corequisites:**  None

**2. Date Syllabus Prepared:** Modified June 2017

**3. Texts or Major Resources:** Alabama Course of Study, Agriscience Education.

Equipment List, Agriscience Educator, State Department of Education.

Equipment Manuals supplied with purchased equipment.

**4. Course Description:**

Theory and practice of managing agricultural mechanics laboratories, theories of machine operation, and practice of maintaining laboratory equipment.

**5. Course Objectives:**

After completing this class, students will be able to:

a. relate instructional planning to laboratory management.

b. develop an agricultural mechanics instructional program.

c. schedule an agricultural mechanics laboratory program.

d. organize the laboratory and students for instructional purposes.

e. plan and deliver safety instruction.

f. develop a system for securing and controlling laboratory equipment, tools and supplies.

g. secure, evaluate, and select references for agricultural mechanics instruction.

1. explain actions for which teachers must accept responsibility and liability.
2. describe the principles of operation of laboratory equipment.
3. identify functions of laboratory equipment.
4. identify the nomenclature of laboratory equipment.
5. describe and perform maintenance practices for laboratory tools and equipment.

**6. Course Content and Schedule:**

1. **Course Introduction**
2. Course orientation
3. Course expectations
4. **Instructional Planning for Agricultural Mechanics (Weeks 1 to 3)**
5. Curriculum planning
6. Learning environments
7. Lesson planning
8. Selecting references for agricultural mechanics

**III. Developing the Instructional Program (Weeks 4 and 5)**

1. Developing long-range plans
2. Selecting lesson topics
3. Selecting student activities
4. Program scheduling
5. Student management
6. **Safety Issues in Agricultural Mechanics (Weeks 6 and 7)**
7. Personal safety protection
8. OSHA
9. Establishing a school safety program
10. Teacher responsibility and liability
11. **Planning for Building and Facilities (Weeks 8 to 10)**
12. Determining building needs
13. Environmental control
14. Arranging laboratory equipment
15. Color coding
16. **Laboratory Equipment Maintenance (Weeks 11 to 15)**
17. Planer operation, principles, and maintenance
18. Table saw operation, principles and maintenance
19. Radial arm saw operation, principles and maintenance
20. Jointer operation, principles and maintenance
21. Band saw operation, principles and maintenance
22. Drill press operation, principles and maintenance
23. Grinder operation, principles and maintenance
24. Welder operation, principles and maintenance
25. Portable power tool operation, principles and maintenance

**7. Course Requirements/Evaluation:**

A. Participate in all class discussions and assignments.

1. B. Complete all class assignments
2. C. Complete all laboratory assignments.

**Assignments and due dates.**

1. 1. Develop an outline of a complete agricultural mechanics program that would be designed for one semester or one year. This should include a description of the areas to be covered in the program. Use the current State Course of Study to select the courses to be taught. Develop this course and dates as if you are teaching it in the spring of 2018. Your finished product should resemble this document complete with dates ect. Due week 2 (Sept 3rd)
2. 2. Using the State Equipment list, develop a list of equipment that

will be needed for the above courses. (do not copy and paste the state equipment lists)

1. Due week 3 (Sept 10)
2. 3. Draw a floor plan of the shop/lab and show equipment layout. This may be done in a variety of computer programs. (Do not turn in a paper and pencil drawing, if you use hand drafting tools, areas should be shaded, tools should be marked, safety equipment labeled etc..) Due week 4 (Sept 17)
3. 4. Prepare a list of student activities for each selected course. (I would like a detailed list and approximations for time of actives.) Due week 5 (Sept 24)
4. ex:

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Task | 1. Tools Necessary | 1. Expected Outcome | 1. Time |
| 1. Shop orientation | 1. Notebook and pencil | 1. Students will understand basic shop layout and be knowledgeable of locations of safety equipment. | 1. 2-60min class periods |
| 1. Table Saw Demo | 1. Delta Table Saw | 1. Students will watch instructor rip a 2x6. They will take notes on all aspects of safety and proper operation. | 1. 1-60 min class period |

1. 5. Develop a safety plan. The plan should include lesson plans used for teaching safety, PowerPoint presentations, and a plan for color coding in the shop and for equipment.
2. Due week 6 (Oct 1)
3. 6. Develop a plan for procedures to follow in case of an accident in the shop/lab. See Scenarios page in module. Due week 7 (Oct 8)

\*FALL BREAK Oct 12-13 No Assignments Due

1. 7. View the Liability PPT in the module. Read the Tort Liability Review. Answer the associated questions. Due week 8 (Oct 15)
2. 8. Develop a plan to indicate how you would secure needed equipment, replacement equipment and expendable supplies for each course to be taught. Be sure to identify funding source i.e Perkins, local, state. Due week 9(Oct 22)
3. 9. Develop a tool check out plan for the shop/lab. Should include a sample check out/in sheet. How tool room responsibilities are assigned etc.. Due week 10 (Oct 29)
4. 10. Do required maintenance and repairs on a minimum of three pieces of shop equipment. Explain what is done to each piece of equipment in step by step process. This should be documented by photographs or PPT. Due week 11 (Nov 5)
5. 11. Develop original lesson plans to demonstrate the proper use of stationary and portable power equipment that would be utilized in the shop/lab. These should include Power Point presentations or another media that would be used. Due week 11 (Nov 12)
6. \*\*Nov 20-24, Thanksgiving Break No Assignments Due

12. Dec 3- All makeup work submitted by this date

The final grade for the course will be based on the following:

|  |  |
| --- | --- |
| Assignment 1 | 10pts |
| Assignment 2 | 10pts |
| Assignment 3 | 10pts |
| Assignment 4 | 10pts |
| Assignment 5 | 10pts |
| Assignment 6 | 10pts |
| Assignment 7 | 10pts |
| Assignment 8 | 10pts |
| Assignment 9 | 10pts |
| Assignment 10 | 10pts |
| Assignment 11 | 10pts |
| Total | 110pts |

\*\*\*\*\*Any assignment presented or turned in late will not be accepted.

The following grading scale will be used:

90 – 100% = A

80 - 89.9% = B

70 - 79.9% = C

60 - 69.9% = D

Below 60% = F

**8.** **Class Policy Statements:**

Participation: Students are expected to participate in all class discussions and participate in all exercises. It is the student’s responsibility to contact the instructor if assignment deadlines are not met. Students are responsible for initiating arrangements for missed work.

Attendance/Absences: This is a virtual class.

Unannounced quizzes: There will be no unannounced quizzes.

Accommodations: Students who need accommodations are asked to arrange conference call with the instructor during first week of classes, or as soon as possible if accommodations are needed immediately. Email a copy of your Accommodation Memo and an Instructor Verification Form. If you do not have an Accommodation Memo but need accommodations, make an appointment with the Program for Students with Disabilities at 1244 Haley Center, 844-2096 (V/TT).

Honesty Code: The University Academic Honesty Code and the Student Policy eHandbook Rules and Regulations pertaining to Cheating will apply to this class.

<http://www.auburn.edu/student_info/student_policies/>

Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below:

* Engage in responsible and ethical professional practices
* Contribute to collaborative learning communities
* Demonstrate a commitment to diversity
* Model and nurture intellectual vitality

Distance Learning Students: Unless specific instructions have been given for a designated course, students in distance education courses shall take all closed resource examinations under the supervision of an approved proctor. Examples of approved proctors include a school superintendent, a principal of a high school, or a dean or department head of a college. Proctors shall be verified and exams shall be sent directly to the proctor who will manage the examination in a secure manner, requiring students to present a picture ID.

**9. Justification for Graduate Credit:**

CTCT 7100 (Teaching Mechanical Technology) expands on previous coursework and experiences received in preservice teacher preparation. Students enrolled in this course take a closer look at the theory and principles of power equipment. Students will also develop instructional strategies and plan facilities for safely and efficiently providing safety instruction in laboratories.