1. **Course Number:** CTCT 2100
   **Course Title:** Power Equipment Technology
   **Credit Hours:** 3 semester hours (Lecture 2, Lab 3)
   **Prerequisites:** None
   **Corequisites:** None

2. **Date Syllabus Prepared:** January 2007

3. **Texts or Major Resources:**

4. **Course Description:**
   Application of skills in repair and maintenance of small air-cooled engines and power equipment (machinery) in agriculture.

5. **Course Objectives:**
   Upon completion of this course, students will be able to:
   1. apply the principles of internal combustion engines to the operation, disassembly, re-assembly and operation of small engines. (290-3-3-.24-1.a.4)
   2. distinguish between the operation, principles, and applications of 2 stroke and 4 stroke internal combustion engines in agricultural situations.
   3. describe and apply theories of engine operation for internal combustion engines.
   4. perform routine adjustments and preventive maintenance activities to internal combustion engines and power equipment (machinery). (290-3-3-.24-1.a.4) (290-3-3.24-1.b.4)
   5. diagnose typical internal combustion engine malfunctions.
   6. select and use appropriate tools in internal combustion engine maintenance.

6. **Course Content and Schedule:**
   **I. Course Introduction (week 1)**
   A. Course requirements and assignments
   B. Principles of internal combustion systems

   **II. Principles of Internal Combustion Engine Operation (weeks 2 and 3)**
   A. Safe operation of internal combustion engines
   B. Internal combustion engine components
   C. Two-stroke and four-stroke internal combustion engines

   **III. Theory, Operation, and Principles of Internal Combustion Engine Systems (weeks 4 to 7)**
   A. Theory and operation of compression systems
   B. Theory and operation of fuel systems
   C. Theory and operation of the governor
   D. Theory and operation of the electrical system
   E. Theory and operation of cooling and lubrication systems
   F. Theory and operation of hydraulic systems

   **IV. Servicing Internal Combustion Engines and Power Equipment (Machinery) (weeks 8 to 13)**
   A. Preventive maintenance procedures
   B. Fuel system service
   C. Ignition system service
   D. Engine inspection, disassembly and cylinder reconditioning
   E. Piston and piston ring service
   F. Rod, bearing, crankshaft, valve, and camshaft service

   **V. Agricultural Applications of Internal Combustion Engines (weeks 14 and 15)**
   A. Lawn equipment
   B. Lawn and garden tractors

   **Final Examination in Week 16**
7. **Course Requirements/Evaluation:**

A. Attend all class sessions and participate in all class discussions and lab exercises.
B. Complete a mid-term examination.
C. Complete a comprehensive final examination.
D. Complete all laboratory exercises.

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

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Mid-term examination</td>
<td>15%</td>
</tr>
<tr>
<td>Comprehensive final examination</td>
<td>25%</td>
</tr>
<tr>
<td>Laboratory exercises and assignments</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Any assignment completed late will be penalized 10% for each class period that it is late. Late assignments completed late after two class meetings 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:** Attendance is required at each class meeting. If an exam is missed, a make-up exam will be given only for University-approved excuses as outlined in the Tiger Cub. Arrangement to take the make-up exam must be made in advance. Students who miss an exam because of illness need a doctor’s statement for verification of sickness and should clear the absence with the instructor the day they return to class. Other unavoidable absences from campus must be documented and cleared with the instructor in advance.

**Unannounced quizzes:** There will be no unannounced quizzes.

**Accommodations:** Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternative time can be arranged. To set up this meeting, please contact me by e-mail. Bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. 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 Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

**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