

# RESEARCH AND EXPERIMENTATION in TECHNOLOGICAL STUDIES

*ETES 5070/7070*

*Spring 2002*

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**Office Hours:** By Appointment  
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**Textbook:** *Design and Problem Solving in Technology* by Hutchinson & Karsnitz, Delmar Publishing, ISBN 0 8273-5244-1

## **Course Description:**

This course will address the cognitive and applied approaches to solving technological problems. Study efforts will be undertaken by individual students and/or small groups of students to pursue new knowledge or to solve a specific technological problem. Experiences will range from research strategies to laboratory experimentation to design and developments of prototypes or working models. Special attention will be given to the development and implementation of a realistic problem solving module agenda for the technology education curriculum.

## **Course Objectives:**

Upon completion of this course you should be able to:

1. Identify and define a technological problem (i.e., environmental, production, transportation, communication, societal)
2. Solve technological problems using a research and experimentation process common to the process of a technologist (i.e., identify problem, state hypothesis, establish research criteria, collect data, analyze data, test hypothesis, make recommendations)
3. Synthesize knowledge and be able to formulate it into a report or use it in solving a defined problem
4. Record and log experimental or design data for use in the documentation of the research and experimentation process
5. Develop a schedule of a plan that will be used in the pursuit of the research and experimentation process to solve identified problems
6. Evaluate the research and experimentation solutions that have been used in the solution of technological problems
7. Research and develop experimental activities that can be used in a technology education classroom
8. Develop a course portfolio that supports and references all aspects of the research and experimentation process used in technology education and in this course
9. Apply research and experimentation strategies to solve for a specific community/societal need that is external and independent of the classroom

**Course Requirements:**

1.	R&E Alternatives	5 points
2.	Development of <b>Three</b> Experimentation Activities	45 points
3.	Research & Design Module	15 points
3.	Development of <i>ORIGINAL</i> R&E Activity	15 points
4.	Community Learning R&E Activity	15 points
5.	Course Portfolio	5 points
	<b>TOTAL</b>	<b>100 points</b>
6.	Graduate Student Supplemental	15 points

**Laboratory Sessions:** A number of lab experiments/activities will be assigned during the semester. Due dates will be specified for each experiment/activity. Each student/student group is responsible

for accomplishing these experiments/activities during open lab times. Make sure you keep up with your laboratory work.

**Lab Fees:** Lab fee for this class will be \$10.00, make checks payable to: UGA. Payment is to be made to the instructor within the first three weeks of the term.

**Evaluation:****Grading Percentages**

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or below

**Attendance/Participation:**

Attendance is crucial especially considering the density of facts, concepts, principles, and procedures covered in each class. Missing even one class could set you seriously behind. Realize that if you are absent, even for valid reasons, you are responsible for the material and assignments discussed in each and every class. In addition, I expect each participant to take an active role by contributing and sharing thoughts and ideas, taking initiative, and seeking to help other members of the class. Each participant is expected to remain open to new ideas and different points of view.

Attendance records will be recorded at the beginning and at the conclusion of each class meeting. *Your grade in this class will be dropped 3% points for two (2) unexcused absence and you will be removed from the class role after three (3) unexcused absences. In addition, tardiness will result in a 3% point reduction in grade if more than three (3) unexcused tardy attendances occur.*

**Late Assignments**

I expect assignments to be completed on time. My standard policy regarding assignments is 10% penalty for late assignments turned in within 1 week of the due date and 50% penalty for assignments turned in thereafter until the end of the course (defined as the last regular class session). I use this system even in the event of "excusables," such as minor sicknesses or other unforeseen conflicts. However, any exceptions to this policy are made at my discretion.

**Honesty**

Cheating on class assignments, examinations, or other serious forms of academic activities will result in a grade of an "F" (and a required report to University officials). Persons "borrowing" someone else's work on an assignment will receive a zero on that assignment if it is the first offense. A second offense will be considered a serious form of academic dishonesty. (Borrowee is equally subject to penalties.) Refer to UGA's *A Culture of Honesty: Policies and procedures on academic honesty.*

**Withdrawal/Drop Policy**

Drop policy is as described in the university's undergraduate bulletin, page 45.