

**ECE 493-001**  
**Special Topics: Introduction to Research**  
**Interim Session 2013**

**Instructors:** Susan Burkett; [sburkett@eng.ua.edu](mailto:sburkett@eng.ua.edu); 330 Houser, 348-4378;  
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**Office Hours:** Contact instructors via email for appointments

**Location:** SERC 1014

**Dates, Time:** May 6-10, 2013, 9:00 am – 4:00 pm

**Credits** 1 credit hour, Graded

**Pre-requisite:** None

**Textbook:** None

**Course Description:** This course will introduce STEM (Science, Technology, Engineering, and Mathematics) students to academic research and prepare students to engage in undergraduate research at the University of Alabama or other institutions.

**Course Requirements:** This is an elective class to help students in conducting undergraduate research under faculty supervision. Course work will be assessed using the point value as shown on the next page. The penalty for late assignments will be 10% per day.

**Attendance:** Any student missing class without an authorized university excuse will have two percentage points deducted from the final percentage for every hour of missed class. In addition, students will receive a zero grade for any missed assignments. It is important to be on time. Students that are late for class will receive a deduction of one percentage point from the final percentage for each infraction. Any student missing class with an authorized university excuse will coordinate with the instructors to determine an appropriate time frame and method for completing missed work.

**Course Objectives:** At the end of this course, students will:

- understand the process of academic research and how science is conducted in an academic setting,
- learn about research in a wide variety of STEM disciplines,
- highlight the basic expectations and requirements of the undergraduate researcher when conducting research with a faculty mentor in a professional environment,
- gain a solid foundation in research ethics, both conceptually and in an applied manner,
- find information sources relevant to their discipline/topic of research interest,
- obtain the skills to write scientifically (e.g., literatures reviews, research proposals) and communicate scientific research,
- have knowledge of the career opportunities available to undergraduate researchers.

**Academic Dishonesty:** All cases of cheating will be handled promptly following the University's and College's *Code of Academic Conduct*.

**Disruptive Behavior:** Disruptive behavior in the classroom of any kind will not be tolerated. This includes talking or using cell phones while class is in session.

**Disability Statement:** It is the policy of The University of Alabama to make reasonable accommodations for qualified individuals with disabilities. Please contact the Office of Disability Services at 348-4285 to request disability accommodations. After initial arrangements are made with that office, contact your instructor.

### Course Outline and Grade Breakdown

Grade Category (point total)	Descriptions of the Requirements for each category	Due Date	Point Value
<b>Class Participation (10)</b>	Participation in the class includes, but is not restricted to, class discussions, class activities, group work, etc.	NA	10
<b>Final Project (20)</b>	Prepare a literature review and elevator talk.	May 24	20
<b>Class Assignments (30)</b>	Pre-Assessment	May 6	5
	Research Presentation Reviews	May 6	5
	Library Assignment (6 degrees)	May 7	5
	Interview Reflection	May 8	5
	Post-Assessment	May 10	10
<b>Homework Assignments (40)</b>	Faculty Profile	May 7	5
	Abstract	May 8	5
	Resume	May 8	5
	Reading Primary Literature	May 9	10
	Email	May 9	5
	Data Collection/Poster-Group Project	May 10	10

**Grading Scale:** 90-100% A, 80-89% B, 70-79% C, 60-69% D, 50-59% F

## Schedule, May 6-10, 2013

<b>Monday, May 6, 2013</b>		
9:00 – 9:30	Introduction – Overview of week	Susan Burkett (ECE)
9:30 – 10:15	Pre-assessment (concept inventory)	Susan Burkett
10:30 – 11:15	What is the Scientific Method/Academic Research (45 min)	John Lusth (CS)
11:15 – 12:30	<i>Lunch</i>	
12:30 - 1:00	Ice Breaker	Amy Bickel (UCF)
1:00 - 1:25	Research Presentations (In-class reviews)	Dr. M. Bakker (Chemistry)
1:25 - 1:50		Dr. M. Anderson (CS)
2:00 – 2:50	Preparing an Academic Resume	Gayle Howell (Career Center)
3:00 – 3:30	Resume Preparation	Gayle Howell
3:45 - 4:00	<b>Discuss Homework: Faculty Profiles, Complete Resume</b>	
<b>Tuesday, May 7, 2013</b>		
9:00 – 9:45	Types of Literature and Library Databases <b>Discuss Literature review/Elevator Talk (Final Project)</b>	Susan Burkett
10:00 – 12:00	Library Assignment	Coordinators/Peer mentors
12:00 – 1:00	<i>Lunch</i>	
1:00 – 2:00	Research Literacy: Reading and Writing as a Researcher	Luke Niiler (Writing Center)
2:00 – 2:45	Reading Primary Literature (similar to above) elim or 30 min	Susan Burkett
3:00-3:10	<b>Discuss Homework: Create an abstract, Reading Primary Literature</b>	
3:15 – 3:35	Research Presentations – Tours (Not end of day)	L. Reed (SEC 2322)
3:40 – 4:00		A. Lang (110 Hardaway)
<b>Wednesday, May 8, 2013</b>		
9:00 – 11:00	Research Etiquette: Working with Faculty and Working in a Laboratory	Amy Bickel (UCF)/Susan Burkett/Peer Mentors
11:00 – 11:45	Research Opportunities (15 min)	<i>Susan Burkett</i>
11:45 – 1:00	<i>Lunch</i>	
1:00 – 1:45	How to Find a Mentor (15 min) <b>Discuss Homework: Prepare draft email</b>	John Lusth Peer Mentors
2:00 – 2:45	Interview Techniques Mock Interviews (1.5 hr total)	Gayle Howell
3:00 - 3:30		
3:30 – 4:00	<b>Mock interview reflection assignment</b>	
<b>Thursday, May 9, 2013</b>		
9:30 – 10:00	Research Information Fluency: Data Collection, Publishing, Authorship, and Ethics	Susan Burkett
10:00 – 10:30	Lab Notebooks and Research Assignment	John Lusth
10:30 – 1:00	Data Collection and <i>Lunch</i>	Group Project
1:00 – 2:00	Communicating Research: Creating a Poster	Peer Mentors
2:15-3:15	Seminar: VP for Research Candidate (SERC 1013)	Guest
3:15 – 4:00	Poster Creation <b>Homework: Complete poster</b>	
<b>Friday, May 10, 2013</b>		
9:00 – 10:00	Patents and Intellectual Property	Rick Swatloski (Tech Transfer)
10:00 – 11:00	Preparing for Graduate School	Andy Goodliffe (Grad School)
11:15-12:15	Focus Group (332 HM Comer)	UCF Assessment
12:30-1:00	<i>Lunch provided</i>	
1:15 – 2:00	Poster Reviews	Student Groups
2:00 – 2:30	Post-assessment (concept inventory)	Susan Burkett

