I. COURSE INFORMATION
Time & Place: Monday 7-9:30pm, CS 107
Instructor: Sarah Ives
Office Phone & address: 361.825.2151; CI-358
Email Address: Sarah.Ives@tamucc.edu
Website: sci.tamucc.edu/~sives
Office hours: M, W 3-6pm

II. COURSE DESCRIPTION
This course introduces participants to the theory and practice of teacher-led inquiry within mathematics education. The course prepares teachers to engage in a school-based mathematics education action research project. It is intended for inservice mathematics teachers.

III. PREREQUISITES
Graduate level, consent of the instructor.

IV. TEXTS AND OTHER SUPPLIES
- Additional course readings as assigned

V. STUDENT LEARNING OUTCOMES
At the end of this course, students should be able to:
- Demonstrate an understanding of basic aspects of major mathematics education research
- Identify an area of need in mathematics education, and develop an inquiry-based project proposal
- Design and conduct an action research study or comparable project
- Write a complete research report
- Prepare and deliver a presentation on a mathematical topic while providing constructive feedback to the presentations of peers.

VI. INSTRUCTIONAL METHODS & ACTIVITIES
This course will be taught using lecture, discussion, projects, and class presentations

VII. EVALUATION AND ASSESSMENT
Final course grades will be a weighted as follows:
Attendance and participation 10%
Research Project Proposal 20%
Final Research Report 40%
Oral presentation of research project 30%
Note: in a class like MATH 5390, preparing you to conduct your own action research project, please expect that you will be asked to make revisions to most of your assignments and to re-submit them within a week of receiving feedback. This is normal, and part of the learning process.

**VIII. COURSE SCHEDULE**

<table>
<thead>
<tr>
<th>Wk</th>
<th>Topic</th>
<th>Content</th>
<th>Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview of Action Research</td>
<td>Types of Action Research, Process of Action Research, Informing Practice</td>
<td>Read Mills Chs 1 &amp; 2, decide area of focus</td>
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<tr>
<td>2</td>
<td>Deciding on an Area of Focus</td>
<td>Determining Research questions</td>
<td>Determine Research Question(s)</td>
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<td>3</td>
<td>Literature Review</td>
<td>Survey of relevant research</td>
<td>outline literature review</td>
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<tr>
<td>4</td>
<td>Math Ed Research</td>
<td>Exploring case studies</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; draft of literature review; Read Mills Ch 3 and outline methods</td>
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<tr>
<td>5</td>
<td>Methods of data collection</td>
<td>Techniques - instruments, considerations – validity, generalizability [begin data collection]</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; draft lit review, 1&lt;sup&gt;st&lt;/sup&gt; draft of methods (data collection and analysis)</td>
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<tr>
<td>6</td>
<td>IRB</td>
<td>Process of obtaining IRB approval</td>
<td>write IRB; Finalize proposal paper; begin data collection</td>
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<tr>
<td>7</td>
<td>Readings from Carpenter et al</td>
<td>Further investigation of significant research</td>
<td>Project proposal Due; data collection wk 2</td>
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<tr>
<td>8</td>
<td>Reform Mathematics</td>
<td>Problem Based Learning, Cognitively Guided Instruction, Constructivism</td>
<td>data collection wk 2; Read Mills Ch 6</td>
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<td>9</td>
<td>Data Analysis</td>
<td>Themes, coding, connect to literature</td>
<td>Data analysis</td>
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<td>10</td>
<td>Data Analysis/Findings</td>
<td>Interpreting findings – Implications</td>
<td>Complete data analysis; 1&lt;sup&gt;st&lt;/sup&gt; draft of Findings/Implications</td>
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<td>11</td>
<td>The ‘Action’ in Action Research</td>
<td>Reforming Mathematics Education – turning findings into action</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; draft findings/implications; Read Mills Ch 8</td>
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<td>12</td>
<td>Conclusions</td>
<td>How to conclude an academic paper (significance to field, limitations, further study)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; draft final report – combine proposal, findings, conclusions</td>
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<tr>
<td>13</td>
<td>Sharing and critiquing action research</td>
<td>Constructive feedback on final papers</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; draft of final report; 1&lt;sup&gt;st&lt;/sup&gt; draft of PowerPoint</td>
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<tr>
<td>14</td>
<td>Sharing and critiquing action research</td>
<td>Constructive feedback on final papers and presentations</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; draft of final report; finalize presentations</td>
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<td>15</td>
<td>Sharing and critiquing action research</td>
<td>Practice Presentations</td>
<td>Polish presentation; finalize report</td>
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<tr>
<td>16</td>
<td>Celebrating action research</td>
<td>Final Presentations</td>
<td>Final report due</td>
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IX. CLASS POLICIES

Homework: Written assignments must be either emailed as a word document or typewritten and stapled as specified. Sloppy, unorganized, unstapled, misspelled or poor grammatical work will be penalized. The Writing Center on campus is available for help with written assignments.

Late Homework: Assignments are due at or before the beginning of class. In the case of an excused absence, homework deadlines may be adjusted at the discretion of the instructor.

Help: The best source of help for this course is the people directly involved in this course: your peers or instructor, in class or during office hours. Additional help is available at the Tutoring and Learning Center.

Attendance: Attendance is expected and is reflected in individual and group participation. If you must be absent, it is your responsibility to communicate with the instructor and your group before class or as soon as possible. Email is encouraged, Sarah.Ives@tamucc.edu or call 825-2151 and leave a message.

Academic Integrity/Plagiarism
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a zero grade.

Dropping a Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Friday, 30 March 2012, is the last day to drop a class with an automatic grade of “W” this term.

Classroom/professional behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom.
This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

**Grade Appeals**
As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Website at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

**Disabilities Accommodations**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Driftwood 101.

**Veterans**
If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.