MTE 597.001: Research Techniques for STEM and Education Majors
COURSE SYLLABUS: Summer I 2015

Instructor: Dr. Pamela S. Webster
Office Location: Binnion Hall Room 315
Office Hours: Monday – Thursday: 11am – noon; Monday 2pm – 4pm; by appointment.
Office Phone: 903.886.5950
Office Fax: 903.886.5945
University Email Address: Pamela.Webster@tamuc.edu

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings:

There will not be a textbook for this course. Instead, students will be expected to find journal articles, grant applications, and other supplementary readings to share with the class. In addition, the instructor has specific readings such as .ppt files, journal articles, Math 595 papers that were written by previous students, and university research procedures and policies that will be distributed for students to read and analyze.

Course Description:

This course, Research Techniques for STEM Majors, will focus on Math and Education research topics that are necessary for the person who is pursuing a graduate degree and/or who wishes to work in higher education. Students will explore concepts that are integral to the research process at this level in higher education. Particular areas of study include: Institutional Review Boards (IRBs); topics of Research Conduct (Responsibility and Ethics that are related to research); grant writing for STEM areas; preparation for a Math 595, thesis, or even a dissertation; writing research articles; and other research areas. This course is a Special Topics course and will offer students a unique opportunity to experience some areas of research, such as IRB proceedings, with which students seeking graduate degrees should become familiar. Prerequisite: graduate student status.

Course Content:

Particular areas of study include: Institutional Review Boards (IRBs); topics of Research Conduct (Responsibility and Ethics that are related to research); grant writing for STEM areas; preparation for a Math 595, thesis, or even a dissertation; and other research areas.
Student Learning Outcomes:

This course, Research Techniques for STEM Majors, will focus on Math and Education research topics that are necessary for the person who is pursuing a graduate degree and/or who wishes to work in higher education. Students will explore concepts that are integral to the research process at this level in higher education. Particular areas of study include: Institutional Review Boards (IRBs); topics of Research Conduct (Responsibility and Ethics that are related to research); grant writing for STEM areas; preparation for a Math 595, thesis, or even a dissertation; and other research areas. This course is a Special Topics course and will offer students a unique opportunity to experience some areas of research, such as IRB proceedings, with which students seeking graduate degrees should become familiar. Prerequisite: graduate student status.

Upon completion of this course, the successful student will be able to:

1. Demonstrate an ability of how to properly format a Math 595 paper or thesis, as well as the basic components of a dissertation.
2. Demonstrate an understanding of the Institutional Review Board (IRB) procedure for approving research studies and all that is required of the researcher.
3. Recognize, analyze, describe, and respond to the requirements presented in a grant’s Request For Proposals (RFP).
4. Understand the effects and consequences of ethical and non-ethical behavior in research.
5. Prepare a basic article for publication in a journal.
6. Prepare a grant proposal for submission to a funding agency.

COURSE REQUIREMENTS

Instructional Methods / Activities / Assessments

Instructional Methods: The goal of this course is to develop understanding of various research topics and how they will apply to the students and their futures. We will focus on underlying structures and processes that deal with writing articles and grants. Class will consist of various styles of presentation and interaction, including many in-depth discussions where students will be expected to bring in articles, grants, and other items. You will be active participants. You should come to class ready to participate, both in terms of preparation as assigned and with a positive attitude toward class and colleagues.

Daily Work: Homework will be assigned most class periods. It is extremely important for you to work all homework in order to be prepared for the next class period, the class project, and the final exam. We will also be working on certain supplemental assignments which will often have to be completed as homework. The total number of assignments that are completed and turned in (punctually) by the student, as well as the level of preparedness for the classroom discussions, will be reflected in the Daily Work grade. Late work will not be accepted, no matter what the cause.
**Attendance:** I will be taking roll every class. All students are expected to be present, and attendance will be reflected in your Daily Work grade. If you miss a class, come see me for any missed assignments. **Please do not approach me as I am beginning a class period,** unless it is an emergency, so that we might start ON TIME. Please be in your seat and ready to work when class begins.

**Projects:** There will be at least two projects for this course: one individual and one class project. These projects will vary in their scope and should be completed punctually. In addition, you will be expected to complete certain surveys, reflections, and focus group/interview questions concerning your pre-existing and added knowledge (much like a pre-test/post-test). Various activities will be set up throughout the semester for you and your classmates to work on, often in groups. It is the responsibility of the students to complete these projects, even if they do not complete them during the class time. **Individual project tentative due date: June 25th. Class project tentative due date: July 2nd.**

**Final:** Our final is a comprehensive exam, **given on the last class day.** Students should expect to answer questions concerning all aspects of research, as discussed in class and as discovered through the process of completing projects and reflections during the course of the semester. **Do not expect a makeup exam for the final.**

**Grading Policy:**

<table>
<thead>
<tr>
<th>Section:</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Work</td>
<td>25%</td>
</tr>
<tr>
<td>Projects/Participation in Interviews, Surveys,</td>
<td></td>
</tr>
<tr>
<td>And Other Assessment Materials</td>
<td>50%</td>
</tr>
<tr>
<td>Comprehensive Final</td>
<td>25%</td>
</tr>
</tbody>
</table>

**TECHNOLOGY REQUIREMENTS**

Internet access

Word processing software (Microsoft Word preferred/compatibility required)

Email access is required. Please utilize your A&M-Commerce email address, or make me aware of your alternate email address.

A TI-83 calculator (or above) may be needed for this course.

**COMMUNICATION AND SUPPORT**

**Interaction with Instructor Statement:**

Students will be expected to interact with the instructor(s) in class or via electronic means in an appropriate manner. All instructor contact information is listed on this syllabus and should be used. Please use email to facilitate a quick response.

Mission for College of Science and Engineering: Innovation and Discovery
Mission for the Department of Mathematics: Discovering the Keys to Success
Course Specific Procedures:

Getting Help Outside of Office Hours: If students are in need of assistance outside of office hours, individual appointments will be scheduled.

Comments: I will do my best to make a quality presentation each day and, in return, I expect that you will do your best to learn the material presented in class. This course will be taught as hands-on as possible, and student participation is necessary daily. It is important that you be actively engaged in any group activities. Questions are welcome in the classroom, as long as they are presented appropriately and in a manner that is respectful to the instructor and other students. I know that together, these efforts can contribute significantly to your education in this class.

Students who are absent more than 2 times, for whatever reason, are subject to the instructor dropping them from the course. Two absences in this course constitutes missing 1/5 of the course, which is a very large fraction of material for a student to miss. Any student who is close to this number of absences should come to the instructor before they accumulate two absences in the course.

As stated in the Student Handbook, academic dishonesty in the class will not be tolerated. If any materials or equipment are found to be available to the student at any time which is considered inappropriate by the instructor, the very fact that the materials are inappropriately available to the student is grounds for an accusation of academic dishonesty. The instructor reserves the right to fail the student for the assignment or the course, as well as report the student to the Academic Dean, the Dean of Students, and the Graduate School. The instructor considers this an extremely serious matter. Please make sure you are not in a situation that could be viewed negatively.

Students found guilty of an act of academic dishonesty in this course will be subject to receiving an “F” in this course, as well as the above-mentioned disciplinary actions.

Supplemental Instructions: Throughout the course of your work in this class, you will be given additional written instructions that govern the look, content and scope of your projects. These supplemental instructions have the same force as the syllabus for grading purposes.

University Specific Procedures:

Student Conduct: All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Code of Student Conduct from Student Guide Handbook).

All students are expected to exercise self-discipline and respect for the rights of others at all times. Behavioral disruptions that interfere with the business of the classroom or with an individual’s ability to learn may be referred to the Dean of Students.
Please be sure that cell phones and other electronic devices are off or silent. Classroom disruptions will not be tolerated. If you expect to have to get up, please select an inconspicuous position to minimize disruptions. Courtesy to others is important. That means respecting the opinions of others, and in general, doing your part to make this a positive learning environment for all students. Food and beverages, while acceptable, should be consumed as quietly as possible, and you must clean up after yourself.

Non-Discrimination:
A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

ADA Statement:
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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu
Student Disability Resources & Services

Remaining enrolled in this course constitutes acceptance of all policies contained in this syllabus.

Any changes to this syllabus will be communicated directly to you in class by the instructor. You are responsible for being aware of any such changes.

Good luck and work hard!!
**Assignment Sheet for MTE 597**

The following assignments are due during the course of the MTE 597 course. They will be used as part of your grade in the course.

<table>
<thead>
<tr>
<th>Date Due</th>
<th>Assignment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, June 9th</td>
<td>Pre-Course Survey</td>
</tr>
<tr>
<td>Thursday, June 11th</td>
<td>Bring in grant RFPs for the group to review. Discuss.</td>
</tr>
<tr>
<td>Tuesday, June 16th</td>
<td>Choose a grant as a group</td>
</tr>
<tr>
<td>Thursday, June 18th</td>
<td><strong>Turn in:</strong> 595 Templates</td>
</tr>
<tr>
<td>Tuesday, June 23rd</td>
<td>Prepare for Discussion: Information about Ethics in Research, Responsible Conduct in Research, Institution Review Boards.</td>
</tr>
<tr>
<td>Thursday, June 25th</td>
<td><strong>Turn in:</strong> Between four and six reference articles on the topic of your choice, to be used in your journal article.</td>
</tr>
<tr>
<td>Tuesday, June 30th</td>
<td><strong>Turn in:</strong> Requirements for publication in the journal of your choice. (i.e. the one you wish to send your journal article)</td>
</tr>
<tr>
<td>Thursday, July 2nd</td>
<td><strong>Turn in:</strong> Individual Projects (Journal articles to be submitted/published)</td>
</tr>
<tr>
<td>Tuesday, July 7th</td>
<td>In-Class IRB paperwork. Group project discussions.</td>
</tr>
<tr>
<td>Thursday, July 9th</td>
<td><strong>Turn in:</strong> Group Projects (Grant proposal rough draft; final draft to be submitted at a later time if desired)</td>
</tr>
<tr>
<td>Tuesday, July 30th</td>
<td><strong>Turn in:</strong> Group Projects (Grant proposal final draft)</td>
</tr>
<tr>
<td>Thursday, July 30th</td>
<td>Final Exam</td>
</tr>
<tr>
<td>Thursday, July 30th</td>
<td>Post-Course Survey</td>
</tr>
<tr>
<td>Thursday, July 30th</td>
<td>Group and Individual Evaluations</td>
</tr>
</tbody>
</table>

**Weekly Schedule for MTE 597**

Week 1: Overview of positions at an institution of higher education, journals, 595 papers, grants, and key terminology/Guest speaker to discuss research in the library and on databases.

Week 2: Discussion of 595 papers, journal articles, impact factors of journals, and grant submissions. Choose a grant to work on as a group as either a mock or real grant proposal.


Week 5: Wrap up the semester. Overview Student Learning Outcomes. Take the Final Exam.