



**MTE 555.01W: (42092) Research Techniques for STEM and Education Majors**  
**COURSE SYLLABUS: Summer 1 2022 (3 semester credit hours)**

## INSTRUCTOR INFORMATION

**Instructor:** Dr. Pamela S. Webster  
**Office Location:** Binnion 315  
**Office Hours:** MW 2:00pm – 3:30pm (online/email/Skype); and 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.

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

## **Student Learning Outcomes:**

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**

### **Minimal Technical Skills Needed:**

Students must have a minimal amount of technical skills to be successful in this course. Skills needed include, but are not limited to: using the online learning system (D2L) in MyLeo/MyLeoOnline; using Microsoft Word, Excel, and PowerPoint; and the use of email.

### **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. There will be video lectures/demonstrations each week, and students will be responsible for the content found in those videos.

### **Student Responsibilities/ Tips for Success in the Course:**

**Attendance/Participation:** Due to the delivery method for this course, there is no attendance grade as such. Instead, students will be required to perform certain tasks, such as watch videos, take quizzes, and send particular emails/postings in D2L, to show their activity and "participation" in the course. These "daily tasks" will be reflected in your Daily Work grade. In addition, we will find a time when all of us can meet, once a week, to discuss our grant application processes and to hold other needed conversations. These "meetings" will likely be held via Zoom; during these times, we will all be actively involved in decision making and

discussions. Throughout the rest of the week, students will communicate through the Discussions Boards on the D2L course shell.

**Amount of weekly study:** The “rule of thumb” for a math class is that for every hour of class time, you should spend approximately 3 hours of study time outside of the classroom. This study time may include a variety of activities, including but not limited to: re-organizing notes; working on homework; participating in a study group, tutoring, workshops, or Supplemental Instruction session; attending review sessions; and studying for quizzes and exams.

## GRADING

### **Grading Policy:**

<u>Section:</u>	<u>Total:</u>
Daily Work	25%
Projects/Participation in Interviews, Surveys, And Other Assessment Materials	50%
Comprehensive Final	25%

### **Grading Scale: Grades will be assigned using the standard scale:**

A = 90-100+, B = 80-89.99, C = 70-79.99, D = 60-69.99 F = 59.99 or below

### **Types of Grades/Assessments:**

**Daily Work:** Homework will be assigned most class periods; this may include finding articles, writing literature reviews, and so on... **It is extremely important for you to work all homework in order to be prepared for the next class period, the class projects, 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. In general, **late work will not be accepted. This is a summer course; there is no “extra” time for late work.**

Please insure that your NAME is on all assignments, printed on the homework page, etc., since they may be separated from D2L and will need to be identified.

All assignments should be completed directly in and/or uploaded into D2L, as mentioned in the “Content” tab for each week. However, there will be occasional assignments that should be emailed

to [Pamela.Webster@tamuc.edu](mailto:Pamela.Webster@tamuc.edu) with the subject line  
“MTE 555 \_\_\_\_\_”, where the \_\_\_\_\_ indicates  
the title of the assignment and YOUR NAME. An example  
would be “MTE 555 Article to Review Pamela Webster”.

In other words, treat each assignment as you would if you were turning it in during a class period: put your “header” up there!

**Attendance:** I will be taking roll every class in the form of participation in daily activities, quizzes over videos and other activities, and discussions. All students are expected to be present, and attendance

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

will be reflected in your Daily Work grade. If you miss a class, please discuss with me any missed assignments.

**Projects:** There will be at least two major projects for this course: one individual and one class project (which can be completed individually, but will be easier to do in parts as a group). 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, whether as a group or individually.

**Individual project tentative due date: June 23<sup>rd</sup>. Class project tentative due date: July 5<sup>th</sup>.**

**Final:** Our final is a comprehensive exam, **given on the last class day**. There will be a two-day window when this exam will be open in D2L, with a two-hour limit once you have opened the exam. You may want to print the exam, or you can use your own paper. If using your own papers, problems will need to be worked in order and neatly in order to receive full credit. 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 exam.**

## TECHNOLOGY REQUIREMENTS

### Instructor Specific Technology Requirements:

- **Internet access is REQUIRED.** Due to the use of D2L in MyLeo for homework and content delivery, all students will need to be able to access the Internet, whether through their own computer or access to a computer lab on campus. Projects, etc., will be given online, as well. Information about accessing the course through MyLeo using D2L is given below.
- **A webcam OR a built-in camera on a laptop/tablet/phone is RECOMMENDED.** Students will be completing projects and discussions where they may need to be seen and/or heard. Also, office hours will be held via Zoom.
- **Word processing and spreadsheet software is REQUIRED.** (Microsoft Word and ExCel preferred/compatibility required)
- **Email access is REQUIRED.** Please utilize your A&M-Commerce email address. Please be sure you are able to receive credit for your work by actually **WRITING YOUR NAME ON YOUR WORK**. In that way, when your work is printed (and separated from your D2L or email), your name is still attached to your work. Homework pages without identifiable student names may end up in the “no name” pile and require a great deal of work to track down the rightful owner.
- **Video camera/camera access required.** Students will be expected to upload pictures and/or videos of themselves for activities and projects throughout the semester. Your laptop/tablet/phone may be sufficient for recording.
- **Scanner:** A scanner or scan app **MUST** be used for uploading homework; **NOT just** the camera on your phone or tablet. Homework and other documents must be loaded as .pdf files, **NOT** as .jpg files. This allows for an easy upload and download and clean documents (no

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

black outlines/edges, etc.), as well as compatibility between different types of computers and software systems. I have personal experience with the free app Cam Scanner (a video will be available in the “content” page in D2L), but there are several apps available. Many are free, including the “basic” version of Cam Scanner, even if they ask for money... you should still be able to use the free version for this course. As long as it will load to MyLeo as a .pdf and there aren’t a lot of dark edges, extra items in the background, or shadows on the pages, you should be okay.

- **Printer:** You will most likely want a printer and/or printing abilities for many activities and exams.
- **Calculator:** A TI-83 or TI-84 calculator (or equivalent) may be wanted for the grant writing portion of the course.

### **MyLeo Online Learning Management System (LMS):**

**D2L in MyLeo:** All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the. Below are technical requirements

- LMS Requirements:  
<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>
- LMS Browser Support:  
[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)
- YouSeeU Virtual Classroom Requirements:  
<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION in MyLeo/D2L:

**MyLeo Support:** You will need your campus-wide ID (CWID) and password to log into your course in D2L. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab (library?), etc.

## **COMMUNICATION AND SUPPORT**

If you have any questions or are having difficulties with the course material, please contact your instructor:

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

**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.

**Technical Support:**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here: <https://community.brightspace.com/support/s/contactsupport>

## COURSE AND UNIVERSITY PROCEDURES/POLICIES

**Course Specific Procedures/Policies:**

**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.

***Syllabus Change Policy:***

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

**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. The Code of Student Conduct is described in detail in the [Student Guidebook](#) (See link below). 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. 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.

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>. All people will be treated with respect and I will not allow inappropriate online conversation in our D2L course. If disruptions occur during class, you will be asked to leave class and will earn a zero on any applicable grades for that class period. Serial disrupters will be asked dealt with individually, including referral to the Dean of Students.

**TAMUC Attendance Policy:**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

**Academic Integrity:**

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

**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 assign a failing grade to 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.

I find that a majority of students are honest in doing their school work. However, we must take measures to protect the academic integrity of the classroom. **I have a NO TOLERANCE policy for cheating and if you are caught cheating, you will probably fail that portion of the course, as well as possibly the entire course.**



***Students with Disabilities -- 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, Room 162  
Phone (903) 886-5150 or (903) 886-5835  
Fax (903) 468-8148**

Email: [StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)

Website: [Student Disability Resources & Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

***Non-Discrimination Notice:***

Texas A&M University-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.

***Counseling Center:***

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit [www.tamuc.edu/counsel](http://www.tamuc.edu/counsel).

***Concealed Carry Statement:***

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>



Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

## COURSE OUTLINE/CALENDAR

### Topics Covered (tentative schedule):

**NOTE:** This is the entire 16-week course pushed into a very short, very FAST PACED 5-week course. There will be multiple assignments each day, based on what constitutes a “normal” class period. It is **highly important that all students stay on top of their DAILY assignments!!**

### Weekly Schedule for MTE 555

Week 1: Overview of positions at an institution of higher education, journals, 595 papers, thesis 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 3: Discussion of Ethical behavior in Research, Institution Review Boards, and the Responsible Conduct of a Researcher. Individual Projects due. Discuss Group Project.

Week 4: Analyze the IRB template. Continue discussion of the Group Project. Group Project due.

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

### Assignment Sheet for MTE 555

The following assignments are due during the course of the MTE 555 course. They will be used as part of your grade in the course.

#### Date Due: \_\_\_\_\_

#### Assignment:

#### Week 1:

Tuesday, June 7<sup>th</sup>  
Thursday, June 9<sup>th</sup>

Pre-Course Survey.  
Bring in grant RFPs for the group to review. Discuss.

#### Week 2:

Tuesday, June 14<sup>th</sup>  
Thursday, June 16<sup>th</sup>

Choose a grant as a group  
**Turn in:** beginnings of 595 Templates; pages specified in course shell (518 if planning to write a thesis)

#### Week 3:

Tuesday, June 21<sup>st</sup>

Prepare for Discussion: Information about Ethics in Research, Responsible Conduct in Research, Institution Review Boards.  
**Turn in:** Between four and six reference articles on the topic of your choice, to be used in your journal article.  
**Turn in:** Requirements for publication in the journal of your

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

choice. (i.e. the one you wish to send your journal article)

Thursday, June 23<sup>rd</sup>

**Turn in:** Individual Projects (Journal articles to be submitted/published)

**Week 4:**

Tuesday, June 28<sup>th</sup>

Thursday, June 30<sup>th</sup>

In-Class IRB paperwork. Group project discussions.

**Turn in:** Group Projects (Grant proposal rough draft; final draft to be submitted at a later time if desired)

**Week 5:**

Tuesday, July 5<sup>th</sup>

Thursday, July 7<sup>th</sup>

**Turn in:** Group Projects (Grant proposal final draft)

Final Exam

Post-Course Survey

Group and Individual Evaluations

***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!!