



Soules College of Business
Department of Technology
TECH 5303
Research Techniques in Technology
Course Syllabus

Instructor: Dominick E. Fazarro, Ph.D.

Section: 060

Spring 2021

Class Time: ONLINE

Email: dfazarro@uttyler.edu

Other Availability: Phone: N/A

Course Content:

This course is designed to provide students an understanding of research methods and processes applicable to engineering and technology. Emphasis will be placed on defining research problems, collecting, analyzing, recording, and interpreting data.

Required Textbook:

Christensen, L.B., & Johnson, R.B. & Turner, L.A. (2014). *Research Methods: Design and Analysis*. Pearson: Upper Saddle River, NJ. ISBN-13: 978-0-205-96125-2

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). Washington, DC: Author. ISBN 978-1-4338-3216-1

| Student Learning Outcomes |
|---|
| Summarize the nature of research in general <i>(by assignments)</i> |
| Discuss the differences between quantitative and qualitative research <i>(by review of journal articles & assignments)</i> |
| Apply the ability to review appropriate literature <i>(by assignments)</i> |
| Construct an appropriate reference list from scholarly sources of materials <i>(by review of journal articles & assignments)</i> |
| Select appropriate research design to use <i>(by review of journal articles & assignments)</i> |
| Develop research problems and hypotheses <i>(by review of journal articles & assignments)</i> |
| Compare different methods of data collection and analysis influence results <i>(by review of journal articles & assignments)</i> |
| Demonstrate the ability to organize and prepare a research paper using formatting and reference styles from the Publication Manual of |

the American Psychological Association and/or professional journal(*by review of journal articles, assignments, & final project*)

Core/Program Competencies

| Program Outcomes | TECH 5303 |
|---|------------------|
| 1. Identify the proper materials and manufacturing processes used to fabricate a specific part | |
| 2. Understand and use technical software, data sources, and automation such as CAD, CAM, CNC, PLC's, and robotics | |
| 3. Demonstrate a thorough knowledge of current management and supervisory practices | |
| 4. Prepare well-organized and mechanically correct documents in order to plan production | |
| 5. Apply and follow recommended safety standards | |
| 6. Understand facility layout and the management of supply chains | |
| 7. Demonstrate the use of research methods to solve problems | X |

Learning-Management

Students will be able to view announcements, course progress, and retrieve some assignments using Canvas™. This technology enable students to be proactive in their learning and effective communication between the student and instructor.

Tentative Course Requirements:

Weighted grade distributions#

| | |
|-------------------------------------|-------------|
| Book & Journal Assignments (35 pts) | 55% |
| Final Examination (100 pts) | 45% |
| Total | 100% |

Grade Scale Breakdown:

- A=90 - 100%
- B=80 - 89%
- C=70 - 79%
- D=60 - 69%
- F=BELOW 60%

Note: 89.99999999999999 is still a B.

Schedule of Assignments for Course

| Date | No. | Topic/Activity | Reading (Pgs.)/Sources DUE DATE |
|-------------------------|-----|---|------------------------------------|
| Jan 11 | 1 | Orientation (ZOOM SESSION) | - |
| Jan 11 | 1 | CHAPTER 1-Introduction to Scientific Research | 1-22 |
| Jan 11 | 1 | Assignment | Jan 17 |
| Jan 19 | 2 | CHAPTER 2-Research Approaches and Methods of Data... | 25-60 |
| Jan 19 | 2 | Assignment | Jan 24 |
| Jan 26 | 3 | CHAPTER 3-Problem Identification and Hypothesis... | 63-85 |
| Jan 26 | 3 | Assignment | Jan 31 |
| Feb 1 | 4 | CHAPTER 4-Ethics | 88-126 |
| Feb 1 | 4 | Assignment | Feb 7 |
| Feb 1 | 5 | EXPLANATION OF RESEARCH PAPER | Feb 1 |
| Feb 9 | 5 | CHAPTER 5-Measure Variables and Sampling | 131-155 |
| Feb 9 | 5 | Assignment | Feb 15 |
| Feb 16 | 6 | CHAPTER 6-Research Validity | 158-172 |
| Feb 16 | 6 | Assignment | Feb 21 |
| Feb 22 | 7 | CHAPTER 7-Control Techniques in Experimental Research | 187-214 |
| Feb 22 | 7 | Assignment | Feb 28 |
| Mar 1 | 8 | CHAPTER 8-Experimental Research Design | 217-246 |
| Mar 1 | 8 | Assignment | Mar 7 |
| Mar 8 | 9 | CHAPTER 9-Procedure for Conducting and Experiment | 249-266 |
| Mar 8 | 9 | CHAPTER 10-Quasi-Experiemtnal Designs | 269-287 |
| Mar 8 | 9 | Assignment | Mar 14 |
| Mar 16 | 10 | CHAPTER 12-Survey Research | 313-340 |
| Mar 16 | 10 | Assignment | Mar 21 |
| Apr 1 | 11 | CHAPTER 14-Descriptive Statistics | 373-404 |
| Apr 1 | 11 | Assignment | Apr 6 |
| Apr 12 | 12 | CHAPTER 16-Preparing the Research Report for Presentation...(NO ASSIGNMENT) | 447-477 |
| Link OPENS Apr 22 | 12 | UPLOAD RESEARCH PROJECT | Due Date Apr 28 |

Course Format

The course involves PowerPoint slides, discussions with critical feedback, current readings, YouTube videos, and CANVAS Discussions.

FORMAT OF ASSIGNMENTS

Any assignments in this course must be done in a neat manner and submitted using proper grammar, spelling and punctuation. Proper language will be considered a factor in the instructor's evaluation. Assignments are to be done on 8.5 x 11 paper and submitted on time as specified in the assignment table. Each assignment should include a table of contents **if applicable** and a cover/title page which contains the following information (SEE APA 7TH Ed. for title page):

- A. Course Number & Title
- B. Assignment and/or Project Title
- C. Your full name
- D. Instructor
- E. Semester & Date

IF ASSIGNMENTS DO NOT USE THIS FORMAT, 2 POINTS WILL BE DEDUCTED!!!!

Using Canvas for Turning in Assignments

CANVAS will be the tool for communication and turning in assignments. **ALL ASSIGNMENTS WILL OPEN UP AT 7AM AND TURNED IN PROMPTLY AT 11PM.** Folders will be created for each assignment to attach your assignments. Each assignment will have a due date. **IF YOU DO NOT MEET THE DUE DATE FOR THE ASSIGNMENT, THE FOLDER WILL DEACTIVATE. THEREFORE, YOU WILL NOT BE ABLE TO TURN YOU ASSIGNMENT TO RECEIVE CREDIT.** The only exception to turn in an assignment after the due date is if you are ill (with a written excuse) or technical difficulties. **IT IS YOUR RESPONSIBILITY TO COMMUNICATE WITH TECHNICAL SERVICES TO RESOLVE YOU CANVAS MALFUNCTIONS.**

Canvas Assignment Discussions

The online course format requires communication between students to stimulate conversation and feedback on the topics. Student responses on the discussion board should have quality content to demonstrate critical-thinking and creativity. In order to receive credit/points for every discussion posted, **you MUST respond to at least two students, if not, YOU WILL RECEIVE ONLY 15 POINTS!!! *One to two sentences do not constitute a quality response; therefore, full credit will not be given.***

Zoom Sessions

Zoom sessions are not mandatory but the help students if some of the material is difficult to understand and to track progress of students for this course. Zoom sessions will be held every other Monday. An announcement will be posted before every session that is held. The sessions will last 45 minutes and begin at 8pm. **There will be a mandatory session on January 11th at 8pm.**

Late Assignment Penalty (PLEASE READ CAREFULLY!!!)

You have at least 3-5 days to complete your assignments. I do understand that you have assignments in other courses, but the management is important. **IF YOU DO NOT TURN IN YOUR ASSIGNMENTS ON TIME, YOU WILL RECEIVE A ZERO! (If you are sick,**

please show proof by doctor's note to be excused to upload assignments.) If you do experience computer problems, please contact Computer Support and email me documentation of time and date of the call. That will help me to also contact Computer Support to expedite your request to fix any problems you may have.

PLEASE NOTE THAT THE EXAM WILL CLOSE AFTER THE DUE DATE ON CANVAS!

Grade Dispute

If you have a disagreement with your final grade, you have **1 week to resolve it**. You must email all your assignments when meeting with the instructor by video or by phone.

Date to Withdraw Without Penalty:

March 29, 2021

Dates of Final Exam:

April 27-30, 2021

Students Rights and Responsibilities

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link:

<http://www.uttyler.edu/wellness/rightsresponsibilities.php>

UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do

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UT Tyler a Tobacco-Free University

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.

Grade Replacement/Forgiveness and Census Date Policies

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the Census Date is Sept 4th) Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found

on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.

The Census Date (Sept 4th) is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

State-Mandated Course Drop Policy

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date). Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

Disability/Accessibility Services

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a disability diagnosis such as a chronic disease, learning disorder, head injury or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with an Accessibility Case Manager. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR webpage (<http://www.uttyler.edu/disabilityservices/>) or the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to saroffice@uttyler.edu.

Mandatory Face Coverings (COVID-19) **(Apply only to face-to-face courses)**

During the pandemic we are to comply through the Governor Greg Abbott's mandate and enforced by the President of the University of Texas at Tyler for students to wear face coverings during class. This is to ensure the safety of yourself as well as for others.

Students who have been exposed to COVID-19 or who test positive for Covid-19 should immediately self-report this information.

- If you have recently been on campus, report via the COVID-19 hotline, **903.565.5999**, so that steps can be taken to prevent any possible spread.
- If you have NOT recently been on campus, report by completing a UT Tyler COVID-19 Report form

For more information, go to <https://www.uttyler.edu/reboot/>

Go to Governor Abbott's madate-<https://gov.texas.gov/news/post/governor-abbott-establishes-statewide-face-covering-requirement-issues-proclamation-to-limit-gatherings>

Important Covid-19 Information for Classrooms and Laboratories

Students are required to wear face masks covering their nose and mouth, and follow social distancing guidelines, at all times in public settings (including classrooms and laboratories), as specified by [Procedures for Fall 2020 Return to Normal Operations](#). The UT Tyler community of Patriots views adoption of these practices consistent with its [Honor Code](#) and a sign of good citizenship and respectful care of fellow classmates, faculty, and staff.

Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher than normal temperature will be excused from class and should stay at home and may join the class remotely. Students who have difficulty adhering to the Covid-19 safety policies for health reasons are also encouraged to join the class remotely. Students needing additional accommodations may contact the Office of Student Accessibility and Resources at University Center 3150, or call (903) 566-7079 or email saroffice@uttyler.edu.

Student Absence due to Religious Observance

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester. Revised 09/16

Student Absence for University-Sponsored Events and Activities

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

Emergency Exits and Evacuation

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building

unless given permission by University Police, Fire department, or Fire Prevention Services.

Student Standards of Academic Conduct

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

i. "Cheating" includes, but is not limited to:

- copying from another student's test paper;
- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;
- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.

iii. "Collusion" includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

iv. All written work that is submitted will be subject to review by SafeAssign™, available on CANVAS.

UT Tyler Resources for Students

- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu
- UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu