Math 5380, 10146, ST: Topics in Mathematics (Basics in Data Analytics)  
Spring 2020  
Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION
Math 5380 is an online class and meetings will occur on Mondays from 6:00pm-8:45pm by clicking on this link:  
https://tamuct.webex.com/join/dekock  
This is a 16-week class with meetings from January 13th, 2020 – May 8th, 2020.

INSTRUCTOR AND CONTACT INFORMATION
Instructor   Dr. Mienie Roberts  
Office       Heritage Hall Room 302K  
Phone:       903.705.9703  
Email:       dekock@tamuct.edu, but the preferred method of contact is via the Canvas Inbox.

Instructor Office Hours:

Face-to-face office hours (HH Room 302K):  
Mondays from 12:00pm-2:00pm on the following dates:  
January 13th, January 27th, February 10th, March 2nd, April 27th, May 4th

Online office hours:  
Webex link:  
https://tamuct.webex.com/join/dekock  
Every Monday and Wednesday from 12:00 pm-2:00 pm

Also by appointment.

Student-instructor interaction
The instructor will check her email on a daily basis and will respond within 24 hours to any correspondence. The instructor will post announcements in regards to the class to CANVAS announcements. It is the responsibility of the student to check the announcements on a daily basis.

WARRIOR SHIELD
Emergency Warning System for Texas A&M University-Central Texas
Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](https://portal.publicsafetycloud.net/Account/Login) to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

**COURSE INFORMATION**

**Course Overview and description**

In this course, you will develop a working familiarity with the grounding principles of data analysis. We will review basic statistical concepts and introduce data analysis from the Bayesian perspective. This course will also use a high-level programming language, called R, that is widely used for statistical data analysis. Using R, we will study and practice the following methodologies: data cleaning, feature extraction; web scrubbing, text analysis; data visualization; fitting statistical models; simulation of probability distributions and statistical models; statistical inference methods that use simulations.

**Course Objective or Goal**

**Student Learning Outcomes**

Students will become thoroughly proficient in the following areas:

- Data and Statistics
- Descriptive Statistics
- Probability
- Discrete Probability distributions
- Continuous Probability distributions
- Random Variables
- Functions of Random Variables
- Hypothesis Testing
- Simple linear regression
- Multiple regression
- Correlation
- Maximum Likelihood Estimation
- Bayesian Statistics
- The use of R/RStudio for data analysis and visualization
Required Reading and Textbook(s)

Students need to purchase an access code to mystatlab. The e-book, homework assignments, and tests will be available through this online account. Here are the details to sign up:

To register for Math 5380:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor’s course ID: roberts27999, and Continue.
5. Enter your existing Pearson account username and password to Sign in.
   You have an account if you have ever used a MyLab or Mastering product.
   » If you don’t have an account, select Create and complete the required fields.
6. Select an access option.
   » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
   » If available for your course,
     • Buy access using a credit card or PayPal.
     • Get temporary access.
   If you’re taking another semester of a course, you skip this step.
7. From the You’re Done! page, select Go To My Courses.
8. On the My Courses page, select the course name Math 5380 to start your work.

To sign in later:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select the course name Math 5380 to start your work.

To upgrade temporary access to full access:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select Upgrade access for Math 5380.
5. Enter an access code or buy access with a credit card or PayPal.
COURSE REQUIREMENTS

Course Requirements:
Homework assignments on mystatlab. Students will have infinitely many attempts at each homework problem and will receive instant feedback on progress via the mystatlab software. The projects will be done in R/RStudio.

Grading Criteria Rubric and Conversion

<table>
<thead>
<tr>
<th>Project</th>
<th>Points</th>
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<tbody>
<tr>
<td>1</td>
<td>25</td>
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<td>11</td>
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<td>12</td>
<td>100</td>
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<tr>
<td>Homework</td>
<td>100</td>
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<td>TOTAL:</td>
<td>1000</td>
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Posting of Grades
- All grades for the homework assignments, immediately available on the “Gradebook” on mymathlab.
- The grades for the projects will be available within 3 days of the due date on mymathlab.

Grading Policies

No late work will be accepted. All the due dates are clearly stated on the weekly schedule. Please follow the schedule. Here are the rubrics for assignments:

Rubric for projects:

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<tr>
<th></th>
<th>Excellent</th>
<th>Average</th>
<th>Poor</th>
<th>Score</th>
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<tbody>
<tr>
<td>Understanding of mathematical concept (10 points)</td>
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<td>Use of technology/manipulatives (6 points)</td>
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## COURSE OUTLINE AND CALENDAR

### Complete Course Calendar

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<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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</table>
| Week 1 | Jan 13  
Online meeting on webex | Jan 14 | Jan 15 | Jan 16 |
| Week 2 | Jan 20  
MLK Junior day  
No class | Jan 21 | Jan 22 | Jan 23 |
| Week 3 | Jan 27  
Online meeting on webex  
Project 1 due  
Homework on Chapters 1-4 due | Jan 28 | Jan 29 | Jan 30 |
| Week 4 | Feb 3  
Online meeting on webex  
Project 2 due  
Homework on Chapters 5+6 due | Feb 4 | Feb 5 | Feb 6 |
| Week 5 | Feb 10  
Online meeting on webex  
Project 3 due  
Homework on Chapters 7+8 due | Feb 11 | Feb 12 | Feb 13 |
| Week 6 | Feb 17  
President’s day | Feb 18 | Feb 19 | Feb 20 |
| Week 7 | Feb 24  
Online meeting on webex  
Project 4 due  
**Homework on Chapter 9 due** | Feb 25 | Feb 26 | Feb 27 |
| Week 8 | Mar 2  
Online meeting on webex | Mar 3 | Mar 4 | Mar 5 |
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Events</th>
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<tbody>
<tr>
<td>Spring Break</td>
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<td>Spring Break</td>
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<tr>
<td>Week 9</td>
<td>Mar 16</td>
<td>Online meeting on webex Project 6 due Homework on Chapter 11 due</td>
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<td>Mar 19</td>
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<td>Week 10</td>
<td>Mar 23</td>
<td>Online meeting on webex Project 7 due Homework on Chapter 12 due</td>
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<td>Week 11</td>
<td>Mar 30</td>
<td>Online meeting on webex Project 8 due Homework on Chapter 13 due</td>
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<td>Apr 1</td>
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<td>Week 12</td>
<td>Apr 6</td>
<td>Online meeting on webex Homework on Chapter 14 due Project 9 due</td>
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<td>Week 13</td>
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<td>Online meeting on webex Homework on Chapter 16 due Project 10 due</td>
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<td>Week 14</td>
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<td>Online meeting on webex Homework on Chapter 17 due Project 11 due</td>
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<td>Week 15</td>
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<td>Online meeting on webex Homework on Chapter 18 due</td>
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<td>Week 16</td>
<td>May 4</td>
<td>Online meeting on webex Project 12 due</td>
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<td>May 5</td>
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Important University Dates
https://www.tamuct.edu/registrar/academic-calendar.html

TECHNOLOGY REQUIREMENTS AND SUPPORT
Students are required to have the ability to interact and connect with the instructor virtually in order to be successful in the class. Additionally, they should feel confident about their ability to navigate online websites and use common word processing software and cloud computing technologies to share and submit assignments.

Technology Requirements
This course will use the A&M-Central Texas Instructure Canvas learning management system. We strongly recommend the latest versions of Chrome or Firefox browsers. Canvas no longer supports any version of Internet Explorer.

Logon to A&M-Central Texas Canvas [https://tamuct.instructure.com/] or access Canvas through the TAMUCT Online link in myCT [https://tamuct.onecampus.com/]. You will log in through our Microsoft portal.

Username: Your MyCT email address. Password: Your MyCT password

Canvas Support
Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your instructor.

Other Technology Support
For log-in problems, students should contact Help Desk Central
24 hours a day, 7 days a week
Email: helpdesk@tamu.edu
Phone: (254) 519-5466
Web Chat: [http://hdc.tamu.edu]

Please let the support technician know you are an A&M-Central Texas student.

Students are also required to create an account on
https://www.pearsonmylabandmastering.com/northamerica/mystatlab/
All homework assignments, tests, midterm, final exam, and lecture videos will be available and students need to purchase an access code to sign up for the class.

We will use the statistical software R/RStudio in this class. Students will be required to bring their laptops to class and have the software downloaded onto their laptops.

R can be downloaded from:
https://cran.r-project.org/bin/windows/base/

RStudio can be downloaded from: https://rstudio.com/products/rstudio/download/

Students are required to connect to: https://tamuct.webex.com/join/dekock for online classes and online office hours and to:

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**UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES**

**Drop Policy**
If you discover that you need to drop this class, you must complete a [Drop Request Form](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf).

Professors cannot drop students; this is always the responsibility of the student. The Registrar’s Office will provide a deadline on the Academic Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar’s Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar’s Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

**Academic Integrity**
Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student’s academic performance and includes, but is not limited to, working with others in an unauthorized manner, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student’s work, collusion, and the abuse of resource materials. All academic misconduct concerns will be referred to the university’s Office of Student Conduct. Ignorance of the university’s standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more information regarding the Student Conduct process,
If you know of potential honor violations by other students, you may submit a report.

Academic Accommodations
At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Office of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university’s programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Office of Access and Inclusion, WH-212; or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information please visit our Access & Inclusion Canvas page (log-in required)

Important information for Pregnant and/or Parenting Students
Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education’s Office of Civil Rights, the Dean of Student Affairs’ Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit Student Affairs. Students may also contact the institution’s Title IX Coordinator. If you would like to read more about these requirements and guidelines online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University’s Title IX Coordinator.

Tutoring
Tutoring is available to all A&M-Central Texas students, both on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111. Tutor.com tutoring will not offer writing support beginning August 1, 2019, but will continue to offer other tutoring support.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Center.
Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or by emailing studentsuccess@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas. Access Tutor.com through Canvas.

**University Writing Center**

Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free workspace open to all TAMUCT students from 10:00 a.m.-5:00 p.m. Monday thru Thursday with satellite hours in the University Library Monday thru Thursday from 6:00-9:00 p.m. This semester, the UWC is also offering online only hours from 12:00-3:00 p.m. on Saturdays.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students’ ideas and writing, our tutors highlight the ways in which they read and interpret students’ texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via WCOnline [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu if you have any questions about the UWC and/or need any assistance with scheduling.

**University Library**

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled
for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our Library website [http://tamuct.libguides.com/index].

OPTIONAL POLICY STATEMENTS

A Note about Sexual Violence at A&M-Central Texas
Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don’t agree with their behaviors and tell survivors we will support them. Your actions matter. Don’t be a bystander; be an agent of change. For additional information on campus policy and resources visit the Title IX webpage [https://www.tamuct.edu/departments/compliance/titleix.php].

Behavioral Intervention
Texas A&M University-Central Texas cares about the safety, health, and well-being of its students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, who are exhibiting concerning behaviors, or individuals causing a significant disruption to our community, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the referral online [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the Behavioral Intervention Team website for more information [https://www.tamuct.edu/student-affairs/bat.html]. If a person’s behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5800.
OTHER POLICIES

No late assignments will be accepted. All dates are clearly stated in the weekly schedule. Please make sure to complete assignments before the due date.

Copyright Notice

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas’ Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

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