

# **MATH 3315-115**

**CRN 80388, Mathematics and Technology**

Fall 2017 Aug. 28<sup>th</sup> –Oct. 20<sup>th</sup>

Texas A&M University-Central Texas

## **INSTRUCTOR AND CONTACT INFORMATION**

**Instructor: Roberts, Mienie**

**Office: Warrior Hall, Room 420-M**

**Phone: 903.705.9703**

**Email: [dekock@tamuct.edu](mailto:dekock@tamuct.edu)** Please use Canvas “Inbox” for all questions related to the course.

Skype id: mienie123

### **Office Hours:**

**August 28<sup>th</sup> – October 20<sup>th</sup>**

Face-to-face: Mondays, Wednesdays from 3pm-7pm.

Online: Mondays and Wednesdays from 3pm-7pm.

Tuesdays from 11am-1pm

Or by appointment.

**October 20<sup>th</sup> –December 15<sup>th</sup>**

Online: Mondays and Wednesdays from 3pm-7pm.

Or by appointment.

### **Mode of instruction and course access:**

This is an online course. All assignments will be available on Canvas. The course will consist of 6 projects done in R/RStudio and 2 projects completed in Geogebra.

This course uses the A&M-Central Texas Canvas Learning Management System:

<https://tamuct.instructure.com>

All course materials are posted at:

<http://rtutorial.altervista.org/>

Student-instructor interaction:

The instructor will check her emails on a daily basis. Feedback will be given within 24 hours.

Office hours will be held over Blackboard Collaborate and students are encouraged to click on the link that will be sent out over Canvas announcements. Students can also text or call the instructor at: 903.705.9703.

### **911 Cellular:**

Emergency Warning System for Texas A&M University – Central Texas

911Cellular 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 911 Cellular through their myCT email account.

Connect at [911Cellular](https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management) [https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management] to change where you receive your alerts or to opt out. By staying enrolled in 911Cellular, university officials can quickly pass on safety-related information, regardless of your location.

## **COURSE INFORMATION**

### **Course Overview and description:**

R is rapidly becoming the leading language in data science and statistics. Today, R is the tool of choice for data science professionals in every industry and field.

This introduction to R programming course will help you master the basics of R. In six sections, you will cover:

1. Basic syntax
2. Data structures - starting from variables and basic operations vectors, matrices, data frames and lists.
3. Plots in R.
4. Regular expressions
5. Data visualization – Introduction
6. Data visualization – Advanced techniques.

Interactive math tools, are used in the classroom to provide concrete ways to explore abstract concepts, enhance success for visual learners, promote higher order thinking skills and to deepen understanding. We will utilize the software tool Geogebra Prerequisite(s): MTHK 309

## **COURSE REQUIREMENTS**

The student will be responsible for downloading R/RStudio. There will be a total of 8 projects in this class. Each project is worth 100 points for a total of 800 points.

### **Grading Criteria Rubric and Conversion**

Projects (8x100)	(800 points)	100%
<b>TOTAL</b>	<b>(1000 points)</b>	<b>100%</b>

GRADING SCALE

- 90 - 100 = A
- 80 - 89 = B
- 70 - 79 = C
- 60 - 69 = D
- Below 59 = F

**Weekly schedule:**

<b>Week 1</b>	<p><b>Aug 28</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Installation of R and RStudio</a></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p><b>Aug 29</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">RStudio Interface: Panes, Tabs, and Windows</a></li> </ul> <p>Online office hours from 11am-1pm</p>	<p><b>Aug 30</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Reading in and Exporting Data in R/RStudio</a></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p><b>Aug 31</b>                  Project 1 due</p>
<b>Week 2</b>	<p><b>Sep 4</b>                  Labor Day                  No class</p>	<p><b>Sep 5</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Data Organization: Variables and Vectors</a></li> </ul> <p>Online office hours from 11am-1pm</p>	<p><b>Sep 6</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Lists and Frames</a></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p><b>Sep 7</b>                  Project 2 due</p>
<b>Week 3</b>	<p><b>Sep 11</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Selecting Specific Data from Frames</a></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p><b>Sep 12</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Basic Data Exploration</a></li> </ul> <p>Online office hours from 11am-1pm</p>	<p><b>Sep 13</b>  <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><a href="#">Creating Plots in RStudio</a></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p><b>Sep 14</b>                  Project 3 due</p>

Week 4	<p>Sep 18 <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><b>Summary Statistics</b></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p>Sep 19 <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><b>Table-based statistics</b></li> </ul> <p>Online office hours from 11am-1pm</p>	<p>Sep 20 <a href="http://rtutorial.altervista.org/">http://rtutorial.altervista.org/</a></p> <ul style="list-style-type: none"> <li><b>Regular expressions in R</b></li> </ul> <p>Face-to-face and online office hours from 3pm-7pm</p>	Sep 21 Project 4 due
Week 5	<p>Sep 25 Introduction to data visualization.</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p>Sep 26 Introduction to data visualization.</p> <p>Online office hours from 11am-1pm</p>	<p>Sep 27 Introduction to data visualization.</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	Sep 28 Project 5 due
Week 6	<p>Oct 2 Data Visualization with Shiny.</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p>Oct 3 Data Visualization with Shiny.</p> <p>Online office hours from 11am-1pm</p>	<p>Oct 4 Data Visualization with Shiny.</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	Oct 5 Project 6 due
Week 7	<p>Oct 9 Introduction to Geogebra</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p>Oct 10 Introduction to Geogebra</p> <p>Online office hours from 11am-1pm</p>	<p>Oct 11 Introduction to Geogebra</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	Oct 12 Project 7 due
Week 8	<p>Oct 16 Widgets with Geogebra</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	<p>Oct 17 Widgets with Geogebra</p> <p>Online office hours from 11am-1pm</p>	<p>Oct 18 Widgets with Geogebra</p> <p>Face-to-face and online office hours from 3pm-7pm</p>	Oct 19 Project 8 due

### Important University Dates:

August 28, Add/Drop/Late Registration begins

August 30, Add/Drop/Late Registration ends, 16-week and 1st 8-week classes

September 1, Priority Deadline to Submit Graduation Application

September 4, Labor Day, CAMPUS CLOSED

September 5, Last day to drop 1st 8-week classes with no record

September 13, Last day to drop 16-week classes with no record

September 22, Last day to drop a 1st 8-week class with a Q or withdraw with a W

October 6, Deadline to submit graduation

October 20, Last day to withdraw from the University (1st 8-week classes WF)  
October 23, Add/Drop/Late Registration begins, 2nd 8-week classes  
October 26, Add/Drop/Late Registration ends, 2nd 8-week classes  
October 30, Last day to drop 2nd 8-week classes with no record  
November 10, Veteran's Day  
November 10, Last day to drop with a Q or withdraw with a W (16-week classes)  
November 17, Last day to drop a 2nd 8-week class with a Q or withdraw with a W  
November 23-24, Thanksgiving, CAMPUS CLOSED  
December 15, Last day to withdraw from the University (16-week and 2nd 8-week classes)  
December 15, Last day to file for Degree Conferral (Registrar's Office)  
December 15, Commencement (End of Fall Term)  
December 25-January 1, WINTER BREAK

### **Posting of Grades**

**All grades will immediately be available on the gradebook on mymathlab.**

### **TECHNOLOGY REQUIREMENTS AND SUPPORT**

#### **Technology Requirements.**

This course will make extensive use of the R and RStudio software. We will also use geogebra which can be accessed at:

<https://www.geogebra.org/>

This course will use the A&M-Central Texas Instructure Canvas learning management system and Pearson's mymathlab management system.

Logon to A&M-Central Texas Canvas [<https://tamuct.instructure.com>].

Username: Your MyCT username (xx123 or everything before the "@" in your MyCT e-mail address)

Password: Your MyCT password

All the course materials are posted on this website:

<http://rtutorial.altervista.org/>

#### **Technology Support.**

For log-in problems, students should contact Help Desk Central.

24 hours a day, 7 days a week:

Email: [helpdesk@tamu.edu](mailto:helpdesk@tamu.edu)

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): [<http://hdc.tamu.edu>]

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

For issues with **Canvas**, select "chat with Canvas support," submit a support request to Canvas Tier 1, or call the Canvas support line: 1-844-757-0953, links to all are found inside of Canvas using the "Help" link.

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

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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) [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 University 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, 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 reported 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.

### **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 Department 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 Department of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.

For more information please visit our [Access & Inclusion](https://www.tamuct.edu/student-affairs/access-inclusion.html) webpage [https://www.tamuct.edu/student-affairs/access-inclusion.html].

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and 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. For more information, please visit <https://www.tamuct.departments/index.php>. 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>].

### **Tutoring.**

Tutoring is available to all A&M-Central Texas students, both on-campus and online. On-campus subjects tutored include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111. If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or any other question, contact Academic Support Programs at 254-519-5796, or by emailing Larry Davis at [Imdavis@tamuct.edu](mailto:Imdavis@tamuct.edu).

Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in over forty subject areas. Access Tutor.com through Canvas.

### **The University Writing Center.**

Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students from 10am-5pm Monday-Thursday with satellite hours in the University Library on Mondays from 6:00-9:00pm. Students may arrange a one-on-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](mailto:bruce.bowles@tamuct.edu) to schedule an online tutoring session. 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 University Writing Center is here to help!

If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at [bruce.bowles@tamuct.edu](mailto:bruce.bowles@tamuct.edu).

## 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 72,000 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 twenty-four 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](https://tamuct.libguides.com/) [https://tamuct.libguides.com/].

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## **INSTRUCTOR POLICIES.**

Please contact me via email on the Canvas inbox or on blackboard collaborate. You are also welcome to text me at: 903.705.9703.

### **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.

### **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)[https://www.tamuct.edu/departments/compliance/titleix.php].