MTHK 5380.110 Technology-Aided Mathematics | Spring 2019

Instructor & Contact Information
Mienie Roberts, PhD
Associate Professor in Mathematics
College of Arts and Sciences
1001 Leadership Place, Killeen TX 76549

Office: Heritage Hall 302K
Office Hours:
  Face-to-face: Monday 2:15pm-6:00pm
  Online: Monday 2:15pm-6:00pm
  Wednesday 2:15pm-4:30pm
  Or by appointment
We will use web conferencing software for online office hours.

Class meeting times: Mondays from 6:00pm-9:00pm in Founder’s Hall, Room 209.
Work email: dekock@tamuct.edu or email me on Canvas (preferred).
Cell Phone: 903-705-9703 Feel free to call or text me during my office hours if you have questions.

Texas A&M University-Central Texas Mission Statement
Texas A&M University-Central Texas is an upper-level university offering junior and senior-level coursework needed to successfully complete baccalaureate degrees and all coursework leading to the completion of graduate degrees. The University is committed to high quality, rigorous, and innovative learning experiences, and prepares students for lifelong learning through excellence in teaching, service, and scholarship.

Mode of Instruction & Course Access
This course is an online course and uses the Canvas Learning Management System [https://tamuct.instructure.com]. You will use the Canvas username and password communicated to you separately to login to this system. Students will work on separate projects and will meet with the instructor individually. Software being used will include: R/RSudio, Schoology, Latex, GeoGebra, TinkerCad. All course materials will be posted on:

http://rpubs.com/mdekock/458370

Student-Instructor Interaction
I will respond to emails and text messages within 24 hours.
### Course Information

#### Program Goal
Texas A&M University-Central Texas students, upon completion of certification requirements, will be reflective professional educators who make effective educational decisions that support the creation of dynamic learning environments.

#### Course Overview and Description: MTHK 5378.110
This course consists of different projects in mathematics. Students will be expected to master the mathematical concepts related to their respective projects. Projects include:

- a) Design and print mathematics manipulatives with TinkerCad and a 3D printer.
- b) Design and create practice tests for the TeXes 7-12 and 4-8 certification examinations.
- c) Design and create course materials for topics in ‘machine learning’.

Prerequisite: 24 hours of MATH coursework, including MATH 2413, are required before registering for MATH 5378.

#### Course Objective
- a) Understand how to design and print mathematical manipulatives with a 3D printer.
- b) Understand how to create tests on Schoology.
- c) Master material covered on the 7-12 and 4-8 mathematics state content examinations.
- d) Design practice tests for the 7-12 and 4-8 mathematics state content examinations.
- e) Work on a real-life project and apply ‘R’ to perform data analysis and data mining.
- f) Master topics in machine learning: Supervised and Unsupervised machine learning.

#### Student Learning Outcomes
Students will become thoroughly proficient in the following areas:

- g) Use TinkerCad to design 3D objects
- h) Print 3D objects with a 3D printer
- i) Use R Notebooks
- j) All competencies and domains covered on the 7-12 and 4-8 mathematics state examinations:
  - Probability and Statistics
  - Geometry
  - Number concepts
  - Pedagogy
  - Calculus
  - Algebra
Required Reading and Textbook(s)

The student is not required to purchase a hard copy of a textbook.

Course materials:
All course materials will be posted to:
http://rpubs.com/mdekock/458370

Make sure to navigate to the website on a daily basis, as it will be updated regularly.

All assignments need to be submitted to the CANVAS lms.

*A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer. You will be provided additional required course readings from the professor.
Course Requirement

Student Learning and Assessment

| Presentations | The student will be required to use R for statistical analyses and present the findings by creating a video that will be emailed to: dekock@tamuct.edu or uploaded to CANVAS. |

Testing Center
The Office of Academic Support Programs (ASP) provides proctoring, or supervised testing, services for students enrolled in TAMUCT online classes. It is also a part of the Tarleton State and Central Texas College testing networks, serves as a general testing center for Killeen, and is the university resource for verifying and coordinating with proctors at other testing locations.

Testing at TAMUCT is provided free of charge for active TAMUCT students. For non-TAMUCT students, there is a $15 administration fee, which can be paid on the day of the exam. The student is solely responsible for all testing fees.

All testing requests need to be submitted at least 5 business days before the day of the exam. If submitted in less than 5 business days, Academic Support Programs cannot guarantee the administration of that exam.

To take a proctored exam at TAMUCT:

Submit the TAMUCT Testing Form online. [https://www.tamuct.edu/departments/academicsupport/proctoring.php](https://www.tamuct.edu/departments/academicsupport/proctoring.php)

ASP will confirm your requested test time or suggest a new one within two business days.
Plan to arrive at the testing location at least fifteen minutes before the scheduled time. Remember to bring a photo ID, a pencil or pen, and any other supplies that are allowed by your instructor. The proctor is not responsible for providing materials for your test other than scratch paper.
For questions, or if you need testing accommodations, please contact Cecilia Morales in room WH 212C or by:
   Phone: 254.501.5830
   Fax: 254.501.5807
   Email: cecilia.morales@tamuct.edu

Testing Center Hours
Spring available times for proctoring: (see exceptions below)
Hours of Operation

Mondays, Tuesdays, and Thursdays
- 9:00 a.m. to 1:00 p.m. and 2:00 p.m. to 6:00 p.m.

Wednesdays and Fridays
- Reserved for TExES Teacher Certification exams

Closed Daily: 1:00pm - 2:00pm
The testing center is located in Warriors Hall 212.

Evaluation & Assessment (Grading Criteria)

<table>
<thead>
<tr>
<th>Evaluation Item</th>
<th>Percentage</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentations (4 x 50)</td>
<td></td>
<td>20%</td>
</tr>
<tr>
<td>Project (1x 800)</td>
<td></td>
<td>80%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
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</table>

Evaluation Summary:

Grades will be assigned at the end of the semester on the following point basis:
- A = 90-100
- B = 80-89
- C = 70-79
- D = 60-69
- F = 59 and below

Posting of Grades
Grades will be updated regularly and posted to Canvas under “Gradebook” after completion of course assignments.

Course Outline & Calendar
MTHK 5378 The instructor reserves the right to modify the calendar for the benefit of the students.

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Jan 14</th>
<th>Jan 15</th>
<th>Jan 16</th>
<th>Jan 17</th>
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</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Jan 21</td>
<td>Jan 22</td>
<td>Jan 23</td>
<td>Jan 24</td>
</tr>
<tr>
<td></td>
<td>Martin L. King Jr. Day</td>
<td>No class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>Jan 28</td>
<td>Jan 29</td>
<td>Jan 30</td>
<td>Jan 31</td>
</tr>
<tr>
<td>Week 4</td>
<td>Feb 4</td>
<td>Feb 5</td>
<td>Feb 6</td>
<td>Feb 7</td>
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University Procedures & Policies

**Attendance Policy**
Professional behavior and commitment to teaching are expectations. Attendance and punctuality are required. Not only is your attendance required it is expected that you will come to class prepared to engage in your learning process. Being prepared to participate includes completing assigned reading and bringing necessary assignments and materials to class. It is NOT possible to make up the work missed during the class period since it involves the interactions of students, professor, and content. I will not provide “make-up” work. You may access this work through collaboration with a peer.
You are responsible for asking a classmate to take notes, and gather handouts for missed classes. It is your responsibility to find out what you missed. Being prepared to participate includes completing assigned reading and bringing necessary assignments and materials to class.

**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. Honesty and integrity are essential characteristics for teachers. Students are required to act honestly and professionally at all times.

*Any Violation of the Academic Integrity Policy will result in failure of the class (student will receive an “F”).*

**Disability Support and Access Services**

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 an education that is barrier-free. The Office of Disability Support and Access is responsible for ensuring that students with a disability enjoy equal access to the University’s programs, services and activities. Some aspects of this course or the way the course is taught may present barriers to learning due to a disability. If you feel this is the case, please contact Disability Support and Access at (254) 501-5831 in Warrior Hall, Ste. 212. For more information, please visit their website at [www.tamuct/disabilitysupport](http://www.tamuct/disabilitysupport). Any information you provide is private and confidential and will be treated as such.

**Drop Policy**

If you discover that you need to drop this class, you must go to the Records Office and ask for the necessary paperwork. Professors **cannot** drop students; this is always the responsibility of the student. The record’s office will provide a deadline for which the form must be returned, completed and signed. Once you return the signed form to the records office and wait 24 hours, you must go into Warrior Web and confirm that you are no longer enrolled. Should you still be enrolled, **FOLLOW-UP** with the records office immediately? You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the deadline or fail to follow the procedure, you will receive an F in the course.

**Tutoring**

Tutoring is available to all TAMUCT students, both on-campus and online. Subjects tutored include Accounting, Finance, Statistics, Mathematics, and Writing (APA). Tutors are available at the Tutoring Center in Warrior Hall, Suite 111. Visit [www.tamuct.edu/AcademicSupport](http://www.tamuct.edu/AcademicSupport) and click “Tutoring Support” for tutor schedules and contact information. If you have questions, need to schedule a tutoring session, or if you are interested in becoming a tutor, contact Academic Support Programs at 254-501-5836 or by emailing c.garza@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 TAMUCT students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in Mathematics, Writing, Career Writing, Chemistry, Physics, Biology, Spanish, Calculus, and Statistics. To access Tutor.com, click on [http://www.tamuct.edu/departments/academicsupport/tutoring.php](http://www.tamuct.edu/departments/academicsupport/tutoring.php).

**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 TAMUCT 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 TAMUCT 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 homepage: http://www.tamuct.edu/departments/library/index.php.

The University Writing Center

The University Writing Center at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students. The UWC is located in 416 Warrior Hall. The center is open 1pm-6pm Monday-Thursday during the summer semester. 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. Students may also arrange a one-on-one session with a trained and experienced writing tutor. Tutorials can be arranged by visiting the UWC. Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. Sessions typically last between 20-30 minutes. While tutors will not write, edit, or grade papers, they will help students develop more effective invention and revision strategies.

Technology Requirements & Support

Technology Requirements

This course will use the Canvas learning management system.

Logon to https://tamuct.instructure.com/
to access the course.

All course materials will be posted to:
http://rpubs.com/mdekock/458325

Make sure to navigate to the website on a daily basis, as it will be updated regularly.

Students are required to use R/Rstudio for statistical analyses and data visualization.

Technology Support

For technology issues, 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

When calling for support please let your support technician know you are a TAMUCT student.
For issues related to course content and requirements, contact your instructor.

Technology issues are not an excuse for missing a course requirement – make sure your computer is configured correctly and address issues well in advance of deadlines.
Your Professor…

What You Can Expect From Me

It is a great privilege to have the opportunity to work with you during this most exciting time of your educational career. I want to ensure your experience is as successful as possible. It is my hope that when the time comes for you to have your own classroom, you will have the skills necessary to make a lasting impact in the lives of your students. As such, I am available to you at all times during this semester. This course has been designed to offer you support in many areas of successful teaching, including the most problematic areas beginning teachers face.

I will:

- Be a resource to you if you need guidance at any time during educational experience.
- Provide feedback in a timely manner.
- Return e-mails and phone calls usually within 48 hours.
- Take writing, grammar, and spelling into consideration on all assignments.
- Treat each of you with the respect afforded a professional.

University Calendar:
# SPRING 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 19, 2018</td>
<td>Spring Semester Admissions Application Opens</td>
</tr>
<tr>
<td>October 22, 2018</td>
<td>Advising Begins for Spring Semester</td>
</tr>
<tr>
<td>October 22, 2018</td>
<td>Class Schedule Published For Spring Semester</td>
</tr>
<tr>
<td>November 1, 2018</td>
<td>Deadline for Scholarship Applications for the Spring Semester</td>
</tr>
<tr>
<td>November 5, 2018</td>
<td>Registration Opens for Spring Semester</td>
</tr>
<tr>
<td>November 15, 2018</td>
<td>Priority Deadline for International Student Spring Admissions Applications</td>
</tr>
<tr>
<td>December 3, 2018</td>
<td>Priority Deadline for Spring VA Certification Request</td>
</tr>
<tr>
<td>January 2, 2019</td>
<td>Priority Deadline for Spring Admissions applications</td>
</tr>
<tr>
<td>January 10, 2019</td>
<td>Convocation</td>
</tr>
<tr>
<td>January 11, 2019</td>
<td>Deadline for Tuition and Fee Payments (16- &amp; First 8-Week Classes)</td>
</tr>
<tr>
<td>January 14, 2019</td>
<td>Add, Drop, and Late Registration Begins for 16- and First 8-Week. $25 fee assessed for late registrants.</td>
</tr>
<tr>
<td>January 14, 2019</td>
<td>Classes Begin for Spring Semester</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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<tr>
<td>March 11, 2019</td>
<td>Deadline for Faculty Submission of First 8-Week Final Class Grades (due by 3pm)</td>
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<tr>
<td>March 13, 2019</td>
<td>Spring Break – No Class <em>(University Open)</em></td>
</tr>
<tr>
<td>March 14, 2019</td>
<td>Spring Break – No Class <em>(University Open)</em></td>
</tr>
<tr>
<td>March 15, 2019</td>
<td>Deadline for Tuition and Fee Payments (Second 8-Week Classes)</td>
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<tr>
<td>March 15, 2019</td>
<td>Deadline for Clinical Teaching Applications</td>
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<tr>
<td>March 15, 2019</td>
<td>Spring Break – No Class <em>(University Open)</em></td>
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<tr>
<td>March 18, 2019</td>
<td>Add, Drop, and Late Registration Begins for Second 8-Week Classes. $25 fee assessed for late registrants.</td>
</tr>
<tr>
<td>March 18, 2019</td>
<td>Classes Begin for Second 8-Week Session</td>
</tr>
<tr>
<td>March 20, 2019</td>
<td>Deadline for Add, Drop, and Late Registration for Second 8-Week Classes</td>
</tr>
<tr>
<td>March 25, 2019</td>
<td>Deadline to Drop Second 8-Week Classes with No Record</td>
</tr>
<tr>
<td>April 1, 2019</td>
<td>Deadline for GRE/GMAT Scores to Office of Graduate Studies</td>
</tr>
<tr>
<td>April 5, 2019</td>
<td>Deadline to Drop 16-Week Classes with a Quit (Q) or Withdraw (W)</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
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<tr>
<td>April 12, 2019</td>
<td>Deadline for Final Committee-Edited Theses with Committee Approval Signatures to Office of Graduate Studies for Spring Semester</td>
</tr>
<tr>
<td>April 26, 2019</td>
<td>Student End of Course Survey Opens (16- and Second 8-Week Classes)</td>
</tr>
<tr>
<td>April 26, 2019</td>
<td>Deadline to Drop Second 8-Week Classes with a Quit (Q) or Withdraw (W)</td>
</tr>
<tr>
<td>May 10, 2019</td>
<td>Deadline for Applications for $1,000 Tuition Rebate for Spring Graduation (5pm)</td>
</tr>
<tr>
<td>May 10, 2019</td>
<td>Deadline for Degree Conferral Applications to the Registrar’s Office. $20 Late Application Fee.</td>
</tr>
<tr>
<td>May 10, 2019</td>
<td>Deadline to Withdraw from the University for 16- and Second 8-Week Classes</td>
</tr>
<tr>
<td>May 10, 2019</td>
<td>Spring Semester Ends</td>
</tr>
<tr>
<td>May 11, 2019</td>
<td>Commencement Ceremony Bell County Expo Center 7:00 p.m.</td>
</tr>
<tr>
<td>May 12, 2019</td>
<td>Student End of Course Survey Closes (16- and Second 8-Week Classes)</td>
</tr>
<tr>
<td>May 14, 2019</td>
<td>Deadline for Faculty Submission of 16-Week and Second 8-Week Final Class Grades (due by 3pm)</td>
</tr>
<tr>
<td>May 14, 2019</td>
<td>Deadline for Thesis to Clear Thesis Office for Spring Semester</td>
</tr>
</tbody>
</table>