

CE 2152-001 – Computer Tools – Mathcad
Course Syllabus
Spring 2018

Instructor: Dr. James Leininger
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Website: <http://ce2152.utace.net>
Office Hours: T 10:00 am – 12:00 pm
or by appointment

Class Time: T 8:00 am – 9:50 am
Class Room: 239 Nedderman Hall
GTA: none

Faculty Profile: <https://www.uta.edu/mentis/profile/?3463>

Description of Course Content: Introduction to computer aided mathematics, using Mathcad. Solution of engineering problems involving systems of simultaneous linear and nonlinear equations and elementary calculus, use of the tools for visualization.

Student Learning Outcomes: Formulate and solve engineering problems utilizing the computer tool Mathcad and present the problem solutions in a standardized form.

ABET learning outcomes:

- (e) an ability to identify, formulate, and solve engineering problems
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Techniques, Skills, and Modern Engineering Tools Used in this Course: The computer aided mathematics tool Mathcad is the focus of this course.

Required Textbook: **Essential PTC Mathcad Prime 3.0**; Brent Maxfield, P.E., Academic Press;
ISBN-13 978-0-12-410410-5

Policies: Normally, the class will be conducted in accordance with the policies given below. However, it is impossible to anticipate every possible circumstance. The instructor reserves the right to modify the given policies or to deviate from them in unforeseen or unusual circumstances. If there is a policy that you anticipate will affect you in a way that seems unfair, please bring it to the attention of the instructor before the end of the second week of class. After that, the reason for a student initiated change in policy must be compelling.

Assignments: Homework problems will be assigned, submitted, and returned in electronic form in a manner described in a separate document. Students are encouraged to work together and assist one another while completing the homework problems. However, submitted homework must be the work of the individual student. The required presentation format for problems solved in homework and examinations will be covered in class.

Major Assignments and Examinations: This class has no major assignments. There will be three midterm examinations. The dates of all the examinations are given below. There is always a small chance that a midterm examination will be rescheduled. Notice of such a change will be provided as soon as possible. The time of the final exam is set in the UTA final examination schedule.

Examination Schedule	
Midterm Exam 1	Tuesday, February 13
Midterm Exam 2	Tuesday, March 27
Midterm Exam 3	Tuesday, May 1

Attendance: At The University of Texas at Arlington, taking attendance is not required. (New university policy requires that attendance be taken through January 26.) Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I expect regular and punctual attendance of students enrolled in this class. Absences may indirectly affect one's grade. The student is responsible for determining the topics covered during missed classes.

Other Requirements:

Prerequisites: Grade of C or better in PHYS 1443 – General Technical Physics I

Grading:

Component	Weight	Total (T)	Grade
Homework	10%	$90 \leq T \leq 100$	A
Midterm Exam 1	20%	$80 \leq T < 90$	B
Midterm Exam 2	30%	$70 \leq T < 80$	C
Midterm Exam 3	40%	$60 \leq T < 70$	D
		$0 \leq T < 60$	F

Make-up Examinations: Makeup lecture examinations are not given unless required by UTA policy. For university authorized absences, the student is required to follow the university policy as described at: http://web.uta.edu/catalog/content/general/academic_regulations.aspx#9 and in the following section. If an examination is missed as a result of an illness, the following policy applies. It is the responsibility of the student to provide acceptable, written documentation from a recognized medical professional stating that the health of the student or his classmates would have been jeopardized by the student's attendance at the examination. The documentation must be presented within one week of the student's return to class. For excused absences, unless a makeup examination is required by university policy, the score on the final exam will be used to replace the first missed lecture exam. If arrangements are made well in advance, a lecture examination can usually be taken before the scheduled time and a more lenient excuse policy is applied. The treatment of missed examinations, not covered by this policy, will be determined on a case by case basis.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional two hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

For undergraduate courses, see <http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>.

For student complaints, see <http://www.uta.edu/deanofstudents/student-complaints/index.php>.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://web.uta.edu/aao/fao/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA), and Section 504 of the Rehabilitation Act. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.*

Title IX Policy: The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

Electronic Communication Policy: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

In addition, the class has an internet website – <http://CE2152.utace.net>. The website will include the class schedule, homework and examination solutions, and other resources.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is a stairwell located to the left (east) out the class room door. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Each student is encouraged to subscribe to the MavAlert system that will send information in case of an emergency to your cell phone or email account. Subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.php>

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

The IDEAS Center (2nd Floor of Central Library) offers free tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

The English Writing Center (411LIBR): [Optional.] The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at <http://uta.mywconline.com>. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see www.uta.edu/owl for detailed information on all our programs and services. The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>.

Librarian to Contact: Martin Wallace, 817-272-3924, martin.wallace@uta.edu.

Course Schedule:

As the this schedule is modified, the schedule on the class website will be updated. This schedule includes a reading assignment, the topic of each class, and a link to class notes as they become available. The student should read the material to be covered before and after the specified class.

Date	Chapters	Topics
Jan 16	1	Class Organization, Introduction to Mathcad
Jan 23	3, 4	Variables and Regions, Simple Functions
Jan 30	6	Arrays, Vectors, and Matrices
Feb 6	5	Units
Feb 13		Midterm Exam 1
Feb 20	7	Selected PTC Mathcad Functions
Feb 27	8	Plotting
Mar 6	9	Simple Logic Programming
Mar 13		Spring Break
Mar 20	12	Advanced Programming
Mar 27		Midterm Exam 2
Apr 3	11	Solving Engineering Equations
Apr 10	13	Calculus and Differential Equations
Apr 17	17, 18	Templates, Standard Calculation Worksheets
Apr 24	10	Symbolic Calculation
May 1		Midterm Exam 3

I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.