

Math 4303 (3 credits)

CRN 25730

TuTh 4:30-5:50, LART 207

FUNDAMENTALS OF MATH

Syllabus

Spring 2019

Instructor: **Dr. Art Duval**

office: **Bell Hall 303**

phone: **747-6846**/office (24hrs./day; if I'm not in, please leave a message)

747-6502/fax (include a cover sheet with my name, please)

545-1788/home (9am–9pm only, please)

internet: adual@utep.edu

<http://www.math.utep.edu/Faculty/duval/home.html>

Office hours: **Mon, Wed, 10:00–11:00; Tue, Thu, 1:00–2:00**. Please feel free to come by my office any time during scheduled office hours. You are welcome to visit at other times, but in that case you might want to make an appointment, just to make sure that I will be there then. You can make an appointment simply by talking to me before or after class, by calling me at my office or at home, or by sending e-mail.

You may also ask any questions directly via phone or e-mail. If I'm not in when you call, please leave a message on the voice-mail or answering machine with your name, number, and a good time for me to call you back. I will try to respond to your phone or e-mail message as soon as possible.

Website: <http://www.math.utep.edu/Faculty/duval/class/4303/191/home.html>

Here you will find this syllabus with relevant links, including homework and reading assignments for the whole semester, as they are announced. Other resources may become available.

Prerequisites: MATH 3325, or an equivalent course where you learn the basics of writing proofs. I further recommend that you take this course only after taking several other advanced (proof-based) courses.

COURSE OBJECTIVES: This course was designed as a capstone experience to your mathematical preparation to teach high school math, by being the connection between your college courses and the topics you will teach in high school. However, this is not a pedagogy course, or even a math methods course, and it is not a repeat or review of high school math (though you may find yourself understanding better some of the topics and ideas you first saw in high school); in particular, you will have to prove theorems.

Upon successful completion of this course, you will be able to find for yourself the deeper mathematics underlying topics from high school. In particular, you will be able to explain why the rules and procedures of high school math work as they do, and why the definitions are set as they are. You will be able to place high school math problems in larger context; you will be able to show how they generalize, and what other problems they relate to.

Particular topics include relations and functions, and exponential and logarithmic functions. If time permits, we will also consider transformation of functions, and fields.

Textbook: This semester I am piloting curriculum materials that are being designed by a cohort of colleges funded by the National Science Foundation. This project, MODULE(S²), is specifically designed for secondary mathematics teachers. I attended a workshop this summer to learn about the materials. I am excited to bring something new and innovative to the class. I will be supplying the “book” as .pdf files to you as we move along. So, there is no textbook to buy, and there is no cost for the materials.

GRADES:

Participation (5%) Your active participation in class is essential to the success of everyone in the class: yourself and your classmates. Active participation does not mean always knowing the correct answer, but it does mean helping the conversation forward with your ideas and your feedback on others’ ideas, including sharing any confusion you may be having.

Homework(25%) Written homework will be assigned approximately weekly, announced in class, and posted on the course website. These solutions should be written clearly and completely. Assignments will be due at the *beginning* of class, and will not be accepted after then, except in extenuating circumstances that you explain to me as soon as possible. Incomplete homeworks will be accepted, though, so please turn in whatever work you have completed when homework is due. You are encouraged to work together on your homework, but you must write up your solutions by yourself. Your lowest homework score will be dropped.

Videos (10%) You will be asked to videotape yourself teaching a particular topic(s). A cell phone or tablet will be sufficient.

Exams (15% each) There will be two in-class, closed-book exams on the following days:

Thu. 28 Feb.

Thu. 18 Apr.

Final (30%) The final exam will be comprehensive over all material we discuss in class. The final will be on

Tue., 14 May, 4:00–6:45 p.m.

Makeup exams can be given only in extraordinary and unavoidable circumstances, and with advance notice.

Once you begin an exam, you will not be allowed to leave the classroom until you have finished the exam. There will be no bathroom breaks. If you have a medical reason for needing more frequent bathroom breaks, please provide documentation in advance.

POLICIES:

Academic dishonesty: It is UTEP’s policy, and mine, for all suspected cases or acts of alleged scholastic dishonesty to be referred to the Office of Student Conduct and Conflict Resolution for investigation and appropriate disposition. See Section II.1.2.2.1 of the Handbook of Operating Procedures.

Attendance: Due to the course structure, attendance is mandatory. There is no particular penalty for missing a particular class, but you cannot get a good participation grade if you miss too many classes. I will usually “excuse” an absence if you tell me about it in advance, or, in cases of emergencies, as soon as possible afterwards. My goal is for class meetings and activities to complement, rather than echo, the textbook, and thus for every class to be worth attending.

Drop date: The deadline for student-initiated drops with a W is Friday, April 5. After this date, you will not be able to drop the class (as per the Dean’s office). Furthermore, a grade of incomplete is only for extraordinary circumstances, such as a missed exam.

I hope everyone will complete the course successfully, but if you are having doubts about your progress, I will be happy to discuss your standing in the course to help you decide whether or not to drop. You are only allowed three enrollments in this course, and students enrolled after Fall 2007 are only allowed six withdrawals in their entire academic career, so please exercise the drop option judiciously.

Courtesy: We all have to show courtesy to each other, and the class as a whole, during class time. Please arrive to class on time (or let me know when you have to be late, and why); do not engage in side conversations when one person (me, or another student) is talking to the whole class; turn off your cell phone (or, for emergencies, at least set it to not ring out loud), and do not engage in phone, email, or text conversations during class.

Disabilities: If you have, or suspect you have, a disability and need an accommodation, you should contact the Center for Accommodations and Support Services (CASS) at 747-5148, cass@utep.edu, or Union East room 106. You are responsible for presenting to me any CASS accommodation letters and instructions.

Exceptional circumstances: If you anticipate the possibility of missing large portions of class time, due to exceptional circumstances such as military service and/or training, or childbirth, please let me know as soon as possible.