Functions and Modeling (MATH 2325)

Meeting Times: 2:30-3:25 pm MWF in RBN 3040

Last day to withdraw: Monday, November 2, 2019

Instructor: Nathan Smith

Office: RBN 4007

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Office Hours: TBA; tentatively 11:15-12:10 MWF. I will survey my classes for good times for some online/zoom hours. Other times by appointment.

Text: None required

Course Topics: Functions (linear, exponential, quadratic), modeling, parametric and polar coordinates, vectors, complex numbers, all with an eye toward the middle and secondary classroom. It is expected that not all of the mathematics we will study in this class will be "new" to you, but the perspective from which it is approached may well be. You will engage in problem solving and inquiry based learning. Particular emphasis will be given to connections among University level mathematics topics and to connections between University level mathematics and the middle and secondary curricula.

In addition, part of what we are doing in this course is modeling a discovery learning classroom environment. Most of us come through our school experiences with little exposure to this type of learning, and many of you will be expected to at least partially implement this type of learning environment in your classrooms. Part of the point of this class is for you to have the experience of a discovery learning mathematics class.

Student Learning Outcomes: By the end of the course students should be able to:

1. demonstrate a depth of content knowledge with regard to important secondary mathematics topics such as linear, exponential, logarithmic, and quadratic functions, parametric relations, polar relations, vectors, and complex numbers.

2. generate or work with relevant lab or exploration data and use regression, function pattern, and systems methods to produce a model of the data.

3. present mathematical ideas and topics in a knowledgeable and effective manner.

4. identify mathematics content connections between the various levels of secondary mathematics curriculum and between secondary and university level curriculum.

Grading:

- Test1: $\frac{1}{5}$ of your semester grade.

- Test2: $\frac{1}{5}$ of your semester grade.

- Final: $\frac{1}{5}$ of your semester grade.

- Written work (Class assignments, HW, Labs, etc.): $\frac{2}{5}$ of your semester grade.

Homework Help: You are always welcome to come by my office for help with homework. I will be in my office during the posted office hours. If I am in my office you are also welcome to just drop in, however I reserve the right to be busy doing something else and if I can't help you immediately we can usually find a time that is better for both of us. Before coming to my office for homework help, you should have at least attempted the problems that you have questions about.

Missed work: It is not expected that you will miss a test. If an emergency situation or university-sanctioned event forces your absence on the day of the test and if you have discussed the situation in advance with the instructor, your final exam grade will be used to replace your test. Because much of the learning in this class revolves around discovery learning activities undertaken during the class time attendance is extremely important. I am not responsible enough to handle late work (getting it on the same pile as other papers from the same assignment, grading it, recording the grade, etc.).

Important Covid-19 Information for Classrooms: Students are required to wear face masks covering their nose and mouth, and to follow social distancing guidelines, at all times in public settings (including classrooms and laboratories), as specified by Procedures for Fall 2020 Return to Normal Operations. The UT Tyler community of Patriots views adoption of these practices consistent with its Honor Code and a sign of good citizenship and respectful care of fellow classmates, faculty, and staff.

Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher than normal temperature will be excused from class and shoulud stay at home and may join the class remotely. Students who have difficulty adhering to the Covid 19 safety policies for health reasons are also encouraged to join the class remotely. Students needing additional accommodations may contact the Office of Student Accessibility and Resources at University Center 3150, or call (903) 566-7079 or email saroffice@uttyler.edu.

Recording of Class Sessions: Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in this course unless appropriate consent is obtained from all releveant students. Class recordings are reserved for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

Student Academic Conduct: It is your responsibility to learn the material in this course for your own benefit. You should not let this discourage you from working together on your

homework but in the end what you turn in should reflect your understanding, not just be copied from someone else. *During the tests and the final exam, a code of honor will apply under which students are to work alone and neither give help to others nor receive help from any sources.* Students are also expected to help enforce this code. Students are encouraged to obtain a copy of *A Student Guide to Conduct and Discipline at UT Tyler*, available in the Office of Student Affairs.

University Policies: For University policies concerning Students' Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Corse Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, and the Social Security and FERPA Statement please see: *http://www.uttyler.edu/academicaffairs/files/syllabuspolicy.pdf.*