

Course Syllabus



Edit

Course Logistics and Instructor Contact Information

Functions and Modeling

MATH 2325

T/Th 2:00 - 3:20 in FAC 2006.

Instructor Name: Nathan Smith

Office Location: RBN 4007

Email: nsmith@uttyler.edu

Office Hours: TBA

Course Information

TEXT: There is no text to purchase.

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: There will be two tests and a final exam, tentatively September 24, November 5, and December 8 (2-4pm) respectively. Each of these will constitute 25% of your final grade.

The remaining quarter of your grade will be based on summary write-ups of in class assignments.

Earning an overall weighted average of 90% or greater on your tests/quizzes/exams as described above guarantees a semester grade of A, an overall weighted average of 80% or greater guarantees a B, etc.

ARTIFICIAL INTELLIGENCE: UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical,

societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, you may not use AI tools to produce anything turned in for a grade.

[Student Resources \(https://uttyler.instructure.com/courses/53570/pages/student-resources-3\)](https://uttyler.instructure.com/courses/53570/pages/student-resources-3)

[University Policies and Information \(https://uttyler.instructure.com/courses/53570/pages/university-policies-and-information\)](https://uttyler.instructure.com/courses/53570/pages/university-policies-and-information)

Course Outline: There are five units in this course.

- Proportional and linear Situations
 - Field of Vision activity
 - Six cats six rats six minutes
 - cups (m-b)
 - proportional triangles and slope, using table, differences
 - integral points problem
 - m-b plane
 - regression
- Exponential Functions
 - exponential growth/decay, add-add becomes add-multiply
 - "differential equations" activity
- Quadratics
 - fun with parabolas
 - fun with conics
 - more fun with parabolas
 - falling spheres
- Sequences
 - sequences
 - double sequences and differences – add-add, multiply-multiply, etc.
 - charts, differences, fitting function to sequence

- Systems
 - stamp problem
 - "charts"
 - systems and vectors

UNIVERSITY POLICIES

In this course we will follow

- [university policies \(https://docs.google.com/document/d/e/2PACX-1vQXRIbySwSUh3-Ow_8tVR0BoV9Ck3bKN1yTVExKtxygUWZgQ1c1LGttITyN6DpgDVN_ucMP9O12M50G/pub\)](https://docs.google.com/document/d/e/2PACX-1vQXRIbySwSUh3-Ow_8tVR0BoV9Ck3bKN1yTVExKtxygUWZgQ1c1LGttITyN6DpgDVN_ucMP9O12M50G/pub).

Too, please be aware of UT Tyler

- [student resources \(https://docs.google.com/document/d/e/2PACX-1vRaJGg-hPnk5QtllDwceH5NWY94GijJFgVdtXwE1kjs_UGwXlv-cMpfErK84xN9kZLT21Co_GcBYfg7/pub\)](https://docs.google.com/document/d/e/2PACX-1vRaJGg-hPnk5QtllDwceH5NWY94GijJFgVdtXwE1kjs_UGwXlv-cMpfErK84xN9kZLT21Co_GcBYfg7/pub).