MATH 1352. Concepts and Applications—
Syllabus

Thomas W. Judson, Professor

Department of Mathematics and Statistics

MATH 1352 Calendar

Course Description

Problem solving and critical thinking skills applied to the study of a broad range of topics, including sequences and series, recursion, and mathematical modeling with families of functions, including connections to the classroom. For a more detailed course description, Student Learning Outcomes, and Exemplary Educational Objectives, go to http://www2.sfasu.edu/math/docs/syllabi/MATH1352Syllabus.pdf

Course Prerequisites

MATH 1351 with a grade of C or better

Course Time and Meeting Place

Classes will meet at the following times.

- MATH 1352–001 meets at 2:30–3:45 MW in Math 209.

Instructor

- Thomas W. Judson, Professor
  Department of Mathematics and Statistics
- Office: Math 316
- TEL: (936) 468–1704
- Email: judsontw @ sfasu.edu
- Office Hours:
  - Monday: 5–6 PM (in Math 316)
  - Tuesday: 12:15–1:45 PM (in Math 316);
  - Wednesday: 5–6 PM (in Math 316)
  - Thursday: 12:15–1:45 (in Math 316)
  - Additional office hours by appointment
Textbook


Calculators

Although no calculator is required for MATH 1352, a simple four-function calculator might be useful. We encourage you to bring your calculator to class with you everyday. However, you should not rely on computers and calculators to such an extent that they keep you from developing your own skills. Technology should be used as an aid, but without a good understanding of the underlying mathematical concepts, the calculator will quite happily mislead you without your even knowing it. In general, technology is a good thing, but as with everything, sometimes too much of a good thing can lead to problems.

Grading and Exams

The will be three 75 minute exams and a comprehensive 150 minute final exam. Your course grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Date</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook Homework</td>
<td>Class assignment due according to dates on the <a href="#">MATH 1352 Calendar</a>.</td>
<td>20%</td>
</tr>
<tr>
<td>Exam I</td>
<td>Exam dates are on the <a href="#">MATH 1352 Calendar</a>.</td>
<td>20%</td>
</tr>
<tr>
<td>Exam II</td>
<td>Exam dates are on the <a href="#">MATH 1352 Calendar</a>.</td>
<td>20%</td>
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<tr>
<td>Exam III</td>
<td>Exam dates are on the <a href="#">MATH 1352 Calendar</a>.</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>Exam dates are on the <a href="#">MATH 1352 Calendar</a>.</td>
<td>20%</td>
</tr>
</tbody>
</table>

Semester numerical scores will be converted into letter grades according to the following method.
<table>
<thead>
<tr>
<th>Range of numerical values</th>
<th>Corresponding Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>90–100</td>
<td>A</td>
</tr>
<tr>
<td>80–89</td>
<td>B</td>
</tr>
<tr>
<td>70–79</td>
<td>C</td>
</tr>
<tr>
<td>60–69</td>
<td>D</td>
</tr>
<tr>
<td>0–59</td>
<td>E</td>
</tr>
</tbody>
</table>

When we calculate your final grade at the end of the course, we will calculate a score on a 0–100 point scale using the scores that you have obtained during the course, and using the grade breakdown given above. Your course grade will then be obtained using this table. In the event of a fractional score, we will always round up to the nearest integer. *There is no provision for extra credit in this course.*

**Exam corrections.** You rework any exam questions for which you lost credit. Errors should also be classified according to the instructor’s criteria. These assignments will be returned to you for editing until they are completely correct. Credit for this assignment will not be awarded until all errors are completely corrected. These assignments are classified as homework and will not alter exam grades.

**Restoration Policy.** If you score **70% or better** on the final exam and this higher than your lowest midterm exam, we will replace your lowest midterm grade with your final exam grade. The restoration policy does not apply to your homework grade.

**Exam Policy**

Exams are scheduled far in advance, and it is impossible to move the time or date. However, in rare cases where it is impossible for an individual to take the exam at the scheduled time, we will work with you to make other arrangements. Exceptions for taking the exam out of sequence are the following:

1. A medical excuse. Please provide proper documentation according to university rules.
2. A University sponsored event such as an athletic tournament, a play, or a musical performance. Your coach or director must contact us in advance. Athletic practices and rehearsals do not fall into this category.
3. A religious holiday. Please send a short email explaining the situation.
4. Extreme hardship such as a family emergency. Please have the proper university office us.
The above are the only allowable excuses for taking the exam before the scheduled time. Under no circumstances do we give late exams. Since we can only accomodate a limited number of students taking the exam at an earlier time, please make sure that you fall into one of the above categories before you contact us. If you miss an exam due to illness or a family emergency, you will not be penalized. We will assign you a grade based on the rest of your coursework. If you have a conflict with the final exam, please contact your MATH 1352 instructor as soon as possible. Students with an accommodation from Disability Services may take the final exam at an earlier time during finals week. All other out-of-sequence final exams must be approved by the Dean of the College of Science and Mathematics.

Homework and Quizzes

Homework assignments from the textbook can be found on the calendar page (http://faculty.sfasu.edu/judsontw/math1352/calendar.html).

Homework will also be assigned from our textbook and graded. Your daily average is based on your grades from homework from the textbook and any other daily grades that are assigned for a grade. We will drop your three lowest homework grades. Late homework will not be accepted.

Making Your Homework Easy to Read and Easy to Grade

- Make sure your handwriting is legible.
- Homework with multiple pages should be stapled in the upper left-hand corner. If you are handing in homework electronically to a dropbox, make sure that you hand in a single, readable PDF. Please do not submit photos of your work.
- In the upper right-hand corner you should write (in this order):
  - Your name
  - MATH 1352–001
  - The homework set number
  - The due date of the homework
- Problems should be clearly labeled and numbered on the left side of the page. There should also be a visible separation between problems. Don’t forget to staple your homework together if you are submitting several pages. If you are handing in an assignment to a dropbox, make sure that you submit a single, readable PDF. Do not submit separate photos for each page of the assignment. They will not be graded.
- You should leave the entire left margin blank so that the grader can use this space for scoring and comments.
- To ensure that each problem is graded, problems and solutions should be written in the order that they are assigned.
- It is good practice to first work out the solutions to homework problems on scratch paper, and then to neatly write up your solutions. This will help you turn in a clean finished product.
- You should write up your solutions by yourself. You should always acknowledge any help received at the top of the assignment or in the right-hand margin.

The Classroom
Any questions you ask in class will likely be ones that other students will want answered as well, so get over any hesitation you might have and ask questions as the material is presented. You will not be penalized for doing this, no matter how trivial or simple you think your questions might seem. Remember, the class is being held for you to learn the material, not just to give you a time to copy notes off of a blackboard, so be sure to get help when you need it and stay involved in your class.

**Getting Help with MATH 1352**

- Individual and group help is available at the Academic Assistance and Resource Center (AARC), which is located on the first floor of the Steen Library ([https://library.sfasu.edu/aarc/](https://library.sfasu.edu/aarc/)). You can find information on power hours, learning teams, and one-on-one tutoring here as well as the dates for open enrollment.
- Remember to take advantage of office hours. You don't have to make an appointment for office hours—just drop in.

**Add/Drop Policy**

The Add/Drop Policy can be found at [http://www.sfasu.edu/policies/add_drop.asp](http://www.sfasu.edu/policies/add_drop.asp)

**Attendance Policy**

*Regular attendance is expected in MATH 1350.* Attendance and Excused Absences Policy can be found at [http://www.sfasu.edu/policies/class_attendance_excused_abs.asp](http://www.sfasu.edu/policies/class_attendance_excused_abs.asp)

**Acceptable Student Behavior**

Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

**You are off the grid in MATH 1350.** You may use your tablet or notebook computer to access the textbook in class; otherwise, consider yourself off the grid when you are in MATH 1350. Please be respectful of your fellow students and your instructor. Cell phone use and texting are not allowed in class. Remember to turn your cell phone off and place it in your bag or backpack before entering the classroom. Any cell phone that is visible will be collected and returned to you at the end of class. Exceptions to this rule include volunteer firemen, physicians on-call, those who are on the shortlist to receive an organ transplant, etc.
## MATH 1352. Concepts and Applications—Calendar

**Thomas W. Judson, Professor**

**Department of Mathematics and Statistics**

**MATH 1352 Syllabus**

**MATH 1352 Course Calendar**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Activity (used on this date)</th>
<th>Section, Page, Problem Numbers (due on Fridays at 11:59 PM unless indicated otherwise)</th>
<th>Suggested Practice Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monday 8/23/21</td>
<td>Course Orientation §2.5. Percent</td>
<td>2R, 2S, 2U</td>
<td>§2.5. Problems 4, 9, 10; pp. 88–90.</td>
<td>Practice Exercises for §2.5. Exercises 1, 2, 3; pp. 85–88</td>
</tr>
<tr>
<td></td>
<td>Wednesday 8/25/21</td>
<td>§3.5. Why We Add and Subtract Negative Numbers the Way We Do</td>
<td>3U</td>
<td>§3.5. Problems 2, 4; p. 139. Last day to register/change schedule is Thursday, August 26, 2021</td>
<td>Practice Exercises for §3.5. Exercises 1, 2, 4; pp. 138–139</td>
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<td></td>
<td>Wednesday 9/1/21</td>
<td>§5.3. Extending Multiplication to Negative Numbers</td>
<td>5J</td>
<td>§5.3. Problems 1, 2; p. 213</td>
<td>Practice Exercises for §5.3. Exercises 1, 2, 3; p. 212</td>
</tr>
<tr>
<td>3</td>
<td>Monday 9/6/21</td>
<td>§5.4. Powers and Scientific Notation</td>
<td>5K</td>
<td>§5.4. Problems 3, 5, 9; p. 219–220</td>
<td>Practice Exercises for</td>
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<tr>
<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>Activity (used on this date)</td>
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<td>4</td>
<td>Monday 9/13/21</td>
<td>§6.5. Fraction Division with the How-Many-Units-in-1-Group Perspective</td>
<td>6P, 6Q</td>
<td>§6.5. Problem 14; pp. 268–269</td>
<td>Practice Exercises for §6.5. Exercises 1, 2, 5; pp.266–268</td>
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<td>Wednesday 9/15/21</td>
<td><em>Exam I</em></td>
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<td></td>
<td>Wednesday 9/29/21</td>
<td>§7.3. The Values of a Ratio: Unit Rates and Multipliers</td>
<td>7F, 7G</td>
<td>§7.3. Problems 5, 8, 10; pp. 305–306</td>
<td>Practice Exercises for §7.3. Exercises 1, 2; pp. 304–305</td>
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<tr>
<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>Activity (used on this date)</td>
<td>Section, Page, Problem Numbers (due on Fridays at 11:59 PM unless indicated otherwise)</td>
<td>Suggested Practice Problems</td>
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<td></td>
<td>Wednesday 10/13/21</td>
<td>Exam II</td>
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<tr>
<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>Activity (used on this date)</td>
<td>Section, Page, Problem Numbers (due on Fridays at 11:59 PM unless indicated otherwise)</td>
<td>Suggested Practice Problems</td>
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<td>2, 5, 6; pp. 441–443</td>
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<td>11/10/21</td>
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<td></td>
<td>Monday</td>
<td>§16.2. Counting the Number of Outcomes:</td>
<td>16F, 16G</td>
<td>§16.2. Problems 1, 8; pp. 735–736</td>
<td>Practice Exercises for §16.2. Exercises 1, 3, 4; pp. 733–735</td>
</tr>
<tr>
<td>14</td>
<td>11/15/21</td>
<td>Independent Versus Dependent</td>
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<td></td>
<td>Wednesday</td>
<td><em>Exam III</em></td>
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<td>11/17/21</td>
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<td></td>
<td>Monday</td>
<td><em>Thanksgiving Recess</em></td>
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<tr>
<td>15</td>
<td>11/22/21</td>
<td>No Class</td>
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<tr>
<td></td>
<td>Wednesday</td>
<td><em>Thanksgiving Recess</em></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>11/24/21</td>
<td>No Class</td>
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<tr>
<td></td>
<td>11/29/21</td>
<td>Experiments</td>
<td></td>
<td>Last day to drop a class is Monday, November 29, 2021.</td>
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<tr>
<td></td>
<td>Wednesday</td>
<td>§16.4. Using Fraction Arithmetic to Calculate</td>
<td>16L, 16M</td>
<td>§16.4. Problems 2, 12; pp. 748–751</td>
<td>Practice Exercises for §16.4. Exercises 1, 2, 3; p. 747–748</td>
</tr>
<tr>
<td>16</td>
<td>12/1/21</td>
<td>Probabilities</td>
<td></td>
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<tr>
<td></td>
<td>Friday</td>
<td><em>Final Exam for MATH 1352-001 at 8–10am</em></td>
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<td></td>
<td>12/10/21</td>
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Last modified: August 24, 2021
Math 1352 – Concepts and Applications
Course Syllabus

Course description: Problem solving and critical thinking skills applied to the study of a broad range of topics, including sequences and series, recursion, and mathematical modeling with families of functions, including connections to the classroom.

Credit hours: 3
The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;

2. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

Course Prerequisites and Corequisites: Math 1351.

Course outline:

- The Real Number System          20%
  o Common Subsets of the Real Numbers
  o Decimals and Real Numbers
  o Connections between Fractions and Decimals in the Context of Terminating and Nonterminating Decimals
  o Connections to the Classroom

- Algebraic Thinking          65%
  o Sequences, Series, and Recursion (Including the Fibonacci Sequence)
  o Arithmetic and Geometric Progressions as Functions; Connections to Recursive and Closed Form Rules
  o Simulations as a Tool to Model and Solve Problems
  o Developing and Validating Conjectures about Patterns and Relationships in Data Presented in Tables, Sequences, or Graphs
  o Finite Differences
  o Interpreting and Using Graphs for Mathematical Modeling
  o Problem Solving Strategies
  o Connections to the Classroom

- Standards          15%
  o National and state mathematics standards for grades EC-8
    ▪ Reference: Texas Essential Knowledge and Skills (TEKS), Texas Education Agency
  o National and state mathematics standards for beginning teachers of grades EC-8
Academic Integrity
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work.

Definition of Academic Dishonesty (SFA policy 4.1):
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment;
- helping or attempting to help other student(s) in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:
- submitting an assignment as one’s own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source;
- incorporating the words or ideas of an author into one's paper or presentation without giving the author credit.

Withheld Grades Semester Grades (SFA Policy 5.5)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices.

SFASU Mental Health Statement: SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

sfasu.edu/math
Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline  1(800) 273-TALK (8255)
Crisis Text Line:  Text HELLO to 741-741

Acceptable Student Behavior
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy 10.4). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

Student Learning Outcomes (SLO): At the end of MTH 129, a student who has studied and learned the material should be able to:

1. Identify the number sets. [SBEC: I]
2. Identify and define recursively and explicitly (when possible) arithmetic and geometric sequences. [SBEC: II, V]
3. Use finite differences to find the closed form rule for sequences defined by a polynomial. [SBEC: II]
4. Use geometric series to find the rational number representation of a repeating decimal. [SBEC: I, II, V]
5. Define relations and represent them in a variety of ways. [SBEC: II]
6. Determine whether a relation satisfies the reflexive, symmetric, and transitive properties. [SBEC: II, V]
7. Define functions and function properties. [SBEC: II]
8. Identify the function families. [SBEC: II]
9. Interpret graphs of functions. [SBEC: II, V]

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

Texas State Board for Educator Certification (SBEC): Mathematics Standards: Standard I. Number Concepts: The mathematics teacher understands and uses numbers, number systems and their structure, operations and algorithms, quantitative reasoning, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics. Standard II. Patterns and Algebra: The mathematics teacher understands and uses patterns, relations, functions, algebraic reasoning, analysis, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics. Standard V. Mathematical Processes: The mathematics teacher understands and uses mathematical processes to reason mathematically, to solve mathematical problems, to make mathematical connections within and outside of mathematics, and to communicate mathematically.

Date of document: 08/09/2021