CoSM Class Syllabus/Policy
MATH 4180: Seminar in Mathematics II, Fall 2021

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Office: Math 306
Office Hours: MTW 2:30–3:30pm, TR 11am–noon, or by arrangement.
Department: Mathematics and Statistics
Class meeting time/place: Section 1: W 3–4:15, Math 213

Course Description: Student participation in general and specific topics in mathematics; separate section for mathematics teacher certification. Because enrollment levels do not justify a separate section for teacher certification, activities will be adjusted to best benefit students seeking mathematics teacher certification. Course prerequisites: MTH 4330 or concurrent enrollment. This course is designed to be taken in a student’s last year of the Bachelor of Science in mathematics program.


Program Learning Outcomes (PLO): Students graduating from SFASU with a B.S. Degree and a major in mathematics will:

1. Demonstrate comprehension of core mathematical concepts. (notion of theorem, mathematical proof, logical argument)

2. Execute mathematical procedures accurately, appropriately, and efficiently. (calculus, algebra, routine, nonroutine, applied)

3. Apply principles of logic to develop and analyze conjectures and proofs. (quantifiers, breaking down mathematical statements, counterexamples)

4. Demonstrate competence in using various mathematical tools, including technology, to formulate, represent, and solve problems. (calculus tools, algebra tools, applied tools, nonstandard problem solving)

5. Demonstrate proficiency in communicating mathematics in a format appropriate to expected audiences. (written, visual, oral)

Student Learning Outcomes (SLO): In MTH 4180, students will demonstrate (as appropriate to topic):

1. Comprehension of core mathematical concepts. [PLO 1]

2. Procedural fluency. [PLO 2]

3. Competencies in using various mathematical tools for problem solving. [PLO 4]
4. Sound mathematical reasoning. [PLO 1,3]

5. An understanding of the development and connectedness of mathematical ideas. [PLO 1]

6. Proficiency in communicating mathematics in a format appropriate to expected audiences. [PLO 5]

Course Requirements:

- **Presentations on a nonstandard mathematical problem** begun in class and continued on your own. Your work on this problem and its presentation will be the main focus of this course. Your presentation will be given twice; the second presentation (at least two weeks later) should incorporate feedback you receive on your first presentation. Your presentation should incorporate slides (PowerPoint, Beamer or other) and should last about 15 minutes, plus time for questions from the audience. Expectations are listed below in the “Grading Policy” section. You should expect to meet with the professor regarding your problem, and to practice your presentation before giving it to the class. Mathematics faculty and students are encouraged to attend our presentations, and your presentations will be videotaped.

- **Written work** on your chosen problem to accompany your presentation. This should include neat, detailed mathematical work to support claims and conclusions made during your presentation.

- **Providing feedback on your peers’ presentations.** Written rubrics to turn in will be provided by the instructor.

- **Reading, responding to, and discussing the required text in class.**

- **D2L access:** You will be required to access SFAs Learning Management Software (at https://d2l.sfasu.edu) periodically to access course materials. This will include viewing and a quiz on *Technically Speaking*, a series of videos about how to give an effective mathematics presentation.

- **In-class problem-solving activities**, designed to foster critical thinking, perseverance, and synthesis of different types of mathematical information into one endeavor. Active engagement in these activities is expected. These problems will be assigned to students to present, twice, near the end of the semester.

- **Attendance at three extracurricular mathematical activities**, which may include the Texas Undergraduate Math Conference, math teachers’ circle meetings, department colloquia, taking the Putnam exam, or other activities. Math club and Pi Delta Tau meetings are excluded. You will be expected to turn in a one-page (typed, 12-point font, double-spaced) reflection for each activity. For students preparing for a career in secondary teaching, one of these activities must be a teaching certification preparation meeting (time and place to be determined; no reflection assignment is required for this meeting).

- **Résumé critique and mock interview** through SFA Career Services.

- Final Exam Week Meeting, 2 hours, occurring Friday, 10 Dec, 10:30–12:30. While there will be no final exam, presentations will be given during this time.
• Initiative to seek help outside of class, in addition to required appointments with the professor, may be necessary in order to succeed in the course.

**Course calendar/outline:** (Calendar subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Orientation/Introductions, Problem-solving activity</td>
</tr>
<tr>
<td>2</td>
<td>Problem-solving activities</td>
</tr>
<tr>
<td>3</td>
<td>Problem-solving activities</td>
</tr>
<tr>
<td>4</td>
<td>Problem-solving activities</td>
</tr>
<tr>
<td>5</td>
<td>Problem-solving activities</td>
</tr>
<tr>
<td>6</td>
<td><em>Technically Speaking</em> due; presentation sign-ups; visitor presentation; <em>5 Elements</em>, ch 0,1</td>
</tr>
<tr>
<td>7</td>
<td>Visitor presentation; <em>5 Elements</em> ch 2,3</td>
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<tr>
<td>8</td>
<td>Visitor presentation; <em>5 Elements</em> ch 4,5</td>
</tr>
<tr>
<td>9</td>
<td>Flexible</td>
</tr>
<tr>
<td>10</td>
<td>Practice presentations</td>
</tr>
<tr>
<td>11</td>
<td>Practice presentations</td>
</tr>
<tr>
<td>12</td>
<td>Final presentations</td>
</tr>
<tr>
<td>13</td>
<td>Thanksgiving Holiday—no class</td>
</tr>
<tr>
<td>14</td>
<td>Final presentations</td>
</tr>
<tr>
<td>15</td>
<td>Final presentations</td>
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</tbody>
</table>

**Grading Policy:** This course is graded on an A–F scale; grades are based on attendance, satisfactory completion of assignments, participation in class activities, and the quality of the final presentation, including incorporation of feedback from the first presentation. *Late work will not be accepted and there is no extra credit.*

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>All classes attended, all assignments completed satisfactorily, adequate participation, weak presentation</td>
</tr>
<tr>
<td>C</td>
<td>All of the above, adequate participation, adequate presentation</td>
</tr>
<tr>
<td>B</td>
<td>All of the above, good participation, good presentation</td>
</tr>
<tr>
<td>A</td>
<td>All of the above, good participation, excellent presentation</td>
</tr>
<tr>
<td>F</td>
<td>Otherwise</td>
</tr>
</tbody>
</table>

The expectations for participation include active work on problems in class, thoughtful and constructive feedback on other students’ presentations, as well as appropriate contributions to the book discussion.

The expectations for student presentations are as follows:

• Presentation 1:
  - Correct mathematics
  - Accurate communication of mathematical ideas
Complete, self-contained overview of problem and solution

Preliminary practice meeting with instructor at least week prior to first presentation; submit slides 24 hours in advance of meeting

Slides contain no errors

Time is around 15 minutes (neither too long nor too short)

Fields questions from audience well

Demonstrates ample preparation

Submits written work to accompany the presentation

- Interim: Follow-up meeting with the instructor within a week of the first presentation to discuss feedback; view your presentation video carefully in advance of meeting

- Presentation 2: All of the above, and
  - Incorporates feedback from the first presentation
  - Does not reference the first presentation

**Attendance Policy:** Attendance and participation in class are expected, and absences must be approved beforehand; if you must miss class, contact your instructor as soon as possible. Most of our class time will be spent in problem-solving investigations, visitor presentations, book discussions, and student presentations. Learning within this framework requires active participation.

**Academic Integrity (A-9.1):** 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 Policy A-54): 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

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 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.

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 or place it in quiet mode before entering the classroom.
Math 4180 – Seminar in Mathematics II  
Course Syllabus

Course description: One to three conference hours per week. Student participation in general and specific topics in mathematics; separate section for mathematics teacher certification. May be repeated for credit on a different seminar topic with departmental approval. Prerequisites: MTH 439 or concurrent enrollment

Credit hours: 1 to 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 4330 or concurrent enrollment

Outline of Suggested Topics: Topics are dependent upon the seminar. Textbook and reading materials will be chosen according to selected seminar topics.

A sample timeline for a seminar for mathematics teachers:

- Professional requirements and responsibilities 10%
  - Texas Essential Knowledge and Skills
  - NCTM Principles and Standards for School Mathematics
  - Other relevant national reports

- Mathematics content and historical connections 30%
  - SBEC beginning teacher standards
  - Areas of special concern in school mathematics
  - Historical development of mathematical ideas with appropriate classroom connections.

- Case studies and student presentations 60%
  - Case study investigations with interactive class discussions
  - Student presentations on assigned topics.

Student Learning Outcomes (SLO): Students will demonstrate (per program learning outcomes, as appropriate for the chosen seminar topic):
1. Comprehension of core mathematical concepts. [PLO 1,2,3]
2. Procedural fluency. [PLO 1,2,3]
3. Competencies in using various mathematical tools for problem solving. [PLO 1,2,3]
4. Sound mathematical reasoning. [PLO 1,2,3]
5. An understanding of the development and connectedness of mathematical ideas. [PLO 1,2,3]
6. Proficiency in communicating mathematics in a format appropriate to expected audiences. [PLO 1,2,3]

**Program Learning Outcomes (PLO):** Students graduating from SFA with a B.S. Degree and a major in mathematics will:

1. Written Communication - SFA Mathematics majors communicate mathematical ideas effectively in written form, integrating mathematical notation correctly and consistently.

2. Verbal Communication - SFA Mathematics majors communicate mathematics effectively to diverse audiences.

3. Mathematical Maturation - SFA Mathematics majors grow from a computational understanding of mathematics to an integrated approach which includes critical thinking proficiency, computational facility, conceptual understanding, and problem-solving persistence.

**Academic Integrity**

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