

Course Syllabus
Math 364.01
Introduction to Mathematical Thought
3 Credits
Spring 2010

1. **Class meeting information:** Class meets in 218 LDB Tuesdays and Thursdays 11 am - 12:30 pm

2. **Professor:** Dr. Jacqueline Jensen **e-mail:** jensen@shsu.edu
Office: 410 Lee Drain **web-page:** http://www.shsu.edu/~mth_jaj
Office Phone: 936-294-3517

3. **Office Hours:**
Tuesday and Thursday 9:00 - 10:00 am
and, of course, by appointment.

4. **Course Description:**
This course includes an introduction to sets, logic, the axiomatic method and proof.
Students taking Math 364 must have completed Math 143 with a grade of C or better or have consent of instructor.

5. **Course Objectives:**
Students completing this course should have mastery of the following major concepts. Other techniques and ideas will also be covered.
 - Logic, including inverse, converse, contrapositive, and negation.
 - Knowledge of techniques of proof, including proof by contradiction, proof by induction, and direct proof.
 - Definitions in set theory, and set operations.
 - Equivalence relations
 - Partitions
 - Functions
 - Other topics as time allows

6. **Required Textbook:** No textbook required.

7. **Required Supplies:** No other supplies required.

8. **Attendance Policy:** Students are expected to attend every class. If class must be missed, the student is expected to get the notes from a classmate, and to check the web-page for announcements and updated assignments. The professor will keep a record of attendance.
Tardiness: Students are expected to arrive to class on time. If a student is perpetually late, they will be asked to not attend class unless they arrive on time. If tardiness becomes a

problem for the class as a whole, people who arrive late will not be permitted to enter the class. If this stricter policy becomes necessary, there will be an announcement made in class and posted on the web-page.

9. Assignments:

- (a) **Homework:** Homework will be assigned in class each day. Assignments can be found online at http://www.shsu.edu/~mth_jaj/math364/schedule.s10.html. *Students are not allowed to discuss problems with other members of the class, tutors, or anyone except for the instructor. Students are not to use outside references. This means that students are not allowed to access internet resources or use other textbooks for help. If you have questions about problems, you should see your instructor.*

Many problems will be assigned and all problems will be discussed in class. However, only problems marked with an asterisk (*) will be collected and graded. For those to be collected, see the standards below.

Every problem completed should be written on a separate sheet of paper. Problems can be submitted prior to presentations or after presentations. Problems will be collected at the beginning of every class, and will be graded in the following way:

10 pts - Correct work, turned in pre-presentation

1 - 9 pts - Almost correct work, turned in pre-presentation

5 pts - Correct work, turned in post-presentation

Problems submitted after a the problem has been presented in class, and not correct will not receive any points. Problems can be resubmitted if you are unhappy with your score up to three class periods after the problem has been presented in class.

- (b) **Class participation:** Students will be asked to share their solutions to problems. During classes, I will randomly call on students to present problems assigned. You may choose to present any problem not yet presented in class. If you are not the first person chosen on a given day, you will not have your choice of all assigned problems. This means that you may not get to present your first choice problem, so you should be prepared with solutions to more than one problem. It is possible that you will be called on to present two days in a row, so you should be constantly working on problems.

You are allowed two “passes” during the course of the semester. These are for days when you have no problems to present. There is no penalty for using these two passes. However, once you have passed twice during the semester, you will not be allowed to pass again, and will be forced to present a problem, so use these wisely.

During student presentations, the rest of the class is encouraged to ask questions, and to think critically about the solution presented by the classmate. The class is responsible for determining the validity of arguments presented, and the instructor will occasionally allow incorrect solutions to stand in class. These incorrectly presented problems will appear on quizzes and tests.

Presentations will be scored in the following way:

- Accuracy of the problem you present, including following guidelines below.
- Defense of your work, including, including following guidelines below.

Points: You will be awarded a “point” in the appropriate category every time you contribute in one of the following ways:

- P - presentation points awarded
 - 5 pts** - Correct presentation
 - 2-4 pts** - Presentation with error(s)
- Q - asking a **good** question of the presenter
- C - an oral contribution other than the two categories above
- I - contributing a demonstration of mathematical insight

Remember that the presenter will always have the first chance to answer a question.

Guidelines For Your Presentation:

- Write the problem on the board.
- State what method/theorem/idea you will use.
- Clearly explain each step.
- Do not use stupid, trivial, obvious, etc.

Guidelines For Defending Your Work:

- You must answer you classmates’ and professor’s questions in a respectful manner.
- Do not use “stupid”, “trivial”, “obvious”, etc.
- You must try to answer every question posed.
- Its OK to say, “I’m not sure that I understand your question.” It is not OK to say, “Your question doesn’t make sense.”
- Talk to the class, not to the board.

Guidelines For Criticism of Classmates Work:

- You are to ask questions about your classmates work. Do NOT suggest another technique. In some cases, there may be more than one way to solve a problem.
- Do not use “stupid”, “trivial”, “obvious”, etc.
- You must ask questions in a respectful manner.
- Its OK to say, “Can you explain how you got from line 3 to line 4?” It is not OK to say, “Line 4 is wrong,” or “Line 4 doesn’t make sense.”

- (c) **Quizzes:** There will be a short quiz given in class every day. Most days these will be vocabulary quizzes, but might also ask for examples, counterexamples, or short proofs.

10. **Exams:** There will be two exams during the semester. They are tentatively scheduled to occur on: **Thursday, 18 February and Thursday, 8 April.**

Any changes to this schedule will be announced in class and posted on the web-page.

Make-ups: If a student misses an exam, the student will be allowed to replace that exam score with their score on the final exam if the student contacts the instructor prior to the exam and the student takes and passes the next exam at the regularly scheduled time.

The final exam will be held over two days, with certain topics (to be announced later) on each day. The final exam will be held on **Tuesday, 4 May 2010 and Thursday, 6 May 2010** during out normal classtime. It will be comprehensive.

11. **Grading Plan:** The course grade is based on:

Homework and Quizzes	Class Participation	Exam 1	Exam 2	Final Exam
20%	15%	15%	20%	30 %

The course grade will be assigned via the standard 10 point scale. There is no additional curve in this class, and no extra credit, so keep up as the semester progresses.

12. **Academic Dishonesty:** All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on and examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

13. **Classroom Rules of Conduct:** Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university.

Cellular telephones and pagers must be turned off before class begins. Since they are to be turned off, they should not be visible in class. If cell phones become an issue in class, students will be asked to leave if their phone should ring during class. Remember that students will frequently be presenting in this class, and it is rude to have your phone ring when they are presenting.

Students are prohibited from using tobacco products in class, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

14. **Visitors in the Classroom:** Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

15. **Additional Information** All information on this syllabus is subject to change. Any changes will be announced in class.