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Math. 103 - Spring 1995 1

IIVERSITY OF NOTRE DAME
ATHEMATICS DEPARTMENT

ıth. 103 - Spring 1995 - Syllabus

IIVERSITY OF NOTRE DAME
ATHEMATICS DEPARTMENT

ıth. 103 - Processes of Mathematical Thought
›ring Semester, 1998

Instructor: Prof. Mario Borelli

Office The instructor has two:
Room 302, Math. Bldg. Tel. 631-7334
Room 236, Security Bldg. Tel. 631-7514 (here most of
ıe time)

Course Prerequisites: a working knowledge of High School algebra, curiosit
›out mathematics, interest in the topics considered. The course is designed
:rictly
›r the non specialist. Consequently, participation in class discussion, the
;king of
ıestions, the proffering of suggestions is required. What will NOT be tolerate
;
ıe passive attitude "here I am, teach me!", an attitude which especially
:fects
›perclasspersons (the last time I'll try to be politically correct.) LEARNIN
; NOT
SPECTATOR SPORT!

Course Description. Challenging situations often confront us which require
ıought before proceeding. This generally involves an analysis of the situatio
:eking to understand precisely all relevant factors involved, then a
:velopment of
:rategies dealing with the situation, and finally, whenever possible, the
:lection of
ıe strategy which will resolve the situation to our satisfaction. The words i
:alics
:curately describe mathematical thought, and provide a blueprint for the
›nduct
: the course.

Challenges, such as commercial games, consensus within diversity, the
ıking
: Christmas ornaments, governmental economic planning, wallpaper design, the
ıeory of chaos etc., will be introduced. In most instances, the computer will
: used
›r simulation and experimentation. With the guidance of the instructor, those
:rategies, techniques and technical results which may be relevant to the
:sired
›lution will be introduced. Finally that strategy or strategies, if there be
ıy, which
›olve the challenge to our satisfaction" will be applied and shown to work.

For most students learning is enhanced by the exchange and discussion of
leas.
ıerefore I intend to require that students organize themselves in "teams" of
:actly four members each. The word "team", in this class, therefore means a
:oup
: either four students (only one team will be allowed to have less than four
:mbers) To keep the organization orderly, on next Wednesday, January 21 each
:udent will return to me the "Team Organization Form" attached herewith, (the
ıst page) with all items appropriately filled.

›mework. Various reports on each team's findings will constitute the homework,
ıich will receive the same grade for each member of the team. At the end of th
:udy of each topic, each team will write a paper on the "solution" of each
ıallenge
›mework is collected every Monday class.

Exams: There will be three class exams, and the final examination. The
:hedule of the class exams is:

Tues., February 24 Tues., March 24 Tue., April 21

ıe final examination will be held at the regularly scheduled time and day.
ıe instructor reserves his right to give unannounced quizzes.

Attendance. Attendance will be taken at every class session. University
:gulations give the instructor authority to exact a grade penalty if a student
:cumulates more than three unexcused absences. (This means you have to learn t
:t up on time.)

Since it's no fun to get up early in the morning and slush all the way to
:Bartolo only to find out that the class has been cancelled, here are three
.asses
ıich I know I will have to cancel due to the fact that I will be out of town c
ıose
ıys. There may be more which I may have to announce later. Up to three missed
.asses are replaced by the exam sessions, additional ones will be made up as
:ening sessions. The cancelled classes so far are:

Friday, January 16
Monday March 16
Wednesday, March 18

The Honor Code. In the homework the instructor allows, and indeed
ıcourages, cooperation and sharing of learning, both among an individual team
:mbers and among different teams. The instructor requires only that credit be

.ven in the homework to those team members or other teams which have
›ntributed ideas or help. Treat the homework as a professional effort. Class
ıizzes
ıd exams will be conducted under the University's Honor Code, so that in these
ıtter works a student's efforts must be strictly his/her own. Attendance will
.so be
ıken on the Honor Code. (This means you cannot sign in for somebody else.)

Grading:	Class Participation	5%	(10
›ints)			
	Homework	25%	
(100 points)			
	Exams and Quizzes	40%	(15
›ints)			
	Final Exam		3
(150 points)			
	TOTAL		100
(500 points)			

Letter Grades. The instructor will not know until the end of the semester
ıich numerical scores correspond to which letter grades, so please don't ask
.m.
/o facts are certain: the course will not be graded on a curve and if your
:ores
ıount to 50% or more of the total, you will pass the course (maybe with a D,
ıt
›finitely pass.)

Office Hours: Monday, Wednesday 9:30 - 10:30 - Rm 236, Security Bldg.
›r by appointment, at any time mutually convenient. The instructor will be
'ailable most days in Room 236, Security Building. The secretary's name
ıere is Mary, call her at 1-7514 and make an appointment.)

ıTH. 103 - PROCESSES OF MATHEMATICAL THOUGHT
›RING 1998
:AM ORGANIZATION FORM
:TURN THIS FORM ON MONDAY, JANUARY 21

Prof. Borelli,

I belong to a team which consists of myself and (PRINT full
ımes, first
and last)

' NAME IS
›RINT)