

Northern Michigan University

Department of Mathematics/Computer Science

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Syllabus

MA 151 MATHEMATICS FOR THE ELEMENTARY TEACHER II

URL for course info: <http://Ellerbruch.nmu.edu/classes/Ma151F02/MA151.html>

Seq #: 11441 section 02

10:00 - 10:50 pm M W Th F Room West 3806

Prerequisite: C in MA 150 or equivalent

Instructor Information:

Instructor: L. W. Ellerbruch

Office: NSF 1109

Telephone: 227-1597

Office Hours: As posted by office door but will include:

11:00 - 11:50 am M W Th F

1:00 - 1:50 pm M W Th F

Other hours by arrangement.

Text:

Bennett, Albert B., Jr. and L. Ted Nelson, *Mathematics for Elementary Teachers A Conceptual Approach, fifth edition*, McGraw Hill, Boston: 2001.

Additional Materials:

scissors

tape

string

pipe cleaners

balloons

geoboard (instructions will be provided for construction)

Basic Philosophy and content for the course:

The course will be built around the rule of "four"; every topic should be presented geometrically (visually), numerically, abstractly (algebraically) and have a strong emphasis on written communication. In-class work, homework, exams and quizzes, and projects will utilize all four components as much as is reasonably possible. Communication is important and individuals are encouraged to talk about mathematics education with other members of the class AND members of the other mathematics education sections. Cheating is defined as turning in someone else's work as your own. It is not cheating to work with others. Sharing the learning and teaching is an important part of the course.

Technology will be an important component of classroom instruction and learning. Students will use graphing calculators and computers. E-mail, mail groups, and the internet will be used extensively.

MA 151 will cover portions of the chapters from 7 to the end of the text.

Calculators and Technology:

All students will acquire and use a university e-mail account. Information will be sent to the students by e-mail. Students will be expected to communicate with each other and the instructor by e-mail. A complete and up-to-date syllabus, list of assigned exercises, list of assignments, and other information related directly to the class will be available on a WWW page on the instructor's WWW server.

Some aspects of the visual (geometric/graphical/concrete) component of the course will be designed around the Texas Instruments TI-85 and TI-92 graphing capabilities, computer software, the WWW, or hands-on materials you will build and use. The numerical component of the course will be designed around computation and programming capabilities which allow for in-class demonstrations.

A minimum of a scientific calculator is required in the course. It will be useful for homework, in-class exercises, quizzes and exams. It must have the capability of logs, exponents, trig functions, and it should have memory. You will find it important that the calculator also have factorial, permutations and combinations keys. You are responsible for learning how to use your specific calculator, although we will discuss the most common types. The calculator should work with negative exponents. A graphing calculator such as the Texas Instruments TI-85 or 86 is an extremely good calculator to consider if you can afford it and especially if you will be taking additional math classes where it will be required. You will be allowed to use TI-Interactive.

It is assumed students will use word processing and graphing programs on microcomputers to complete reports. Students will use e-mail, a WWW browser, mail groups, editors, and various software. Demonstration lessons will be provided for the Macintosh.

Assignments:

In-class exercises and out-of-class exercises will be assigned on a daily basis. It is expected that students will complete all assigned homework exercises. Some homework sets may be collected. Some homework exercises may be marked. Some homework exercises may be used as quiz items.

Reading assignments will be made, and it is very important to complete them.

There will be in-class discussion and group work. Participation is expected.

Assignments will be made which will require writing. Reports will be submitted electronically. There will be projects which may be completed by groups with only one report for the group, projects which require group problem solving with individual reports, and projects which are independent. Students may be required to put their results/reports on the World Wide Web.

Students will be responsible for instructional material placed on the WWW for them, or assigned to them.

Attendance:

Attendance is required. Major exams may be made up only if the absence is excused prior to the absence. Daily work or quizzes may not be made up!

Grading:

Exams

There will be at least two hourly exams. There will be a comprehensive final which will be mandatory. The quizzes, tests, and final may be of a non-standard format which might include a group component.

Quizzes

Quizzes will usually be unannounced and will usually be of very short duration. There may be a quiz any day. Likely material for the quizzes will include short answer or essay questions, homework problems, or material emphasized in class.

Points

Points are cumulative for all class activities. There will be about:

points	category
200 - 400	tests
100 - 200	quizzes
200	final
100 - 300	projects (much writing)
100 - 200	class participation

Letter Grades

Point equivalents for assignments receiving letter grades are as follows:

GRADE: % equivalent

A+	99
A	95
A-	91
B+	88
B	85
B-	81
C+	77
C	70
C-	62
D+	58
D	54
D-	51
F+	40
F	30
F-	20

The following is the guaranteed scale for **final** grades.

GRADE DISTRIBUTION

% score: GRADE

92 -	A
90 - 91.99	A-
87 - 89.99	B+
83 - 86.99	B
80 - 82.99	B-
75 - 79.99	C+
65 - 74.99	C
60 - 64.99	C-
57 - 59.99	D+
53 - 56.99	D
50 - 52.99	D-
0 - 49.99	F

However, the instructor reserves the right to adjust the curve downward slightly to allow for better breaks between letter grades. He also reserves the right to discard one or more quiz grades for every student from the percent calculation, but this is not a guarantee. There may be some opportunity for bonus points.

Final

There will be a final exam and all students will be required to take it. The final time will be at the scheduled time unless there is a change or correction in the university schedule.

The 10am class exam is scheduled from 10:00 to 11:50am Monday 9 December 2002 in West 3806.

NOTES:

All material in the course is cumulative and once covered in class, or assigned, may be used on any test or quiz.

DISABILITY:

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Disability Services Office at 1104 University Center (227-1737). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

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