

**MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS I (MATH 151)**  
**SPRING 2015**  
**TTH 3:00 - 4:40 NATURAL SCIENCES 212F**

1. IMPORTANT INFORMATION

**Instructor:** Stephen J. Young  
**Office:** Natural Sciences 114  
**Office Hours:** TTh 2:00 pm – 2:45pm, 4:45 pm – 5:30 pm, or by appointment.  
**E-mail:** stephen.young@louisville.edu (**Please** include “Math151” in the subject)  
**Office Phone:** (502) 852-3338  
**Course Webpage** [www.math.louisville.edu/~syoung/teaching/math151/spring15/](http://www.math.louisville.edu/~syoung/teaching/math151/spring15/)  
**Textbook** *Mathematical Reasoning for Elementary Teachers, 7<sup>th</sup> Edition* Long, DeTemple, and Milman

2. LEARNING OUTCOMES

This course is not designed to teach you K-5 mathematics procedures, such as addition, subtraction, multiplication, and division of fractions and decimals. It is expected that you have already mastered these skills. In Math 151, Mathematics for Elementary Teachers, among many other things you will learn why the elementary school procedures, algorithms, and techniques work. Your more profound understanding of these interesting and sometimes subtle matters will provide a basis for your explanations to your own students, allow you to understand the extent of your own students learning, and help you understand and correct the inevitable errors of your students. From the course you will:

- ◆ develop an adult-level perspective and insight into the nature and concepts of mathematics taught in elementary school;
- ◆ further develop your mathematical and critical thinking skills;
- ◆ use mathematical knowledge to solve problems;
- ◆ improve your ability to communicate mathematically using a variety of representations; and
- ◆ gain appropriate mastery over the following topics: problem-solving, sets, functions, Venn diagrams, deductive reasoning, inductive reasoning, numeration systems, the four basic arithmetic operations, exponents, factors/multiples, greatest common divisors, least common multiples, integers, fractions, decimals, ratios, percents, scientific notation, irrational numbers, and real numbers.

3. GRADING SYSTEM

All exams and quizzes will be graded out of four-points on the following holistic scale:

- 4 (~ A) A correct, clear, and complete solution. A solution is correct when it is achieved by a valid mathematical process. A solution is clear when the answer and process used are easily understood by what is written. A solution is complete when every step of the mathematical procedure is appropriately explained and/or justified.
- 3 (~ B) A solution that does not warrant a 4 because of minor problems, such as not explaining or justifying a step in the mathematical process.
- 2 (~ C) Significant, but incomplete or incorrect, explanation that shows understanding.
- 1 (~ D) Progress made towards a solution but with serious problems. A correct answer with no explanation or justification usually falls into this category.
- 0 (~ F) No work, work that will not lead to a correct result, illegible, or unintelligible.

#### 4. GRADING BREAKDOWN

Final grades in this course will be determined according following, with the proviso that in order to pass the class you must pass (C- or better) the final assessment. At the judgement of the instructor and on an individual basis, course grades may be higher than the numerical calculation would yield.

**Participation/Homework (10%):** Actively participating in class discussions is an important part of developing your ability to express yourself mathematically. Although attendance will not be taken, it is important for you to attend class on a consistent basis. Assigned homework may or may not be collected or you may be asked to present homework solutions on the board as part of your participation grade.

**Project(s) (20%):** At least one project, perhaps more will be assigned to you throughout the course of the semester. These projects will require sustained effort and/or thought over the course of several weeks and will usually be as part of small groups. You will receive a grade both for your group's work and your participation in the group.

**Exams (20%)  $\times$  2:** There will be two in-class exams, tentatively scheduled for February 26 and April 21.

**Final Exam (30%):** The final exam will be on Saturday April 25, 11:00 am – 1:30 pm.

#### GRADE DISTRIBUTION

A+	A	A-	B+	B	B-	C+	C	C-	D	F
95	85	80	75	65	60	55	45	40	30	0

#### SKILLS ASSESSMENT

In order to meaningfully contribute to – and benefit from – this course, it is important to have a basic fluency in certain computational skills. Therefore there will be a 30 minute, 20 questions skills assessment which will modify the calculation of your final grade based on the number of correct answers:

# Correct	Grade Reduction
18 – 20	no reduction
14 – 17	1 letter grade
10 – 13	2 letter grades
0 – 9	3 letter grades

Your first opportunity to take this assessment will be in class during the first week of classes. You will allowed to schedule one attempt a week between January 19th (the start of the second full week of classes) and March 6th (the end of the last full week before Drop Day). In order to schedule an opportunity for the following week you must notify your instructor, via email, by noon Friday of the week before you wish to retake the assessment. These opportunities will be administered in the Math Lab according to a schedule announced after the Math Lab schedule is finalized. You must bring a photo ID to the Math Lab in order to take your assessment. The Lab is typically open Monday through Friday from 8:00 am to 5:00 pm. If you have a compelling reason for being unable to take the assessment during these hours you must notify your instructor via email by noon January 17th and alternative arrangements will be made.

**Severe Weather and Cancellations.** It may happen that school closures due to severe weather or other reasons may limit your opportunities to take the skills assessment. If you had previously scheduled to take the skills assessment at a time that school is closed, you will be allowed to reschedule for a time later in the same week. However, the deadline for taking the skills assessment will not be changed unless the University of Louisville officially moves back the last day to withdraw from classes

#### 5. AMERICAN DISABILITIES ACT

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact the DRC (852-6938).

## 6. COURSE POLICIES

The expectation is that you will spend at least 2-3 hours per week on this course for every hour of class time.

- ◆ Unless otherwise specified in writing, all tests are closed book and closed notes. In order to receive credit all work must be shown and complete sentences must be used where appropriate.
- ◆ Homework problems should be neatly written. If necessary it is occasionally acceptable to email a pdf of your solutions.
- ◆ Although you may discuss work among yourselves, you must write your solutions up in your own words by yourself. In particular, the writing up of *any* part of the homework can't be done where classmates (or someone with whom you have discussed the homework) are present. This means that you may not write up homework in the classroom or hallway outside the classroom before class. It is necessary to include each problem the names of those you discussed the problem with in a substantive way.
- ◆ Please silence all cell phones and noise making devices during class. Note that some models of cell phone when put on vibrate make a significant amount of noise.
- ◆ If you believe an exam has been graded incorrectly do not mark it in any way. Submit to me, in writing, along with exam, a short statement of why you think a *particular* problem, or set of problems was graded incorrectly. Regrade requests will not be accepted later than the end of the class period after they are returned. I reserve the right to photocopy any or all of your exams in order to prevent regrade abuse.
- ◆ In order to receive full credit on exams, homework, etc. you must show all work in a clear and coherent manner. In particular, correct answers not fully supported by explanations using complete sentences, where appropriate, will not receive full credit. It is your responsibility to present your solutions in an easily understood manner.
- ◆ If you need help outside of normal office hours, please feel free to stop by my office. I may not be able to help at that moment, but we will at least be able to arrange another time to meet.
- ◆ Please keep all your exams and homework; if you believe there has been an error in the recording of your grades they are the only way to validate your claim. Also, grades will be placed on Blackboard, so please periodically check the grades posted there so we can resolve any issues quickly.
- ◆ Make up exams will be only be guaranteed to be given as required by university policy (i.e, a conflicting university sanctioned events), all other situations, such as medical procedures or emergencies, will be considered on a case by case basis. Make up exams may be required to be administered by University Testing Services, which charges a fee. There will be no make up quizzes.
- ◆ Academic dishonesty is prohibited at the University of Louisville. It is a serious offense because it diminishes the quality of scholarship, makes accurate evaluation of student progress impossible, and defrauds those in society who must ultimately depend upon the knowledge and integrity of the institution and its students and faculty. Any instances of academic dishonesty in this course will be taken extremely seriously.
- ◆ All content in this syllabus is subject to change in order to accommodate unforeseen circumstances and achieve the learning outcomes. Any changes in the syllabus will be announced in class.

For IRB Approval Stamp

## **Inquiry and Evidence: Self Study across the Division of Teaching and Learning**

Date

Dear Students:

You are being invited to participate in a research study by allowing the work you complete as part of courses or other program experiences to be reviewed for research analysis. There are no known risks for your participation in this research study. The information collected may not benefit you directly. The information learned in this study may be helpful to others. The information you provide will enable instructors to use empirical research to enhance understanding about how teachers are prepared. Self-study is an important, regular component of teaching practice, enabling teachers to investigate the impact that instructional strategies and content have on students. Your completed work will be stored in password protected, secure formats (for example on Livetext)

Individuals from the Division of Teaching and Learning, the Institutional Review Board (IRB), the Human Subjects Protection Program Office (HSPPPO), and other regulatory agencies may inspect these records. In all other respects, however, the data will be held in confidence to the extent permitted by law. Should the data be published, your identity will not be disclosed.

Taking part in this study is voluntary. By participation you agree to take part in this research study. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify. If you do not want your work to be included in self-study, please sign and date the notification form provided. Submit the form to a designated staff person for the Division. If you are in a Teaching and Learning program, that person is Paula Gordon in room 255 of the Porter Building, If you are in an Health and Sports Sciences Program the person is Michel Ball in Crawford Gym. These individuals will maintain all forms until after grades are submitted or a specific program has been completed. This process ensures instructors and facilitators will not know which students chose to participate and which did not until after grades are submitted or after program experiences are completed.

If you have any questions, concerns, or complaints about the research study, please contact: Dr. Shelley Thomas at 502-852-8090 or your instructor/facilitator.

If you have any questions about your rights as a research subject, you may call the Human Subjects Protection Program Office at (502) 852-5188. You can discuss any questions about your rights as a research subject, in private, with a member of the Institutional Review Board (IRB). You may also call this number if you have other questions about the research, and you cannot reach the research staff, or want to talk to someone else. The IRB is an independent committee made up of people from the University community, staff of the institutions, as well as people from the community not connected with these institutions. The IRB has reviewed this research study.

If you have concerns or complaints about the research or research staff and you do not wish to give your name, you may call 1-877-852-1167. This is a 24 hour hot line answered by people who do not work at the University of Louisville.

Revised June 8<sup>th</sup>, 2011

Sincerely,

**Signature of the Investigator**

**Signature of the Co-Investigator**

Non-Participation Notification for Division of Teaching and Learning Self-Study

I \_\_\_\_\_ hereby notify the Division of Teaching and Learning that any work produced by me and identifiable by name NOT be used for research purposes in \_\_\_\_\_ course or program experience taught or facilitated by \_\_\_\_\_.

(provide course name, number, and instructor name or similar program details).

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Name

Date