

# Mathematics 5 Course Syllabus January 1, 2010

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The list of topics below will give you some idea of the tentative schedule for Mathematics 5 this Winter. However, the topics may change depending upon the interests of the class, and if so, we will modify the schedule and agree on a new version. The chapter references are to the draft manuscript *Mathematics and Knowledge: Models of Reality* by Dwight Lahr.

| Week                | Topics                                     | References                   |
|---------------------|--|------------------------------|
| #1 Jan 4, 6, 8      | Visualization, Quantification, Abstraction | Chapter 1                    |
| #2 Jan 11, 13, 15   | Abstraction, Idealization, Truth, Logic    | Chapter 1, Chapter 2         |
| #3 Jan 20, 22       | Connectives, Thms, Prfs, Paradoxes         | Chapter 2                    |
| #4 Jan 25, 27**, 29 | Infinity, Zeno's Paradoxes                 | Chapter 6                    |
| #5 Feb 1, 3, 5      | Primes(), Congs., Fermat's Little Thm      | Ch. 3 (3.4, 3.5, 3.14, 3.15) |
| #6 Feb 8, 10        | Euler's Thm, Codes()                       | Chapter 4                    |
| #7 Feb 15, 17**, 19 | RSA Algorithm                              | Chapter 4                    |
| #8 Feb 22, 24, 26   | Einstein, Energy, $E = mc^2$               | Chapter 9 (9.10 and 9.11)    |
| #9 Mar 1, 3, 5      | $E = mc^2$                                 | (continued)                  |
| #10 Mar. 8          | Wrap up; evaluations                       | Final Paper due Fri, 3/12    |

**Notes:**

\* Week #3: MLK holiday on Monday, 1/18 (no class that day)  
 Week #6: Winter Carnival on Friday, 2/12 (no class that day)

\*\* Quizzes: Wednesday, January 27; Wednesday, February 17.

Final seven-page paper due on first day of finals: Friday, March 12.

Special schedules: MLK holiday                      No class on Monday in week #3  
                                  Winter Carnival                      No class on Friday in week #6