

## Syllabus for MATH 475, Knot Theory, Spring 2005

Instructor: Ismar Volic  
Meeting times: MWF 10:00 – 10:50, CHM 303  
Office hours: M 1 – 2 , W 12 – 1, and by appointment, in Kerchof 327  
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URL: [https://toolkit.itc.virginia.edu:443/cgi-local/tk/UVa\\_CLAS\\_2005\\_Spring\\_MATH475-1](https://toolkit.itc.virginia.edu:443/cgi-local/tk/UVa_CLAS_2005_Spring_MATH475-1)

**Please check this page often.** It will contain various important announcements and information about the course that you will be responsible for. You can also join discussion groups, provide feedback about the course, etc.

Text: *The Knot Book*, by C. Adams, American Mathematical Society, 2004.

Material from other sources will be uploaded to Toolkit throughout the semester.

Prerequisites: High school algebra and geometry. Some familiarity with linear algebra and group theory is desired but not necessary.

Course material: I plan to cover most of the material in Chapters 1—6, and some of the material from Chapters 7—9.

Homework and exams: Homework will be assigned regularly and collected every Friday. It is very important that you keep up with the homework and turn in well-written, clear, and neat assignments. I may not grade every problem but will post solutions to all of them. There will also be a midterm and a final, both take-home.

Point Distribution: 50% Homework  
25% Midterm  
25% Final

Helpful websites: <http://www.pims.math.ca/knotplot>  
Contains various pictures of knots, animations of knot deformations (some interactive) all created with KnotPlot software which is free for downloading.

<http://www.math.unl.edu/~mbritten/ldt/knots.html>  
Has lots of good links.

<http://www.tiem.utk.edu/~gross/bioed/webmodules/DNAknot.html>  
Talks about DNA and knots, which we will get to later in the course.

<http://www.indiana.edu/~knotinfo/>  
Lets you look for knots according to various parameters.

<http://www.math.toronto.edu/~drorbn/KAtlas/>  
Has links to various knot tables.

<http://www.williams.edu/Mathematics/cadams/knotproblems.html>  
Some open problems in knot theory