

Math 480/582: Sage

Creating a Viable Free Open Source Alternative to Magma, Maple, Mathematica and Matlab

When	Winter 2012; MWF 1:30–2:20 in MEB 242
Professor	William Stein, wstein@gmail.com , http://wstein.org
Course Webpage	http://wiki.wstein.org/edu/2012/480
Office Hours	TBA
Software	http://480.sagenb.org and http://sagemath.org
Mailing list	https://groups.google.com/group/uw-sage-2012

Your Grade:

- 50% *weekly homework* assignments, assigned and due each Wednesday. Your lowest homework grade will be dropped.
 - Students are encouraged to work in groups on homework.
- 20% *take-home midterm*
- 30% *final project*
 - Each student will do a final project.
 - There will be project presentations during the last week of class.
 - Students are encouraged to work in groups on projects.
 - *You* get to choose the topic; start thinking about possibilities *now!*
 - If you make a significant (as judged by me) contribution to Sage (with a “positive review” on <http://trac.sagemath.org>), then you automatically get 100% for this portion of your grade.
- There are no in-class exams, there is no final exam, and classroom participation is not part of your grade (participate: it is fun!). You should be done with this class on the last day of instruction.

Main Topics:

- How to *Use Sage*, illustrated with mathematics involving number theory, calculus, linear algebra, combinatorics, graph theory, group theory, rings, numerical root finding, multidimensional arrays, numerical integration, and statistics.
- *Programming* with Python, including compiling, debugging, profiling, and optimizing code.
- How to *Contribute to Sage*.