

Math 308 Wiki Project Discussion

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Project Summary

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- ▶ Students used MediaWiki markup and LaTeX to fill in pages
- ▶ (Show: section J topic list; linear system example; matrix powers before/after/source code)

Project Goals

1. Encourage engagement

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4. Provide a community resource

Project Details

- ▶ Technology survey at start of quarter

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 - ▶ (Show: section J groups page; group JB grade page)

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- ▶ Draft comments emailed to group roughly 1 week later
- ▶ “Final version” of each topic due on the day of the final (“completeness, correctness, overall quality”)
- ▶ Project: 25% of overall grade; initial version: 25%; final version: 75%; replaced midterm

Further highlights

- ▶ Nice examples of student work
 - ▶ (Show: section J “Big theorem” intuition section; section I row reduction; section I subspace caption; section I basis)

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- ▶ Section I grading options: 40 group, 9 individual

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 - ▶ (Show: wiki project grade summary)
- ▶ Section I grading options: 40 group, 9 individual
- ▶ Section J grading options: 11 group, 35 individual

My workload

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- ▶ Page layout

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- ▶ Hours on wiki project: 10.83 average, 8.61 standard deviation
- ▶ Hours studying for midterm: 11.6 hours average, 9.6 hours standard deviation

Final survey: free response

“What were the biggest issues you encountered during the Wiki project?” My summary.

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- ▶ Being mathematically precise

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- ▶ Overemphasized your unimportant topic
- ▶ Took away second midterm
- ▶ One-size-fits-all template didn't perfectly fit

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- ▶ Clear guidelines
- ▶ None, prefer quizzes

Final survey: actionable advice

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- ▶ Allow students to choose groups, x2

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- ▶ Allow students to choose groups, x2
- ▶ No projects due during dead week, x2

Final survey: actionable advice

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- ▶ Fix server issues, x2

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- ▶ Integrate the project with the rest of the course somehow

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- ▶ Don't make it graded
- ▶ Only allow individual grades
- ▶ Integrate the project with the rest of the course somehow
- ▶ Clarify initial instructions

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- ▶ Replace with posters or PowerPoints

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- ▶ Expand LaTeX intro, e.g. discuss typesetting linear systems

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- ▶ Assign homework problems to each topic

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- ▶ Add quizzes/break up midterm into parts

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 - ▶ Extended examples: e.g. diagonalizing a permutation matrix
 - ▶ Computational explanations: e.g. a Gauss-Jordan algorithm in Matlab
- ▶ Make frequent small edits instead of a few large edits

Discussion questions

“What is the place and usefulness of modern technology for teaching college-level math?”

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- ▶ Computers do virtually all linear algebra computations in practice, but they're not currently used in Math 308. Should there be, for instance, a Matlab component to any introductory linear algebra course? Another language?

Discussion questions

“What is the place and usefulness of modern technology for teaching college-level math?”

- ▶ What value do we as lecturers add compared to having students watch existing well-regarded lectures, like those from Khan Academy?

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“What is the place and usefulness of modern technology for teaching college-level math?”

- ▶ What are the best qualities in automated homework systems? How do they improve on or worsen traditional grading systems?

Discussion questions

“What is the place and usefulness of modern technology for teaching college-level math?”

- ▶ What uses of technology genuinely improves lectures? (Ex: video demonstrations; using computer algebra systems to solve problems live; clickers)

Discussion questions

“What is the place and usefulness of modern technology for teaching college-level math?”

- ▶ Are there other areas of the information revolution which are not yet well-exploited in the classroom setting?

Thanks

Thanks for your time!