

1135-VJ-2783

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(krausea3@math.msu.edu). *Large Lectures of Flipped Calculus.*

We have developed a flipped large lecture calculus course that has provided an effective alternative to small sections. Originally brought on by budget constraints, we have found that it gives students choices in their learning experience and extends the reach of exceptional instructors. These lectures incorporate active learning techniques by using a flipped model: students view videos at home, fill out course notes that accompany the lecture videos, and class time during lecture is focused on doing mathematics with peers, rather than watching mathematics being demonstrated. To help students grow as independent learners, the course is structured to facilitate effective study strategies both intrinsically (classroom norms) and extrinsically (graded components). Local data has informed continual improvements to our course design—high attendance rates, positive experiences with the flipped model, and positive reactions to the lecture videos are all indicators of positive student engagement. DFW rates in our calculus class have been as low as 16.3% (compared to the national average of 20.8%) and statistical analyses of achievement data suggest no significant differences in outcomes between small classes and flipped large lectures. (Received September 26, 2017)