

Needs of a Math Course

Need	In the classroom	Online	Tools	Issues and Challenges
Student Engagement / Social Presence	In Natura	Recorded Introductions Forums	Flipgrid VoiceThread	
Orientation to the Course	In Situ	Recorded Tour	Screen Capture (many good options)	
Assess Learner Readiness / Clarify Prerequisite Knowledge	Anticipatory Set	Pre-Test Remediating Resources	LMS Publisher resources YouTube playlists	Depending on the course, a great deal of attention could be put toward this goal.
Introduction to New Concept / Modeling of Concept	On board	Recorded Presentation	Screen Capture YouTube playlist	
Exploration of Concept / Practice Sets	Seatwork Homework	Mastery-based applications	WebAssign MyMathLab Maple TA, Mathematica PRO	
Collaboration / Discourse Learning	Recitation Study Groups	Forums Web Conferencing	LMS Google Hangout	Forums are a difficult and often ill-fitting solution.
Questions and Answers	Office hours Recitation	Forums Web Conferencing	LMS Google Hangout	In practice most students prefer email over forums.
Formative Assessment	In-Class Guided Work Recitation	Synchronous Sessions	Adobe Connect WebEx	
		Expert Systems Mastery-based Applications	WebAssign Mymathlab Maple TA, Mathematica PRO	
Summative Assessment / Grading	Paper Exams Pen on Paper	Machine graded Annotated PDF	LMS Adobe Reader	Proctoring Mark-up instrument: Wacom or Tablet PC
Connections / Synthesis	Group problems Application problems	Group problems Application problems	LMS	A weak or missing component in most mathematics courses.