CALSTEP SURVEY SUMMARY – MATERIALS AND MATLAB FLIPPED COURSES		
College of Marin, Professor Erik Dunmire, Spring 2015		
	Materials 14 responses	MATLAB 17 responses
Av time spent lecture and lab	Lecture mean 11 hours (range 1-50) If outliers of 1 and 50 removed average is 9 hours Lab: average is 7 (removing outlier of 1,000)	Lecture and lab mean 14 hours (range 8-60) If outlier of 60 removed average is 11
Effectiveness of instructional material	Learned the most from: % giving activity a 4 or 5 rating with 5 being learned the most Being in class listening to minilecture = 86% with 57% giving it a "5" Hands on lab activities = 79% with 36% giving it a "5" Completing lab data analysis and exercises = 64% with 29% giving it a "5" **Learned the least from**: % giving activity a 1 or 2 with 1 being learned the least In-class quizzes = 72% with 36% giving it a "1" Reviewing info found on own =64% with 29% giving it a "1" Watching videos and reading the text book = 43% both with 21% giving each a "1"	Learned the most from: % giving activity a 4 or 5 rating with 5 being learned the most Being in class working on lab assignments = 81% with 63% giving it a "5" Watching videos = 88% with 56% giving it a "5" Homework assignments outside of class = 69% with 31% giving it a "5" **Learned the least from**: % giving activity a 1 or 2 with 1 being learned the least Reading the text book = 56% with 50% giving it a "1" Reviewing info found on own = 31% with 5% giving it a "1"
What made you learn the most from top activities (above)		Most students noted it was a combination of activities that helped them learn, including the

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		videos (8), the ability to ask questions in class (7), the labs (6) and the group work (3). *"Watching the videos was very helpful and made the lab assignments incredibly easier" "The material provided by Prof D. during lab hours and the recorded videos was of utmost usefulness in understanding the material."* Several students noted how helpful it was to be able to pause the videos and replay parts they did not understand (3)
When watch videos	72% (10) day or night before class 14% (2)most often did not watch 14% (2) several days before class	81% (13) day or night before class 6% (1) most often did not watch 13% (2)several days before class
Video watching practices	25% always took notes 33% always watched at accelerated speed 50% always stopped and repeated when did not understand 83% never emailed Erik with questions 58% never wrote down questions they had or asked questions of friends	60% always took notes 47% always watched at accelerated speed 40% always stopped and repeated when did not understand 67% never emailed Erik or asked friends for help with questions 53% never wrote down questions they had
Most effective videos	Voice over slides (6 of 11) Short videos/lectures (2) Howdy guy (2) Negative comments (2 survey+ interviews) about live classroom videos, esp. when they include student questions (often inaudible)	Shorter videos (5) "I would rather watch the same short video twice than one long video." More examples (4) Positive comments about UTube (2) Videos were "pretty good" "excellent" (2)

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Ideas for effective videos	Present material in short videos – split it up if necessary (4 of 11) More UTube (5) Ability to fast forward highly valued (3)	
Frequency of team work	57 % always 29% sometimes 14% never	56 % always 44% sometimes
Lessons from team work	Liked the most from team work: % giving activity a 4 or 5 rating with 5 being liked the most 100% (5) assigned a 4 or 5 rating to solving problems together 75% (4) assigned a 4 or 5 rating to learning from: explaining concepts to those less prepared, making mistakes, being part of a team 59% assigned a 2 or 3 rating to working with people who think differently from me – 17% (2) gave this a "2" and 42% a "3" – overall this received the lowest rating from team work	Liked the most from team work: % giving activity a 4 or 5 rating with 5 being liked the most 87% (14) assigned a 4 or 5 rating to learning from making mistakes (50% (5) gave this a "5" rating) 75% (12) assigned a 4 or 5 rating to learning from: explaining concepts to those less prepared and having to solve a problem together 18.75% assigned a 1 or a 2 rating to earning to work as part of a team– overall this received the lowest rating from team work
Connection btw lecture and lab	% who strongly agreed or agreed: to finding a strong connection btw lecture and lab (100%) they had sufficient guidance to do the lab (69%) 71% understood learning objectives at outset; 86% at conclusion of labs 92% labs helped them understands concepts introduced in videos/books	% who strongly agreed or agreed: to finding a strong connection btw lecture and lab (100%) they had sufficient guidance to do the lab (87.5%) 81% understood learning objectives at outset; 100% at conclusion of labs 94% labs helped them understand concepts introduced in videos/books

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	93% labs taught additional skills and concept not covered otherwise 3 students (21%) gave a 2 or 3 rating to having sufficient guidance and 28% assigned 2 or 3 to understanding learning obj before starting lab (also mentioned in interviews)	81% labs taught additional skills and concept not covered otherwise
Would recommend class in flipped format	38% (5) would recommend taking the course flipped; 23% (3) would not; 38% (5) not sure	75% (12) would recommend taking the course flipped; 6% (1) would not; 19% (3) not sure
Engagement affected by flipping	50% (7) more engaged from flipped format 24% (2) not sure 36% (5) not more engaged	63% (10) more engaged from flipped format 25% (4) not sure 13% (2) not more engaged
Motivation booster from quizzes?	43% (6) yes; 36% (5) not sure; 21% (3) no	
Quizzed fair reflection of understanding?	36% (5) yes; 14% (2) not sure; 50% (7) no	
Comments on flipped course format	3 of 9 responding had video-related issues ("can't interact" less understanding bec. not able to ask questions) 2 felt motivated students will do better in flipped format 1 pointed to difficulty managing time 1 noted flipped requires more time	
Liked best	6 of 13 comments concerned the labs which students found "interesting" and "in-depth." One student noted:…" I wish we had more labs to explain more of the material covered in lecture"	4 pointed to the connection they saw to other courses/subjects and to real life application of content 3 said they really like the flipped format

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	2 of 13 identified the lectures as what they liked best 2 of 13 liked the environment – camaraderie/small class	5 pointed to the labs (several again referring to real life application) 5 pointed to the quality of the instructor/his availability/ops to ask him for help "The labs were awesome. They not only taught us MATLAB skills, but helped solidify concepts we are learning in other classes – Physics, Calc. I felt I really grasped concepts on a deep level I had only learned superficially in Physics/Calc previously I loved it being flipped."
Liked least	6 negative comments about the videos; 2 about the ability to manipulate the videos and material (too slow); 2 about the time requirement	Very little students did not like. 3 mentioned time requirement; 2 the computer lab not being available often enough; 1 getting stuck on homework and 2 the tedium involved in some of the work "*spending hours searching for a missed bracket"*
Ideas for improvements	3 pointed to "more lectures" 2 wanted to return to standard format 2 related to videos (shorter, more engaging) 1 suggested clarifying learning outcomes for labs and doing problems as a group for the lecture	Lack of consistent messages. 1 mention each for following: Course delivery/guidelines: More feedback on alternative methods for doing the work Clarify lab topics before class and cover an approach Encourage student to look up additional solutions using outside material Technical suggestions: Make sure matlab works on the computers

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		Post lab earlier Requirements: Quizzes to make sure people watch the lecture videos Require turn-in of flowcharts and code for all assignments More credit (2)
	Most negative comments concerned videos – half felt quizzes not fair reflection of understanding	