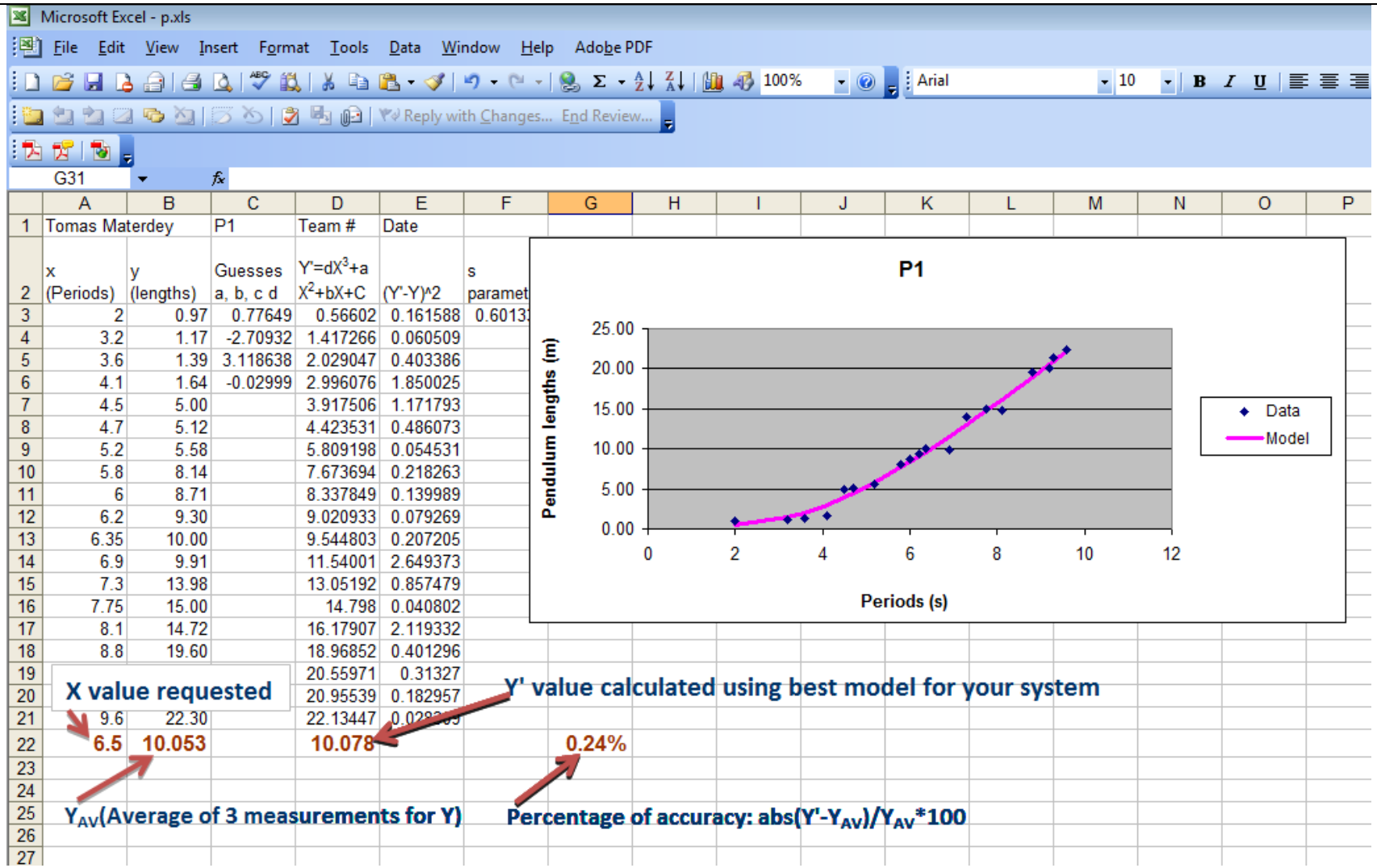
Engin 103 October 13, 2011 back to e-syllabus	Topics: Project 1 -Part II Presentations Logbook questions

Project 1 Part II Presentations: Data Modeling and System Predictability Testing

Excerpt from Project 1 specifications (see link in e-syllabus): *"In the second day, you will show the class the predictability of your system. The predictability will be checked as follows: you will be required to show a sufficient (at least 10) number of data (X,Y)'s you measured using your system, and the best model or equation Y'=f(X) you found with Excel in relating these data. Next you will be required to use this model to make a prediction Y' for some new value X, given by the audience, with your model. Next you will run your system for that input X, obtaining the actual output Y. Your system will be considered predictable if Y' and Y differ by less than 10%."*

Project 1 leaders: please copy this document and fill in your team response below. Then save as a web page: name "p1p2.html" and upload to your *files* folder.



The figure above is an example of what the team should present in their spreadsheets during Project 1 –Part II

Section 1 (9:30 AM)

Team #	Snapshot of Spreadsheet showing best mathematical model for your system	a) Your best model" A=; B=; C=; D= b) What are the requested X= and predicted output Y'= along with their units	c) List the three values obtained Y_1=; Y_2=; Y_3=; d) List their average Y_{av} e) $\|Y'-Y_{av}\|/Y_{av}$ *100= %	f) Explain your thoughts on what design elements most influenced the predictability obtained g) Explain what can be done to further improve its predictability
1 section 1				
2 section 1				
3 section 1		a)	b)	c)
4 section 1			a)	b)
5 section 1				
6 section 1				
7 section 1		a)	b)	
8 section 1				
9 section 1				
10 section 1				

Section 2 (2:00 PM)

Team #	Snapshot of Spreadsheet showing best mathematical model for your system	h) Your best model" A=; B=; C=; D= i) What are the requested X= and predicted output Y'= along with their units	j) List the three values obtained Y_1=; Y_2=; Y_3=; k) List their average Y_{av} l) $\lvert Y'-Y_{av}\rvert/Y_{av}$ *100= %	m) Explain your thoughts on what design elements most influenced the predictability obtained n) Explain what can be done to further improve its predictability
1 section 2				
2 section 2				
3 section 2				
4 section 2				
5 section 2		i.)		
6 section 2				
7 section 2				
8 section 2				
9 section 2				
10 section 2				

Report for team #			
Submitted		On time	Late
Uploaded electronic copy		Yes	No
Project 1 web page		Yes	No
Team participation table		Yes	No
Report submitted (80)	Progress Report: p1pr.html (5)		
	p1p1.html (5)		
	p1p2.html (5)		
	Introduction (10)		

	Design/Building (25)	
	Analysis: Spreadsheets (20)	
	Conclusions (10)	
Good writing practices (20)	Grammar and presentation (5)	
	Logical arguments and structures (5)	
	Accurate, completeness; non-plagiarism (10)	
Deduction		
Project report total (100)		
Project presentation total (200)		Performance and Design (180):
		Web pages Parts I and II (20):
Project 1 total (300)		

Section 1

Project 1 -part I P&D/ Teams	1	2	3	4	5	6	7	8	9	10
Project completed (35)										
Design for predictability (15)										
Performance& readiness (25)										
Presentation (15)										
Total part I P&D (90)										

Project 1 -part II P&D/ Teams	1	2	3	4	5	6	7	8	9	10
Percentage error										
Project completed (35)										
Spreadsheet and data modeling (15)										
System predictability (25)										
Presentation (15) Total part II P&D (90)										

Section 1

Project 1 -part II P&D/ Teams	1	2	3	4	5	6	7	8	9	10
	Hoist	Free Fall	Flexiglass Catapult	Marble Ramp	Fulcrum	Free Fall	Ball Ramp	Trebuchet Swing	The Ogre	
Percentage error	0.52%	1.05%	2.53%	5.63%	6.40%	6.92%	6.71%	12.34%	1.98%	
Project completed (35)	35	35	35	35	35	35	35	35	35	
Spreadsheet and data modeling (15)	15	20	15	15	15	15	15	15	15	
System predictability (25)	25	25	23	20	19	19	19	19	24	
Presentation (15)	15	15	14	14	15	14	15	14	14	
Total part II P&D (90)	90	95	87	84	84	83	84	83	88	0

Section 2

Project 1 -part II P&D/ Teams	1	2	3	4	5	6	7	8	9	10
	Catapult	The Ramp	Water Bottle Pulley	The Trap	Car Launcher	Maarble Ramp	Ball Ramp	Catapult	Bow & Arrow	Mousetrap Car
Percentage error	1.48%	2.95%	5.88%	22.00%	0.32%	8.25%	2.64%	10.06%	4%	7.82%
Project completed (35)	35	35	35	35	35	35	35	35	35	35
Spreadsheet and data modeling (15)	15	20	15	20	15	20	20	15	15	15
System predictability (25)	25	22	20	20	25	19	23	19	20	19
Presentation (15)	15	15	15	15	14	15	14	14	14	14
Total part II P&D (90)	90	92	85	90	89	89	92	83	84	83

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LOGBOOK: example of a logbook page

-Use a quadrille notebook; number all pages; date all entries
-Write your notes for all activities, thoughts, problems and solutions, and learning conclusions related to Engin 103. You should write down progress, outcomes, and conclusions on projects and teamwork; conclusions from class work (including LabVIEW) and homework.
-In addition you should answer in the logbook all questions listed in these notes in blue, as shown below:

27) Insert the spreadsheet made by your team for the system presented. Make a table of the coefficients and parameter s for the different models considered by the team, similar to that submitted in CW4. Explain which model was chosen to be the best

and why.

28) For each of the other teams, list their predictability results (in percentage error between prediction and average measurement done in class) and try to critically relate these results with their system designs, based on your own points of view.

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