Engin 103			Topics:			
October 4, 2011		<u>CW4</u>				
			Logbook questions			
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CW4						
(a) Sava CW/2 into a now file, then in Sheet #1 modify it to produce a						
(a)	Save CVVS into a new me, then in Sheet #1 modily it to produce a					
	these workshoots in		the same data se			
	these worksheets into <b>lable</b> 1 in a MS word file. Make a table like					
	the one below for the "s" values for the linear, quadratic, and cubic					
	models, along with t	ne coem	cients obtained for	each model. Indicate		
	which is the best mo	del (linea	ar, quadratic, or cub	oic) for our set of data,		
	and explain why.					
Model		Coefficie	ents	S parameter		
		A=	:			
		B=	:			
		C=	:			
Linear		D=	:			
		A=	:			
		B=	:			
		C=	:			
Quadratic		D=	:			
		۸_				
		R-	-			
		C-	-			
2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -		D=	-			
Cubic						
Table 1: All terms in polynomial models using same data set as in CW3						
<i>(</i> <b>1</b> )						
<b>(b)</b> Download this data set, repeat the table above for this						
	new data set: (i) In Sheet#2 using all terms in each polynomial model.					
	Insert spreadsheet snapshots, polynomial coefficients, and parameter					
s into Table 2 in your MS Word file (ii) In Sheet #3 using only the						
highest order term in each polynomial model. Insert spreadsheet						
snapshots, polynomial coefficients, and parameter s into <b>Table 3</b> in						
your MS Word file Can you conclude what is the dominant						
relationship (linear, quadratic, or cubic) between the periods and the						
lengths of a pendulum?						
L						

Model (all terms)	Coefficients	S parameter			
Linear	A= B= C= D=				
Quadratic	A= B= C= D=				
	A= B= C= D=				
	alunamiala madala using nau	data aat			
Table 2: All terms in polynomials models using new data set					
Model (only leading terms)	Coefficients	S parameter			
	A= B= C= D=				
Quadratic	A= B= C= D=				
	A= B= C= D=				
Table 3: Only highest order term in polynomial models using new data set					
In each team, students working together at a computer numbered between 1 and 10 will submit file cw4_XX_a.xlsx (containing the spreadsheets) and cw4_XX_a.docx (containing the Tables), students working at a computer numbered between 11 and 20 will submit file cw4_XX_b.xlsx (containing the spreadsheets) and cw4_XX_b.docx (containing the Tables), to the <i>files</i> folder in the server. Replace XX by 01 if team 1, etc. Include your names within the files.					

Q&A







6) How to get a QUADRATIC model using the spreadsheet made for a CUBIC model?

7) How to get a LINEAR model using the spreadsheet made for a CUBIC model?

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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:

17) Explain in your own words what did you do in each of the seven steps to do data modeling with Excel in CW3. Write Y'=f(X), being f the quadratic polynomial obtained after using Solver with values for the coefficients a,b,c substituted in. Also write down the final s parameter achieved with these coefficients. Attach a copy of your spreadsheet for CW3.

18) You have the spreadsheet to make a quadratic model for certain data set, such as the one used in CW3.

(a) Explain what changes you would do on the spreadsheet to make a linear model for the same data set. Use the most economical way that would not require changing the equations in cells D3 and B9 and copying them into the cells below.

(b) Explain what changes you would do on the spreadsheet to make a cubic model for the same data set.

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