Engin 103	Topics:
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Project 1 Part I Presentations:

Project 1 leaders: please copy the P1 Part I document in the e-syllabus and fill in your team response below. Then save as a web page: name "p1p1.html" and upload to your *files* folder.

Team #	Picture of system	a) Title of systemb) What are the input X and output Y along with their units	 c) What design elements you have incorporated to help with the data measurement d) What design elements will help increase predictability of the system 	e) What models will you consider using the Spreadsheetf) What model you think will best describe the system, why?
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5	 a) Roller Coaster Ramp (drop) b) The input are the angle and height (inches) The output is the speed recordings of speed/per meters 	c)We incorporated a stopwatch for the speed and a ruler for the distanced) Design elements that will help increase the predictability is the guard rails to help the car go straight and also the smooth transition from the ramp to the ground.	e) Linearf) Linear because we are taking the average of two times
<u>6</u>	A)Trebuchet B)X=Angle Y=Inches	C) We added a protractor to the arm of the Trebuchet to measure the release angle.D) we used a sand bag to eliminate bounce when the projectile lands	E) We are considering using a cubic or a quadraticF) it is a fairly constant curve so we are thinking about using a quadratic
2	 a) Pinball Mechanism b) The input (X) of the system is the pulling of the plunger. The output (Y) is the distance the ball travels after being hit. 	 c) The dowel has been marked with quarter inches so it can be pulled to known distances. The distance the ball travels will be measured with tape measure. When released, the dowel will only recoil a certain distance, keeping the tip at a constant 1 inch protrusion. d) Same as above. 	e) We will cover our bases by utilizing all 3 models, quadratic, cubic, linear for comparison.f) We believe that quadratic will be described our system, because our system's input/output will increase proportionally.
<u>8</u>	a) Hot Wheels Speed Test.b) The input is the weight in grams of the six cars tested. The output is the velocity in feet/sec that results from the 12 tests.	c) The height of the ramps and the weight of the cars.d) The constant force of the motor.	e) Linear and quadratic would be best for the spreadsheet.f) The linear model would best describe the system because the weight of the six cars would affect the graph.

9) W	
	 a) Team 10 Tripod b) X = Length of pendulum in cm, Y = Period in seconds 	 c) We have used a marked and measured length of monofilament and a system of measurement on the structure itself. d) Lead bob for uniform swing and the monofilament for conservation of energy. 	 e) All, linear & quadratic & cubic. f) We believe we have a quadratic equation as the Y value changes in a non-linear fashion.

According to Project 1 specifications (e-syllabus) the grading criteria are as follow:

Items	Points for both Part I and Part II
Project completed and presented	70
Project performance (perform tasks	50
specified)	
Good design	30
Project presentation and webpage	50

Project 1 -part I/ Teams	1	2	3	4	5	6	7	8	10
Project completed (35)		35	35	35	35	35	35	35	35
Design for predictability (15)		12	13.5	12	13.5	13.5	13.5	10.5	12
Performance& readiness (25)		20	21.3	20	20	22.5	22.5	20	22.5
Presentation and web page (25)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Total part I (100)	12.5	79.5	82.3	79.5	81	83.5	83.5	78	82

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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:

19) Sketch the system built by your team, describe the input and output variables on the sketch. What units will you measure these variables, and with what instruments.

20) Explain with a sketch the different design elements your team used to increase predictability. Explain what mathematical model will be the best to describe the system using the X and Y variables mentioned in the previous question.

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