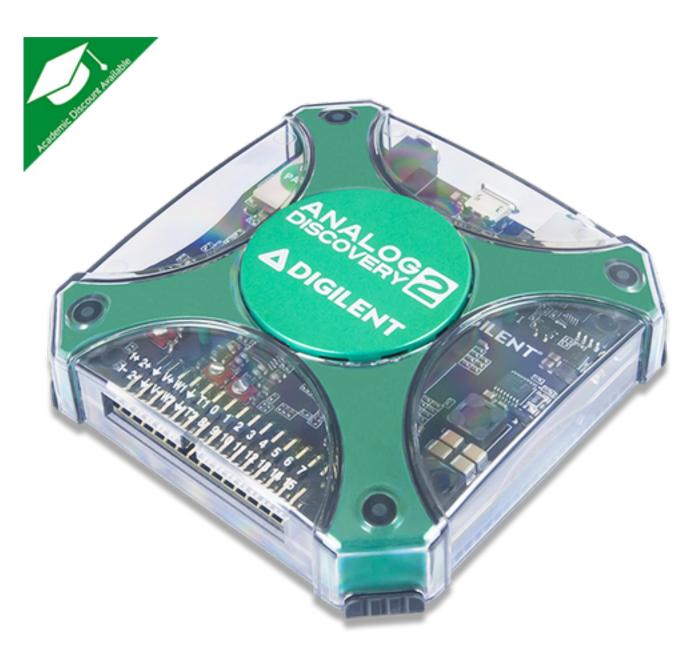
## **Applied Statistics**

# Project Preparation — Ball on an incline —

## Software installation

- For the project you will be using **Analog Discovery 2** instrument
  - Easily connected to your laptop via standard USB cable (not USB-C)
- Communication between the instrument and your laptop is provided via dedicated **WaveForms** software
  - You need to have it installed in your laptop **BEFORE** the lab starts
    - Available for Windows, Mac OS & Linux (dep, rpm)
  - Download it here : https://reference.digilentinc.com/reference/software/waveforms/waveforms-3/start
  - Easy and straightforward installation (you do not need any special drivers/additional tools)
- Experiment setup of the incline will be prepared for you connected to the instrument
  - No need to worry about this part





# Step-by-step preparation

(illustrated on MacOS)



- Launch WaveForms. It should complain that it does not detect any device. Click No
- In the lab, you will plug USB cable first

000		₩ WaveForms (	new workspa	
		Welcome 🕂	Help	
Scope	Open Workspace			To create custom application see the <u>SDK</u> . For more information visit <u>www.digilentinc.com/waveforms</u> . Observations are welcome on <u>this forum page</u> or <u>via email</u> .
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		No device detecte Digilent FTDI Drive		
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	Open last workspace	on start		A National Instruments Company
Manual Trigger				Not connected ! Status: NC

### Applied Statistics | Project preparation : Ball on an incline

## Launch WaveForms





Select Discovery2 DEMO and click Select 

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### Applied Statistics | Project preparation : Ball on an incline

# Select (DEMO) device





Click green plus and select **Supplies** 

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Logger	
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Manual Trigger	

### Applied Statistics | Project preparation : Ball on an incline

## Add power supplies





## **Power supply**

- Set Positive Supply (V+) Voltage to 5V
- By clicking on Master Enable is OFF you turn-on power supply for the instrument 0

		Welcome
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		Negative Sup
		USB powered, allowir

₩ WaveForms 2 (new workspace) Help ⊗ Supplies			68
Master Enable is Off			
ply (V+) Rdy	Voltage	5 V	
oply (V-) Rdy	Voltage:	-1 V	~
ng up to 500 mW total or 700 mA output per channel.			
	Discovery2 DEMO	Status: OK	6





### Now add Scope by clicking on green plus again

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	Window
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USB powered, allo	

## Add scope

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ıbt	<ul> <li>Wavegen</li> <li>Supplies</li> <li>Voltmeter</li> <li>Logger</li> <li>Logic</li> <li>Patterns</li> </ul>	s Off		Voltage:	5 V	
up	<ul> <li>StaticlO</li> <li>Spectrum</li> <li>Network</li> </ul>	or 700 mA output por channel		Voltage:	-1 V	~
wir	Impedance Protocol Script	or 700 mA output per channel.				
			Dis	scovery2 DEMO	Status: OK	8



- Oscilloscope display will appear
- Tick-off Channel 2
- Select trigger mode Record

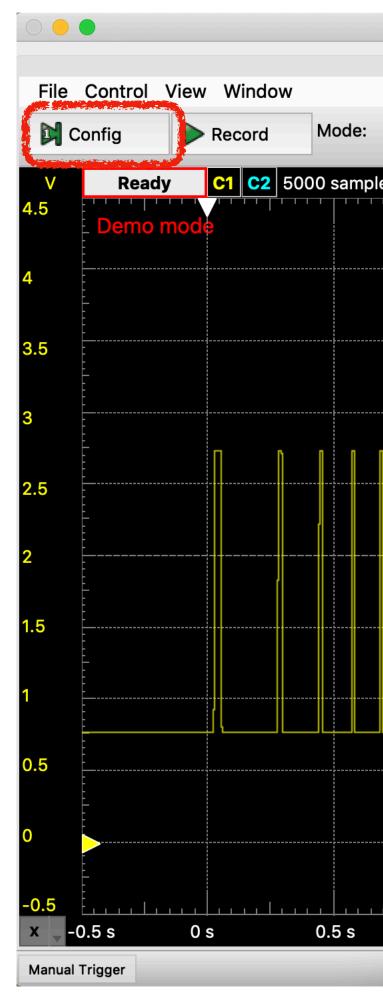


## Setup for oscilloscope



# **Configure your measurement**

- Click on Config and set the the values according to picture 0
- Do not forget tick-off Noise and tick-on Draw while recording
- Set Level to 2 V
- Adjust Time and Channel 1



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## Now you are ready to measure !

By clicking on Record, you will start measuring (in the lab) which will lasts for 5 seconds (a single run) 

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Applied Statistics | Project preparation : Ball on an incline

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## Save your workspace !!

Wave	Forms	Workspace	Settings	Window	Help		
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-0.5			<u> </u>			<u> </u>	
x 🖣 -(	0.5 s	0 s	0.5 s	1 s	1.5	ō s	2 s
Manual	Trigger						

Save your settings by clicking on Workspace->Save As so you can open it during lab and start working

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🔶 Help	🛛 😵 Scope 1						68
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# Export your data !!!

## After the measurement (in the lab), export your data as CSV file by clicking at File->Export



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# Now you are prepared!

Looking forward to seeing you in the lab!