EE 214 Notes

1 ampere is one coulomb of charged particles flowing through a path per one second

Every load has some resistance (resistance is in ohms)

Volts are the moving force of electricity

Amperes are current

Voltage= current x resistance|V=I x R

High side switch (positive side of power supply) low side switch (negative side of load/PSU)

Power = voltage\*current| Power=V\*I

Energy= Integral of power on interval of time| ꭍ power

Downward arrow = ground | ground is the negative side of circuit.

An absolute ground is grounded off circuit such as an earth ground

Ground is 0 volts

20v is the typical voltage most people withstand

Capacitor- device for storing charge. They can be used also to regulate voltages

Signal-voltage on a wire carried in response from eg a sensor

Analog and digital circuits depend on how signals are used an interpreted

Transducer microphones are an example. They take soundwaves and convert to voltage in wavelength in an analog circuit.

Digital circuits can only transfer 0 V or the VDD voltage

Generally the vdd for the baysys boards is 3.3v

Power rails (power delivery)

Electric circuit merely consumes electricity

Electronic circuit manages the load

Electronic analog circuit – variable voltage

Electronic digital circuit- voltage is either ~0 or ~VDD

Analog circuits have problems with signal noise

Digital circuits aren’t as restricted by signal noise

Logic high voltage= signal is a “1”

Logic low voltage= signal is a “0”

Diode- semi conductor device

A diode is a silicon semiconductor that is half doped + and half doped –

1.3v=.01amps\* resistor

Resistor must be 130 ohms