

# Analog Electronics Circuit

Course Code

BEEE3021



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# Introduction of Analog Electronics Circuit

The logo of Galgotias University is a stylized 'G' composed of three curved, overlapping bands in shades of yellow, blue, and red, set against a light grey circular background.

## **Source & References:**

*The materials presented in this lecture has been taken from various books and internet websites. This instruction materials is for instructional purposes only.*

*Referred book: R. Boylestad, Electronic Devices and Circuit Theory, 11th edition, Prentice Hall.*

# Topics:

1. Introduction to Analog Electronics Circuits
2. Syllabus of the course
3. Need and applications of the course
4. Course outcomes

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# Syllabus

## **Amplifier Design**

- **Non Linear Devices, Diodes**
- **BJT operation and its biasing**
- **FET and Biasing**
- **Small Signal and Hybrid Model**
- **Feedback Amplifiers & Oscillators**
- **Power Amplifiers**
- **Recent Trends in Analog Electronic circuits**

The logo of Galgotias University is a stylized circular emblem. It features a central blue swoosh that curves upwards and to the right, surrounded by several concentric, overlapping swooshes in shades of yellow, orange, and red, creating a sense of motion and energy.

Why should we Study Analog Electronic Circuit?

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# Digital vs Analog



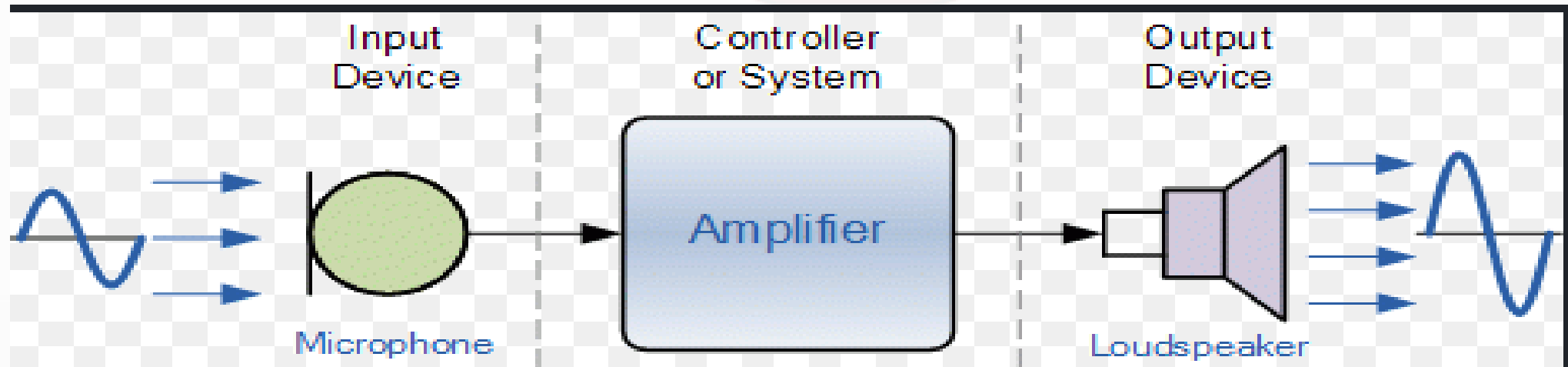
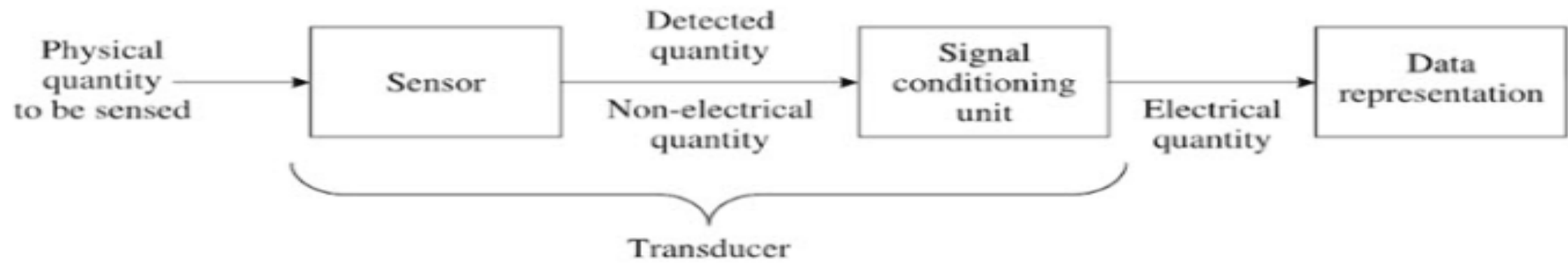
Analog

Digital

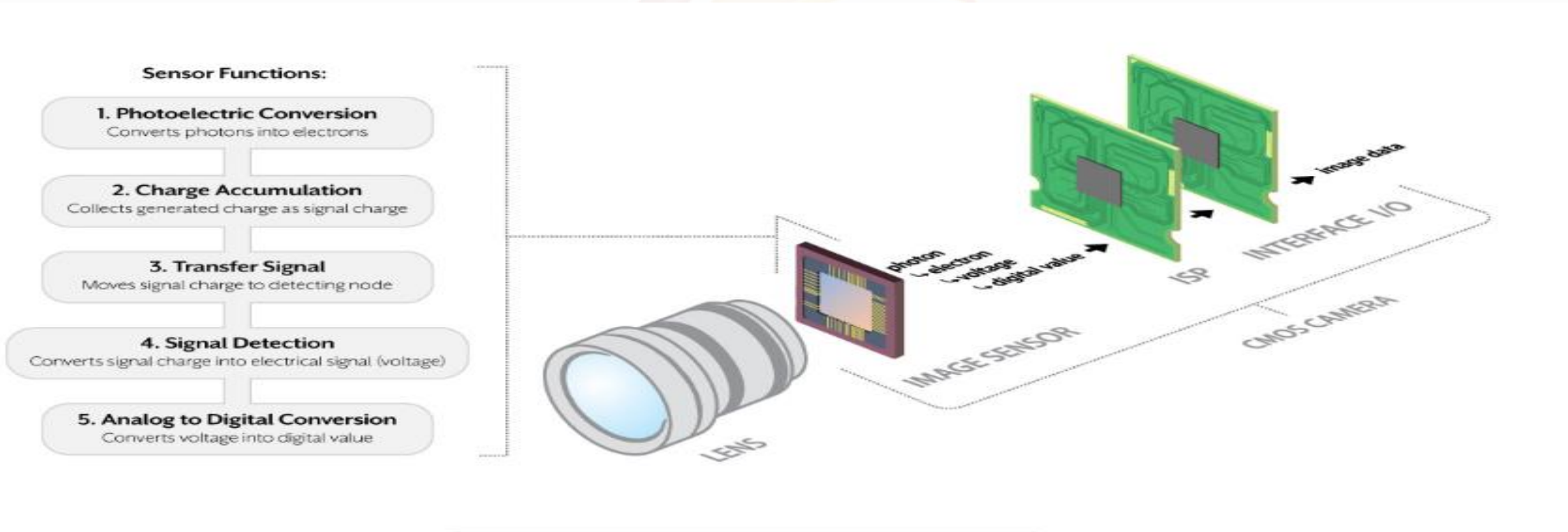


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# Why we need an Amplifier?



# Everything around us is Analog



***Above: Typical CMOS Camera Layout.***



# Why we need an Amplifier?



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# Is transformer an Amplifier?



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# What is an Amplifier?

An amplifier is not something that just increases the voltage or the current,

but it amplifies

Power

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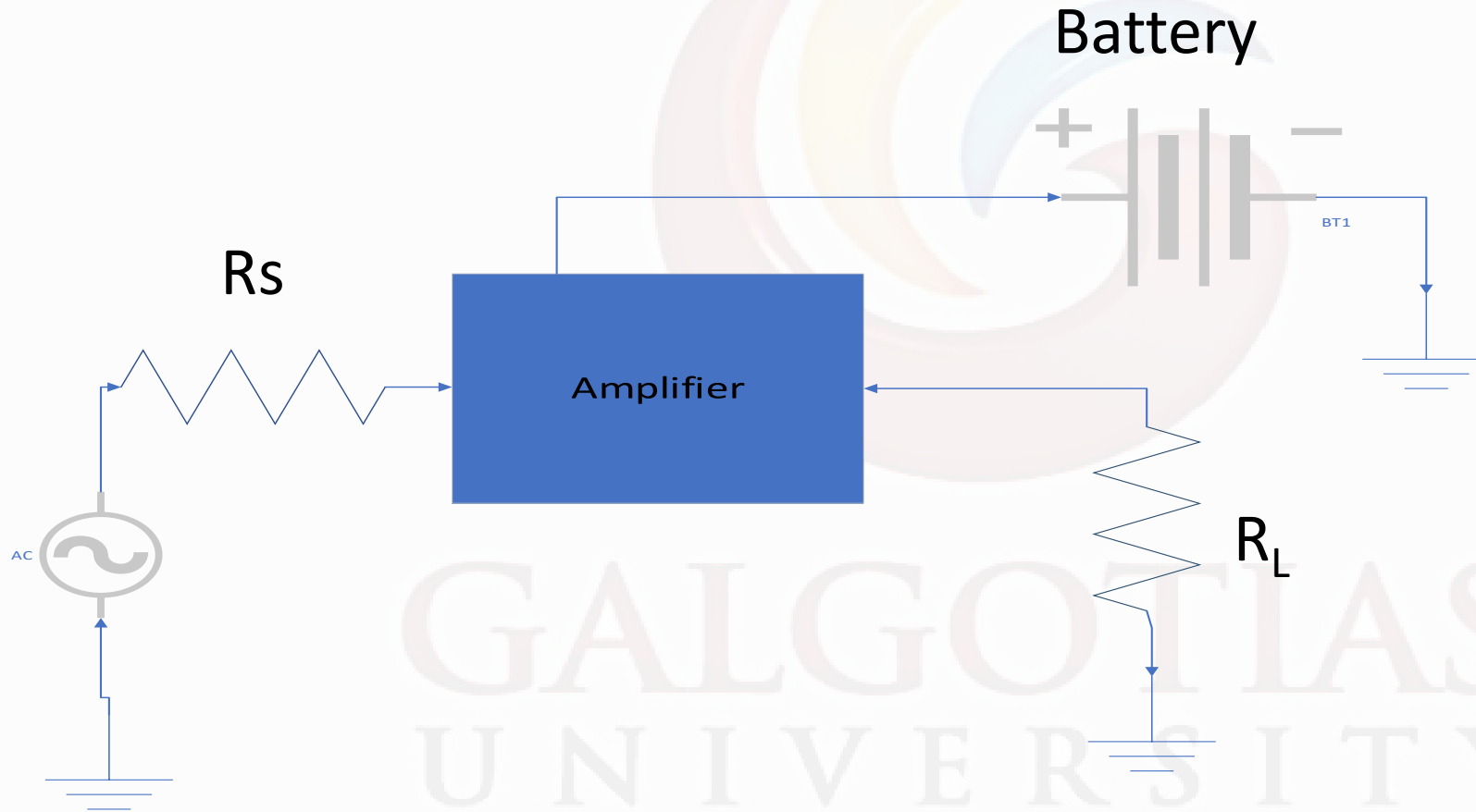
# The law of conservation of energy

From where the amplifier gets energy to amplify?

It's from the Battery or power supply(dc) connected to it.

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# Amplifier Design



# Components Needed to design an Amplifier?

	Linear	Non-Linear
Passive	R, L, C, Transformer	Diodes, LED
Active	V, I CCCS, CCVS VCVS, VCCS	BJT, FET MOSFET MESFET CMOS FinFET

# Course Outcomes

**After completing this course student will be able to:**

- Design biasing scheme for transistor circuits.
- Design and analyze BJT and MOSFET amplifier circuits.
- Design and analyze of feedback amplifier circuits.
- Design and analyze oscillator circuits using BJT and MOSFET
- Design and analyze Multistage and power amplifier.
- Design amplifier, oscillator and power amplifier using simulator.

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**THANK YOU**

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