

SKU-Basic Electronics

The goal of SKU-Basic Electronic is to provide basic information about electronic circuits. It develops the basic concept for a full understanding of analog and digital electronics in a manner that is clearer, interesting, and easier to understand through innovative graphical user interface which is easy to learn and extremely efficient to use. The course is developed as a self-study package with easy-to-navigate interface, explaining difficult electronics concepts by analogies, flash animations and examples.

The screenshot displays a circuit diagram titled "Bridge Rectifier". It features an AC voltage source V_{in} connected to a bridge of four diodes: D_1 (top-left), D_2 (top-right), D_3 (bottom-left), and D_4 (bottom-right). A load resistor R is connected across the bridge. A legend indicates that green arrows represent "Forward bias" and red arrows represent "Reverse bias". Below the circuit, two graphs show the input voltage V_{in} as a sine wave and the output voltage V_{out} as a full-wave rectified sine wave. The interface includes a pause button and a speaker icon at the bottom.

Topics covered in SKU-Basic Electronics:

Electronic Components

Topics Covered: Resistors, Inductors, and Capacitors, Color coding, Semiconductors, Diodes, Bipolar junction transistors and their working, Introduction to CC, CB & CE Transistors configurations.

Basic Electronic Circuits

Topics Covered: Half wave and full wave diode rectifiers, BJT amplifiers, Filters: low pass, high pass, band pass and band stop filters. Filter implementation: RC-filters, LC-filters.

Measuring Instruments

Topics Covered: Cathode ray oscilloscope and its applications, Multimeter and its application, LCR-Q meter and its application.

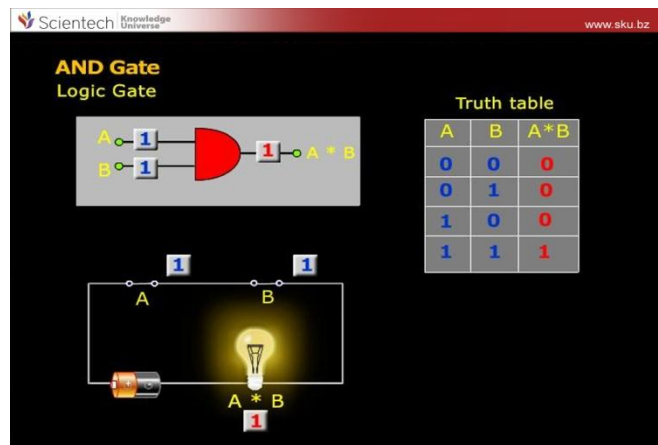
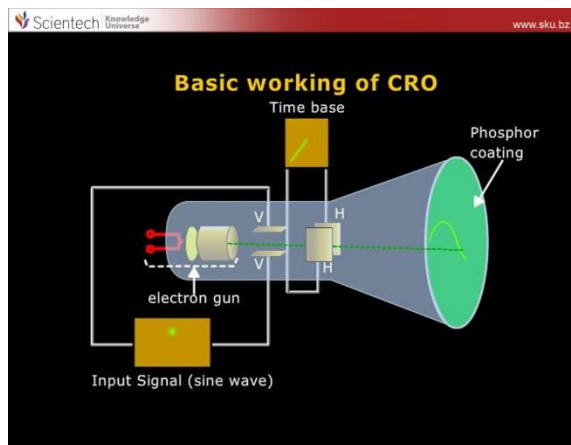
Digital Electronics

Topics Covered: Number systems: Decimal, Binary, Octal and Hexadecimal, Complements, Operation and Conversion, Floating point and signed numbers, De Morgan's theorem, logic gates: AND, OR, NOT, NOR, NAND, EXNOR, EX-OR, their representation & truth-table, Half and Full adder circuits, Flip-Flops: R-S and J-K.

Integrated Circuits

Topics Covered: Integrated Circuits(IC's) and their advantages over analogue circuits, Classification of IC's based on density levels, introduction to monolithic and hybrid IC's, OPAMP, Applications of OPAMP like inverting and non-inverting amplifiers, Integrator and Differentiator, 555-Timer and its application.

Print Shots of SKU-Basic Electronics:



Op Amp as Summing Amplifier

Input

V_{in} 4V, 3V, 1V

Output

V_{o} 8V

Final Output

V_{o} 8V, 4V, 3V, 1V

Clampers

$V_{in} = 3V$

V_{out}

$2V$

Charging Capacitor $V_{out} = -(V_c + V_{in} + 2)$

Discharging Capacitor $V_c = 3V$