



# V. V. COLLEGE OF SCIENCE & TECHNOLOGY

(Affiliated to University of Calicut)  
Chullimada, Kanjikode, Palakkad.  
DEPARTMENT OF ELECTRONICS



## Course Name: A Bridge Course on Basic of Electronics Components

**Eligibility:** BSc.Electronics Sem 1 (For those students who got admission in BSc.Electronics/ BSc.Computer Science Sem 1 in this College)

### About the Bridge Course:

A bridge course for the students of science faculty is conducted every year to get the students the knowledge of science faculty. The main objective of the course is to bridge the gap between subjects studied at Pre-university level and subjects they would be studying in science faculty. A Bridge course aims to cover the gap between the understanding level of the high school courses and higher educational courses. Bridge course is preparative course for college level course with an academic curriculum that is offered to enhance the knowledge of the students by means of preparing for the intellectual challenges of Science subject and to know basic information about core subject.

Bridge courses are the tool to help students to success in their graduate level studies. It is also a pre requisite and foundational course to know the basic information about science subjects.

### Objective

The bridge course aims to act as a buffer for the new entrants with an objective to provide adequate time for the transition to hard core of degree courses. This gives them a breather, to prepare themselves before the onset of courses for first year degree programme. During this interaction of twelve hours with the faculty and their classmates the students will be equipped with the knowledge and the confidence needed to take on bigger challenges in future.

### Design

The course consist of 12 Hrs of interactive sessions and an internal examination designed by the science departments which is compulsory for all students. The result will be published in the website as well as on the notice board



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## Syllabus for Bridge Course: Electronics

### Course Outline

#### Module I

Introduction to Electronics - Definition, applications, Electric field, Potential, Potential difference, Electric current, Charge, Voltage and Current Sources, AC and DC. Open and short circuit, Ohm's law, Factors affecting Resistance, Temperature coefficient, Power dissipation, Passive components – R, C, L - Types, symbols, specifications, Units, Colour coding, Series and parallel networks. Circuit control and protective devices - switches, fuses and relays, PCB.

#### Module II

Structure of Atom, Atomic number, Ionic & Co-valent bonds, Structure of solids – Band Theory, Energy bands, Insulators, Conductors, Semiconductors. Semiconductor materials, Intrinsic & Extrinsic Semiconductors. Diodes – PN junction diode, LED, LDR, Photo voltaic cell, Photo diode, Zener diode.

#### Module III

Bipolar Junction Transistors – Types, Modes, Configuration & Applications. Amplifiers & Oscillators.  
Electromagnetics: Faraday's law of electromagnetic induction, Maxwell's equations.

#### Module IV

Digital Electronics: Number systems, binary codes, logic gates, Boolean Expressions.

#### Module V

Communication Systems: Block diagram of a basic communication system – need for modulation, methods of modulation, over view of AM, FM, PM.

### Course outcome:

- To make the students familiar with the basic concepts of Electronics.
- To encourage and motivate the Students for the Technical Education.
- To make the students aware towards the various branches of Electronics for Example, Circuits, Networks, Communication and Embedded Systems.