

# DATTAKALA GROUP OF INSTITUTIONS FACULTY OF ENGINEERING

[ NAAC Accredited & ISO Certified ]

Approved by AICTE - New Delhi, DTE - Mumbai, Recognized by Govt. of Maharashtra

Affiliated to Savitribai Phule Pune University, Pune and M.S.B.T.E., Mumbai

[ DTE Code: 6628 | MSBTE Code: 1712 | AICTE ID: 1-5986711 | AISHE Code: C-44576 ]

Dr. A. N. N. Wanshi  
President

Mrs. Maya Zol  
Secretary

Prof. Ramdas M. Zol  
Founder - President

Date: 22/08/2025

## GUEST LECTURE NOTICE

All SE ECE Students are hereby informed that Guest Lecture is arranged on the topic "Analog and Digital Electronics" at 10:00 am to 12:00 pm on Monday, 25/08/2025. So All student should remain present in College at 9:00 am. Attendance is compulsory for all students.

  
Co - Ordinator

  
Dept. of Electronics & Computer Engineering  
Dattakala Group of Institutions  
Swami-Chincholi, Tal. Daund, Dist. Pune-413130

  
Principal  
Director  
Dattakala Group of Institutions  
Swami-Chincholi, Tal. Daund  
Dist. Pune-413130

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Prof. Ramdas M. Zol  
Founder - President

Mr. Rana Suryawanshi  
Vice - President

Mrs. Maya Zol  
Secretary

Date :22/08/2025

Ref. No.: DGOI/2025-26/

To,  
Devansh Gujrati  
Hitech electronics  
Dist:Pune

**Subject:** Invitation for Guest Lecture on the topic "**Analog and Digital Electronics**"

Respected Sir,

With reference to above mentioned subject our institute is one of the technical institute, approved by AICTE, New Delhi, recognized by Government of Maharashtra & affiliated to SPPU, Pune. We are offering Degree Engineering in Electrical, Civil, Mechanical, Electronics & Computer, Computer Engineering and Information Technology.

It gives me immense pleasure to invite you as a Guest Lecture conduction of to address our SE Engineering students on "**Analog and Digital Electronics**". Your thoughts would enable our students to gain knowledge from your expertise & experience.

The schedule for Guest Lecture would be on **Monday, 25/08/2025** & the scheduled time for Guest is **10:00 am to 12:00 pm**. Total Strength of student in class is **32**

Requesting you to accept the invitation to conduct the Guest Lecture on **25/08/2025**.

Anticipating a favorable reply from your side.

Thanking you,

H.O.D.  
Dept. of Electronics & Computer Engineering  
Dattakala Group of Institutions  
Swami-Chincholi, Tal. Daund, Dist. Pune-413130

PRINCIPAL  
Director  
Dattakala Group of Institutions  
Swami-Chincholi, Tal. Daund,  
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541/2, 527, Off Pune- Solapur Highway, Swami-Chincholi (Bhigwan), Tal - Daund, Dist. - Pune 413130 Maharashtra.  
| Email: dkgoi@dattakala.edu | Web: www.dattakala.edu.in | Contact No. 9673002923, 9673400500 |

Date: 25/08/2025

## Guest lec Report

Electronics & Computer Engineering Department for SE Students organized on "Analog and Digital Electronics" in our institute on 25/08/2025 (Monday) 10:00 AM to 12:00 PM.

**Name of the Program:** "Analog and Digital Electronics".

**Co-ordinator :** Prof. Waykule A.D.  
Electronics & Computer Engineering

**Name of Speaker:** Mrs Devansh Gujrati

**Date of Conduction:** 25<sup>th</sup> Jan 2025.

## **Objectives:**

1. **Understand Number Systems:** Learn binary, octal, decimal, and hexadecimal number systems and conversions between them.
2. **Study Logic Gates:** Understand the function and truth tables of basic logic gates like AND, OR, NOT, NAND, NOR, XOR, and XNOR.
3. **Design Combinational Circuits:** Learn to design and analyze combinational logic circuits such as adders, subtractors, multiplexers, demultiplexers, encoders, and decoders.
4. **Understand Sequential Circuits:** Study flip-flops, counters, and registers and their role in memory and data storage.
5. **Learn Digital Circuit Design:** Gain proficiency in designing synchronous and asynchronous digital systems.
6. **Use of Digital ICs:** Familiarize with integrated circuits and programmable logic devices.
7. **Understand Analog to Digital Conversion:** Learn about ADCs and DACs and their importance in interfacing analog and digital systems.

**Targeted Audience:** All students of SE Electronics & Computer Engg.

**Venue:** - SE Class room (3<sup>rd</sup> Floor) Electronics & Computer Department of DGIOE.

**Time:** -10:00 AM To 12:00 PM

**No. of Participants:** 32





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## Topics Covered in the Guest Lecture

### 1. Basic Concepts of Analog Electronics: Components, Amplifiers, Oscillators

- **Components:** The lecture began by introducing fundamental analog components such as resistors, capacitors, inductors, diodes, and transistors. Their roles in circuits—like controlling current, storing charge, or amplifying signals—were explained with practical examples.
- **Amplifiers:** The speaker explained the concept of amplification, where weak analog signals are boosted without altering their original waveform. Different types of amplifiers such as voltage amplifiers, operational amplifiers (op-amps), and their configurations were discussed.
- **Oscillators:** The principle of generating continuous periodic signals like sine waves or square waves was covered. Various oscillator circuits, such as RC, LC, and crystal oscillators, were introduced along with their applications in clocks, radios, and communication systems.

### 2. Digital Electronics Fundamentals: Number Systems, Logic Gates, Combinational and Sequential Circuits

- **Number Systems:** The lecture covered binary, octal, decimal, and hexadecimal number systems, emphasizing binary as the core language of digital electronics. Methods of converting between these systems were demonstrated.
- **Logic Gates:** The fundamental building blocks of digital circuits were explained. Each logic gate (AND, OR, NOT, NAND, NOR, XOR, XNOR) was described with truth tables, symbols, and real-world usage.
- **Combinational Circuits:** The speaker covered circuits where outputs depend solely on current inputs. Examples such as adders, multiplexers, encoders, and decoders were discussed.
- **Sequential Circuits:** Circuits where outputs depend on current inputs and past history were explained. Flip-flops, latches, counters, and registers were covered, highlighting their importance in memory storage and timing.

### 3. Real-World Applications of Analog and Digital Electronics

- The guest lecturer illustrated how analog and digital electronics play crucial roles in everyday devices:
  - **Analog:** Audio amplifiers, radio receivers, sensors, and signal processing.
  - **Digital:** Computers, smartphones, digital watches, calculators, and embedded systems.
- Examples of hybrid systems combining both analog and digital circuits were also discussed, such as analog-to-digital converters (ADCs) and digital-to-analog converters (DACs) used in audio and video devices.



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### 1. Differences and Interfacing Between Analog and Digital Circuits

- Key differences were highlighted, including:
  - **Signal Types:** Continuous signals in analog vs discrete signals in digital.
  - **Noise Sensitivity:** Analog signals are more prone to noise and distortion.
  - **Complexity and Accuracy:** Digital systems offer better accuracy and easier programmability.
- The lecture also covered techniques to interface analog signals with digital systems through ADCs and DACs, explaining their working principles and applications.

### 3. Latest Trends and Technologies in Electronics (If Discussed)

- The speaker touched upon current trends such as:
  - **Mixed-Signal ICs:** Integration of analog and digital circuits on a single chip.
  - **Low-Power Electronics:** Techniques to reduce power consumption for portable devices.
  - **IoT (Internet of Things):** Role of analog sensors and digital processing in connected smart devices.
  - **Advancements in Semiconductor Technologies:** Impact on speed, size, and efficiency of circuits.
- Emerging technologies such as flexible electronics, quantum computing basics, or AI integration with electronics might have been briefly introduced, depending on the session.

#### Photos:-





Dattakala Shikshan Sanstha's  
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Swami Chincholi, Maharashtra, India  
8p6m+gm4, Swami Chincholi, Maharashtra 413130, India  
Lat 18.311787° Long 74.734231°  
25/08/2025 11:31 AM GMT +05:30

Guest lect. Co-ordinator

HOD

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**DEPARTMENT OF ECE ENGINEERING**  
**Guest lec Attendance sheet**

Roll No.	Name of the Student	Sign
1	ADHAV CHAITANYA ANIRUDDHA	
2	BANSODE VINAYAK PRATAP	
3	BANSUDE POONAM SOMNATH	
4	BHANDVALKAR JOTSNA DATTATRAY	
5	CHAVAN GAURI SANDIP	
6	DHANGUDE SAI ATUL	
7	DURGUDE VISHWAJIT SUNIL	
8	GADHAVE PRITAM NANASO	
9	GAWADE CHETAN BHARAT	
10	GAWALI HARSHAD RAHUL	
11	GURAV VAISHNAVI ANIL	
12	HONMANE YASHRAJ SARJERAV	
13	KALAPNUR PAVITRA MALLIKARJUN	
14	KARKHANDE GHANSHYAM K	
15	KENDRE VISHNU MAROTI	
16	KOLEKAR RUSHIKESH SHAMRAO	
17	KUMBHAR SIDHESH DILIP	
18	LAKADE RUSHIKESH RAVSAHEB	
19	LYAHARKAR AVINASH SHIVDAS	
20	MAINDAD ANIKET BALAJI	
21	MATRE ATESH NAVNATH	
22	PATIL SARTHAK VILAS	
23	RATHOD SHREYA VISHAL	
24	SAWANT YASH ULHAS	
25	SHIRKE PRAJWAL JALINDAR	
26	THAVARE SURAJ APPASO	
27	UBALE KARTIK LAXMAN	
28	VANVE RAVI ANIL	
29	GAVHANE SANDESH	
30	NARUTE SHUBHAM	
31	GAIKWAD RAJWARDHAN	
32	SONAWNE	

Guest lect. Co-ordinator

HOD

**H.O.D.**  
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