

## Permission Letter

From

P.Sivasankar Rajamani,  
Associate Professor,  
Department of ECE,  
K.S.R College of Engineering,  
Tiruchengode-637 215.

Date: 3.4.2020

Place: Tiruchengode

To

The Principal,  
K.S.R College of Engineering,  
Tiruchengode-637 215.

Respected Sir,

Submitted to the principal

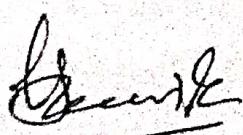
Sub: Requisition to conduct Guest Lecture-Reg

The ECE department has planned to conduct Guest Lecture on "Introduction to Digital Electronics" on 5.4.2020 .so we request you to grant permission to conduct the guest lecture on scheduled time.

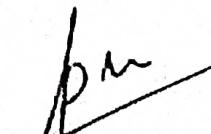
Thanking You,



Yours sincerely,



HOD/ECE



Principal

**K.S.R COLLEGE OF ENGINEERIG, TIRUCHENGODE**  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**GUEST LECTURE ON “INTRODUCTION TO DIGITAL ELECTRONICS”**

**GUEST LECTURE REPORT**

**Information Boucher**

Lion Dr.K.S.Rangasamy,M.J.F  
Founder chairman

Mr.R.Srinivasan B.E.M  
Vice - Chairman,KSREI

**K.S.R. College of Engineering (Autonomous)**  
**Tiruchengode – 637 215**

**Department of ECE**

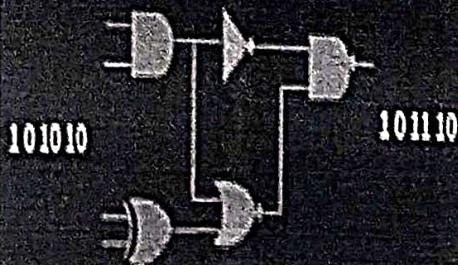
**Introduction to Digital Electronics**

Dr.K.S.Tamil Selvan,  
Professor,  
K.P.R Institute of Engineering  
And Technology,Coimbatore.

Date : 05.04.2020  
Time : 02.30 PM

Google Meet Link : <https://meet.google.com/mse-cwat-wnw>

## Introduction to Digital Electronics



K.S.R COLLEGE OF ENGINEERING

Department of ECE

Guest lecture



Dr.K.S.TamilSelvan,

Professor,

K.P.R.Institute of Engineering  
and Technology,Coimbatore.

Date:05.02.2020

Time:10.30 AM

Online mode

Link: <https://meet.google.com/mse-cwat-wnw>

## Contents

- Analog vs. Digital
- Why Digital or Analog?
- Advantages of digital over analog
- How to get digital from analog
- How its made
- Where are they used
- How do they look
- What's inside
- Levels of integration
- Digital design as Logic Circuits and its applications
- Number System and Interconversions

## Analog vs. Digital

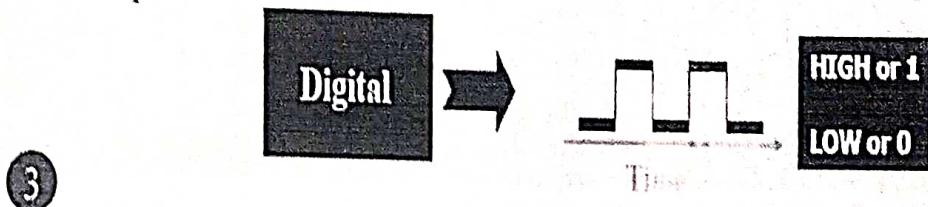
Analog signal- one whose output varies continuously in step with the input.

Example:



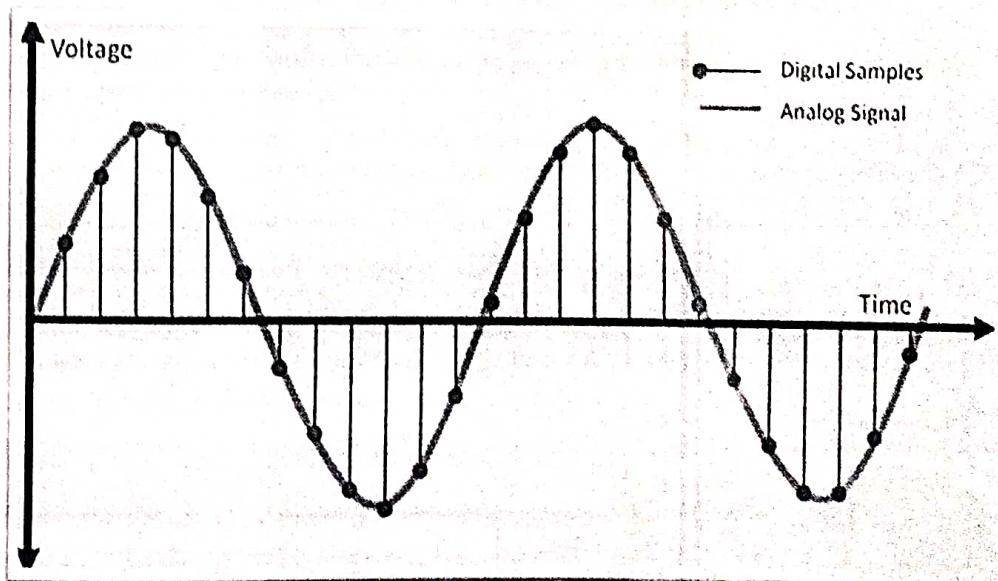
Digital signal- one whose output varies at discrete voltage levels commonly called HIGH or LOW (1 or 0).

Example:

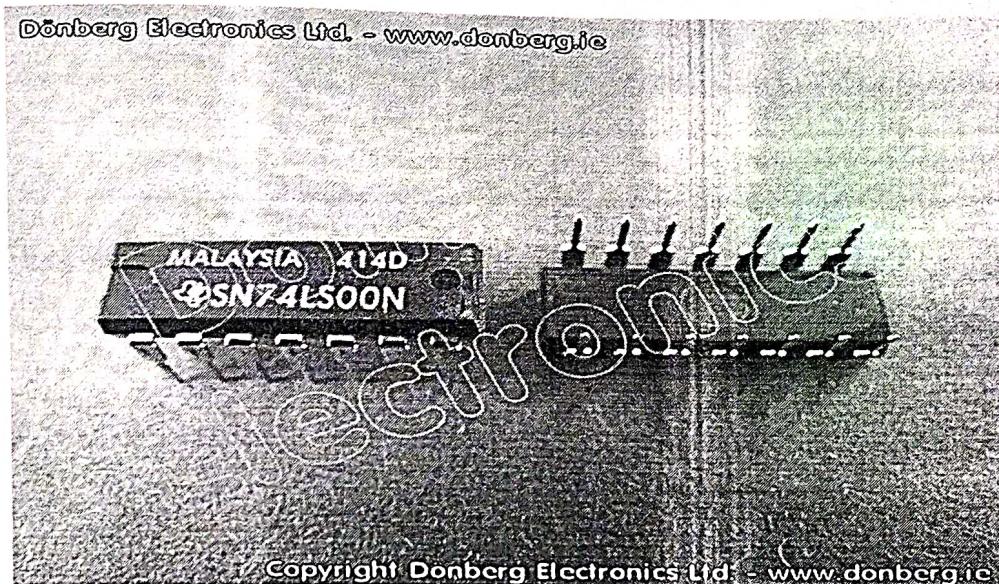


How to get Digital from Analog?

- SAMPLING



# How do they look?



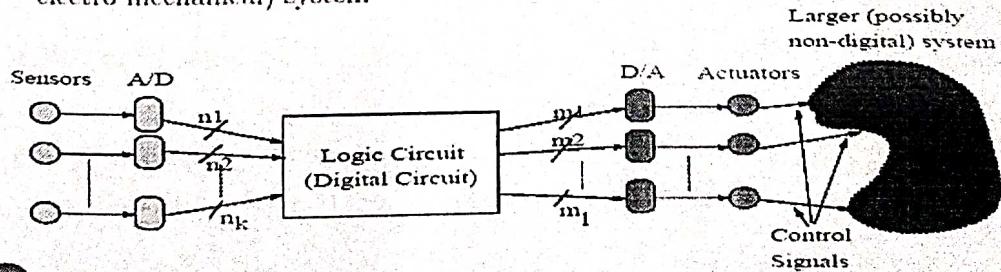
"SN74LS00" WHAT'S THIS??

10

## Application of logic circuits

- Computers: The brain, body and limbs of computer systems – everything in it except peripherals
- Embedded Systems: The brains that control the system (e.g. avionics, auto electronics, VCRs, microwaves, etc.)
- Digital Signal Processing (DSP): E.g. in digital cellular phones, digital TV

Besides, computers, logic circuits find the bulk of their application as the embedded systems or brains of an enormous variety of products. In such systems they are generally used as controllers of a larger (non-logic e.g., analog, electro-mechanical) system



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This slide is adapted from freely available slides of shantanu dutt.

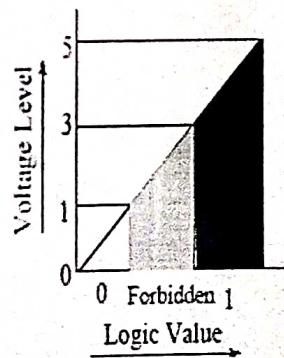
# The role of logic

- Digital system design is based on the principle of *logic* and the manipulation of logic symbols
- Digital system design is thus also termed *logic design*
- *Logic:* There are only 2 values associated with a statement or computation- True (T) or False (F)
- Example: Statement *A*: Today is a nice day  $\equiv$  F  
Statement *B*: This is a class of bright students  $\equiv$  T
- *Compound Statement:* Formed of *atomic* or simple statements that are joined together by the 3 basic operators: AND, OR, NOT. It is also called a *logic expression*
- Example: *A AND B*  $\equiv$  (Today is a nice day) AND (This is a class of bright students)  $\equiv$  F
- Similarly, *A OR B*  $\equiv$  T;  $\text{NOT}(B) \equiv$  F;  $A \text{ OR } (\text{NOT}(B)) \equiv$  F



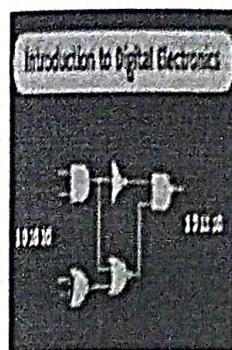
This slide is adapted from freely available slides of shantanu dutt.

- Defn In *positive logic* a 1 is represented by a high voltage (generally 3.5 V), and a 0 by a low voltage (generally 0.1 V)



- Reverse is the case for *negative logic*
- Most digital circuits are implemented in positive logic, and we will only focus on such circuits in this class

← digital electroni...



K.S.R COLLEGE OF ENGINEERING

Department of ECE

Guest lecture



Date 05.02.2020  
Time 10.30 AM

Online mode  
Link: <https://meet.google.com/mzse-cwst-wmz>

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## Analog vs. Digital

Analog signal- one whose output varies continuously in step with the input.

Example:



Dr.K.S.Tamil selvan is presenting....



yjo-dvmd-smm →



## Analog vs. Digital

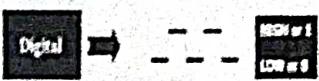
Analog signal- one whose output varies continuously in step with the input.

Example:



Digital signal- one whose output varies at discrete voltage levels commonly called HIGH or LOW 1 or 0.

Example:



## Why Digital?

- Data can be stored (memory characteristic of digital).
- Data can be used in calculations.
- Compatible with display technologies.
- Compatible with computer technologies.
- Systems can be programmed.
- Digital IC families make design easier.

## Why Analog?

Most "real-world" events are analog in nature.

Analog processing is usually simpler.

Analog processing is usually  
Traditional electronic systems  
were mostly analog in nature.

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← yjo-dvmd-smm →

**DSP Study Related with Technical Disciplines-  
Science, Engineering and Mathematics**

**Digital Filter**

**Filters**

- Filters are signal modulations.
- Filter functions by accepting an input signal. Blocking undesired frequency components and passing the original signal retains the required components to the output.

**Filter Types**

- Lowpass-Allows only low frequency signals to pass.
- Highpass-Allows only high frequency signals to pass.
- Bandpass-Allows both high & low frequency signals to pass, maintaining a limited range of frequency spectrum.
- Bandstop-Blocks both low and high frequencies but blocks a predefined range of frequencies.

The P-DSP follow the modified Harvard Architecture

Dr.K.S.Tamilselvan is presenting...

PANDI... : 060 : GOKU... :

You : JEEVA... : R's 93 Others :

Call icon, Share icon, Stop icon, More options icon

People	Information
Mohan Gv (You)	
Tamil Selvan (Presen...)	
003 DHANRAAJ S	
018 Karthick Raja. P	
028 Navachithu ponkuma...	
042 Santhosh K	
043 SARAN. C	
048 SNEKA.G.P	
049 SRI KOWSIKA. V	
056 Sudharsan.R_ECE	
058 SURUTHI K	
060 SUVITHA. M	
063 Vignesh.A	
BALAJI M	
Giridharan P	
GOKUL K BE ECE 20-24	
HARIISH R S BE ECE 20-24	
JAICHANDRU S BE ECE 2...	
JAYAPRAKASH R BE ECE ...	
JAYAPRavinRAJ R BE ECE...	
JEEVA R BE ECE 20-24	
JEEVANANTHAM P BE EC...	
KAMALESHKANNA P BE E...	
KATHIRVEL R BE ECE 20-24	

**K.S.R. COLLEGE OF ENGINEERING (AUTONOMOUS), TIRUCHENGODE -637215**

**DEPARTMENT OF ECE**

**Impact Analysis on Guest Lecture "Introduction to Digital Electronics"**

Department of Electronics and Communication Engineering had organized guest lecture on "Introduction to Digital Electronics" on 5<sup>th</sup> April 2020 through online mode.

The guest lecture began with welcome address by the Head of the Department, ECE Dr.P.S.Periasamy. He introduced and welcomed Dr.K.S.Tamil selvan, Professor, Department of ECE, K.P.R Institute for Engineering and Technology, Coimbatore, resource person to deliver the lecture. The lecture was attended by 93 students and 5 Faculty members of ECE department.

The guest speaker Dr.K.S.Tamil selvan focused on basics of digital electronics and different circuits of it. He also explained about SOC devices. He delivered an idea about real time applications of digital electronics. Furthermore he addressed the students about future scope of digital electronics.

The session ended with hearty thanks by P.Sivasankar to Resource persons and participants. He thanked the Management for providing the platform to organize guest lecture on innovative technologies.

**K.S.R.COLLEGE OF ENGINEERING (AUTONOMOUS), TIRUCHENGODE -637215**  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**Impact Analysis on Guest Lecture**

**From Participant's Feedback**

S.No	Parameter to be Analyzed	Number of Participants			
		Extremely Good	Good	Quite Good	Poor
1.	Helpful of the guest lecture	63	20	10	-
2.	Overall Organization of the Guest lecture	45	35	10	3
3.	Usefulness of the guest lecture from the Knowledge and subject point of view	36	40	15	7
4.	General suggestions/comments to improve the guest lecture	32	45	10	6

- The Guest Lecture was very informative that the faculties and students learnt about basics of digital electronics. It was wonderful for sharing and gaining knowledge regarding designing of digital circuits and its functions. The lecture was even more interesting with the real time examples.

*Impacts:*

- This Guest Lecture helped the faculties and students to improve their knowledge on the field of digital electronics and the students may have the opportunity to participate in more workshops that have taken place under various topics on digital electronics, held at various other colleges.
- The Students may also be insisted to publish many articles on digital electronics and circuits.
- The Guest Lecture has also motivated the students to do more projects in the field of digital electronics.

Impacts on Programme Outcomes:

**PO1-Engineering Knowledge:**

This Guest Lecture apply knowledge of mathematics, science and engineering fundamentals to solve problems in the domain of electronics and Communication Engineering.

**PO3 - Design/development of solutions:**

This guest Lecture design a system ,component ,or process to meet desired needs within realistic constraints such as economic,environmental,social,political,ethical,health,safety,manufacturability and sustainability.

**PO5 - Modern tool usage:**

This Guest Lecture apply techniques, skills, and modern engineering tools necessary for Engineering practice.

**PO4-Project Management and finance:**

This Guest Lecture conduct experiments, analyze and interpret experimental results and synthesize information to provide valid conclusion.

**K.S.R. COLLEGE OF ENGINEERING (Autonomous), TRUCHENGODE–637215**

**DEPARTMENT OF ELECTRONICS COMMUNICATION AND ENGINEERING**

**GUEST LECTURE on “INTRODUCTION TO DIGITALELECTRONICS”**

**DATE –05.04.2020 PARTICIPATION LIST**

S.No	Email Address	Full Name	Designation	Institution Name	Overall, How would you rate the events ?	Any other Comments
1.	luckyananth7@gmail.com	ANANDHA PRAKASH R	Student	K.S.R.College of Engineering	Excellent	Super
2.	2015002balaji@gmail.com	BALAJI S	Student	K.S.R.College of Engineering	Very Good	Nil
3.	dharaaj57@gmail.com	DHANRAAJ S	Student	K.S.R.College of Engineering	Excellent	Nice session
4.	giridharanpurusothaman@gmail.com	GIRIDHARAN P	Student	K.S.R.College of Engineering	Excellent	Good
5.	gokulsownm31@gmail.com	GOKUL K	Student	K.S.R.College of Engineering	Good	Thought provoking session
6.	gm9321425@gmail.com	GOWTHAM M	Student	K.S.R.College of Engineering	Very Good	Nil
7.	rsharish08@gmail.com	HARIISH R S	Student	K.S.R.College of Engineering	Good	Thanks for the session
8.	harishv0406@gmail.com	HARIISH V	Student	K.S.R.College of Engineering	Very Good	Want clear Q&A section
9.	hemanthyuv129m@gmail.com	HEMANTH KUMAR M	Student	K.S.R.College of Engineering	Excellent	Very nice session
10.	jaichandru2003@gmail.com	JAICHANDRU S	Student	K.S.R.College of Engineering	Very Good	Need this topic Guest lecture in another session

11.	jayaprakash09122002@gmail.com	JAYAPRAKASH R	Student	K.S.R.College of Engineering	Excellent	Excellent	Nothing
12.	tpiravinraj144@gmail.com	JAYAPRAVINRAJ R	Student	K.S.R.College of Engineering	Excellent	Good	Good
13.	jeevajack00801@gmail.com	JEEVAR	Student	K.S.R.College of Engineering	Good	No	No
14.	jeewananthampalanisamy6@gmail.com	JEEVANANTHAM P	Student	K.S.R.College of Engineering	Good	Nice	Nice
15.	jeevaravarma88@gmail.com	JEEVANANTHAM P	Student	K.S.R.College of Engineering	Excellent	Very nice session and is very informative..	Very nice session and is very informative..
16.	jinuravinkl@gmail.com	JINU R	Student	K.S.R.College of Engineering	Excellent	Nil	Nil
17.	kamaleshkanna850@gmail.com	KAMALESHKANNA P	Student	K.S.R.College of Engineering	Excellent	Useful session	Useful session
18.	karthickpalanikumar2002@gmail.com	KARTHICK RAJA P	Student	K.S.R.College of Engineering	Very Good	Informative session	Informative session
19.	tkarthigad@gmail.com	KARTHIGADEVI T	Student	K.S.R.College of Engineering	Very Good	Very informative session	Very informative session
20.	kathir12102003@gmail.com	KATHIRVEL R	Student	K.S.R.College of Engineering	Excellent	Excellent session	Excellent session
21.	kirudhanapai175@gmail.com	KIRUTHIKA D	Student	K.S.R.College of Engineering	Excellent	Useful session	Useful session
22.	logeshlevini@gmail.com	LOGESH S	Student	K.S.R.College of Engineering	Excellent	Good	Good
23.	mahaashruthy@gmail.com	MAHAA SHURUTHY G	Student	K.S.R.College of Engineering	Excellent	Nice session	Nice session
24.	manobalan2k03@gmail.com	MANOBALA S	Student	K.S.R.College of Engineering	Good	More informative	More informative
25.	mohanaprasath341@gmail.com	MOHANA PRASATH K	Student	K.S.R.College of Engineering	Excellent	Good session	Good session
26.	mohangv408@gmail.com	MOHANKUMAR GV	Student	K.S.R.College of Engineering	Very Good	No comments	No comments
27.	navachithuponkumard@gmail.com	NAVACHITHU PONKUMAR D	Student	K.S.R.College of Engineering	Excellent	No	No

28.	pandiselvi366@gmail.com	PANDISELVI P	Student	K.S.R.College of Engineering	Excellent	Very useful and informative session
29.	periyasamyselfam683@gmail.com	PERIYASAMY S	Student	K.S.R.College of Engineering	Excellent	Nil
30.	ravismathi385@gmail.com	PRADEEP R	Student	K.S.R.College of Engineering	Excellent	Useful session
31.	praveen1562003@gmail.com	PRAVEENKUMAR R	Student	K.S.R.College of Engineering	Very Good	Informative session
32.	praveenksrc2@gmail.com	PRAVEENKUMAR R	Student	K.S.R.College of Engineering	Very Good	Very informative session.
33.	pugazhenthimurugan789@gmail.com	PUGAZHENTHI V	Student	K.S.R.College of Engineering	Excellent	Excellent session
34.	srinj909@gmail.com	RAJA SRI B	Student	K.S.R.College of Engineering	Excellent	Useful session
35.	ssramya822003@gmail.com	RAMYA S S	Student	K.S.R.College of Engineering	Excellent	Good
36.	rishikesan703@gmail.com	RISHIKESAN R	Student	K.S.R.College of Engineering	Excellent	Nice session
37.	sabanishanmugam66@gmail.com	SABARI S	Student	K.S.R.College of Engineering	Good	More informative
38.	sangavisheshshadri69@gmail.com	SANGAVI S	Student	K.S.R.College of Engineering	Excellent	Good session
39.	sanjayspidi@gmail.com	SANJAY L	Student	K.S.R.College of Engineering	Very Good	No comments
40.	nsanthiya8778@gmail.com	SANTHIYA N	Student	K.S.R.College of Engineering	Excellent	No
41.	santhoshlovelyjana@gmail.com	SANTHOSH K	Student	K.S.R.College of Engineering	Excellent	Very useful and informative session
42.	csaranchinnusamy@gmail.com	SARAN C	Student	K.S.R.College of Engineering	Excellent	Nil
43.	sravananaramesh1910@gmail.com	SARAVANAN R	Student	K.S.R.College of Engineering	Excellent	Useful session
44.	shaminiselvin1@gmail.com	SHAMINI RAJA SALAMI S	Student	K.S.R.College of Engineering	Very Good	Informative

45.	shanjevi2002@gmail.com	SHANJEVI M	Student	K.S.R.College of Engineering	Very Good	Very informative session.
46.	yokeshshiva84@gmail.com	SIVAKUMAR M	Student	K.S.R.College of Engineering	Excellent	Excellent session
47.	snekagp25@gmail.com	SNEKA GP	Student	K.S.R.College of Engineering	Excellent	Useful session
48.	srikowsika2002@gmail.com	SRI KOWSIKA V	Student	K.S.R.College of Engineering	Very Good	Good
49.	srishabhanish1580@gmail.com	SRI SABHARISH S	Student	K.S.R.College of Engineering	Very Good	Nil
50.	sritharessay@gmail.com	SRIDHARAN J	Student	K.S.R.College of Engineering	Excellent	Useful session
51.	srividhya1782@gmail.com	SRIDHYA A	Student	K.S.R.College of Engineering	Excellent	Informative session
52.	subashm0653@gmail.com	SUBASH M	Student	K.S.R.College of Engineering	Excellent	Very informative session.
53.	shanmugamdeepa612@gmail.com	SUDHAKAR S	Student	K.S.R.College of Engineering	Excellent	Excellent session
54.	sudhakamallusamy31@gmail.com	SUDHAKAR N	Student	K.S.R.College of Engineering	Good	Useful session
55.	sudharsansudhan0204@gmail.com	SUDHARSAN R	Student	K.S.R.College of Engineering	Excellent	Good
56.	suriyajanani2528@gmail.com	SURIYAP	Student	K.S.R.College of Engineering	Very Good	Nice session
57.	suruthi227@gmail.com	SURUTHI K	Student	K.S.R.College of Engineering	Excellent	More informative
58.	suryaksu18@gmail.com	SURYA V	Student	K.S.R.College of Engineering	Excellent	Good session
59.	suvitha22042003@gmail.com	SUVITHA M	Student	K.S.R.College of Engineering	Excellent	No comments
60.	Vaishnavimuthu02@gmail.com	VAISHNAVI M	Student	K.S.R.College of Engineering	Very Good	No
61.	hariavaishu2004@gmail.com	VAISHNAVI V	Student	K.S.R.College of Engineering	Very Good	Very useful and informative

62.	vignesh.annadurai1705@gmail.com	VIGNESH A	Student	K.S.R.College of Engineering	Excellent	Nil
63.	ajith3011kumar@gmail.com	AJITHKUMARS S	Student	K.S.R.College of Engineering	Excellent	Useful session
64.	manibalaji117@gmail.com	BALAJI M	Student	K.S.R.College of Engineering	Excellent	Informative session
65.	dharanibaskaran222@gmail.com	DHARANITHARAN B	Student	K.S.R.College of Engineering	Excellent	Very informative session.
66.	dineshpprasanth6665@gmail.com	DINESH PRASANTH S	Student	K.S.R.College of Engineering	Very Good	Nil
67.	jerryhan875@gmail.com	HARI RAJ R	Student	K.S.R.College of Engineering	Excellent	Useful session
68.	jagans992000@gmail.com	JAGAN S	Student	K.S.R.College of Engineering	Excellent	Informative session
69.	jawaharmuthu4@gmail.com	JAWAHAR M	Student	K.S.R.College of Engineering	Excellent	Very informative session.
70.	jeaooty2003@gmail.com	JAYANTH S	Student	K.S.R.College of Engineering	Excellent	Excellent session
71.	jayasurya352002@gmail.com	JAYASURYA A	Student	K.S.R.College of Engineering	Good	Useful session
72.	1317142@gmail.com	JEEVA P	Student	K.S.R.College of Engineering	Excellent	Good
73.	sivagega969@gmail.com	JEGANATH T	Student	K.S.R.College of Engineering	Very Good	Nice session
74.	karanmettur2002@gmail.com	KARAN . S	Student	K.S.R.College of Engineering	Excellent	More informative
75.	karthickboss82164@gmail.com	KARTHICK S	Student	K.S.R.College of Engineering	Excellent	Good session
76.	logadeepak1222000@gmail.com	LOGADEEPAK.K.U	Student	K.S.R.College of Engineering	Excellent	No comments
77.	rx100loguvj@gmail.com	LOGESH P	Student	K.S.R.College of Engineering	Very Good	No
78.	manikantanmanikantan687@gmail.com	Manikandan P	Student	K.S.R College of Engineering	Very Good	Very useful and informative

79.	manjusri3101@gmail.com	MANUJ.R	Student	K.S.R.College of Engineering	Very Good	Nil
80.	mathimathiyyazhagan499@gmail.com	MATHIYAZHAGAN D	Student	K.S.R.College of Engineering	Excellent	Useful session
81.	muguntha55555@gmail.com	MUGUNTHON R	Student	K.S.R.College of Engineering	Excellent	Informative session
82.	mukunthanrevathi90@gmail.com	Mukunthan.M	Student	K.S.R.College of Engineering	Excellent	Very informative session.
83.	nareshsandy2002@gmail.com	NARESH KUMAR S	Student	K.S.R.College of Engineering	Excellent	Nil
84.	snavleen1799@gmail.com	NAVEEN KUMAR S	Student	K.S.R.College of Engineering	Good	Useful session
85.	poovarasas29@gmail.com	POOVARASAN.C	Student	K.S.R.College of Engineering	Excellent	Informative session
86.	pradheepkumar562001@gmail.com	PRADHEEP KUMAR.M	Student	K.S.R.College of Engineering	Very Good	Very informative session.
87.	Pranesh1212002@gmail.com	PRANESH . S	Student	K.S.R.College of Engineering	Excellent	Excellent session
88.	19304108prasadt@gmail.com	PRASSAD T	Student	K.S.R.College of Engineering	Excellent	Useful session
89.	g.rajith2001@gmail.com	RANJITH G	Student	K.S.R.College of Engineering	Excellent	Good
90.	sakthirajeece@gmail.com	Sakthi R	Student	K.S.R.College of Engineering	Very Good	Nice session
91.	sathishkumar351999@gmail.com	SATHISH KUMAR G	Student	K.S.R.College of Engineering	Very Good	More informative
92.	subash432432@gmail.com	SUBASH M	Student	K.S.R.College of Engineering	Very Good	Good session
93.	yasudhinyasudhin@gmail.com	YASUDHIN U	Student	K.S.R.College of Engineering	Very Good	No comments