

SDM College of Engineering and Technology, Dharwad

Department of Electronics and Communication Engineering

[AY:2021-2022]

Usage of the ICT-enabled tools for Effective Teaching and Learning processes used by the teachers

Table 1

Classrooms/Labs	Desktop/Laptop	LCD Facility	Internet Facility	Black Board	Seating Capacity
Room No. 25	Available	Available	Available	Available	80 to 100
Room No. 26*	Available	Available	Available	Available	80 to 100
Room No. 27	Available	Available	Available	Available	80 to 100
Room No. 28	Available	Available	Available	Available	80 to 100
Room No. 31	Available	Available	Available	Available	80 to 100
PG Room 1	Available	Available	Available	Available	25
PG Room 2	Available	Available	Available	Available	25
03 Labs	Available	Available	Available	Available	30 per lab

* Room No. 26 is fitted with Smart Board.

The ICT-enabled tools are used by teachers regularly for teaching and learning process. All the class rooms are equipped with the ICT tools mentioned in the above Table1. The geotagged photos of classrooms and labs are provided.





SDMCET ECE Department
Class Rooms
Room No 26
28.04.2022 10:20
15.43055, 75.01422
C2J7+6PX, Rajivgandhinagar, Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
Room No 27
28.04.2022 10:22
15.43058, 75.01414
C2J7+6PX, Rajivgandhinagar, Dharwad, Karnataka 580002



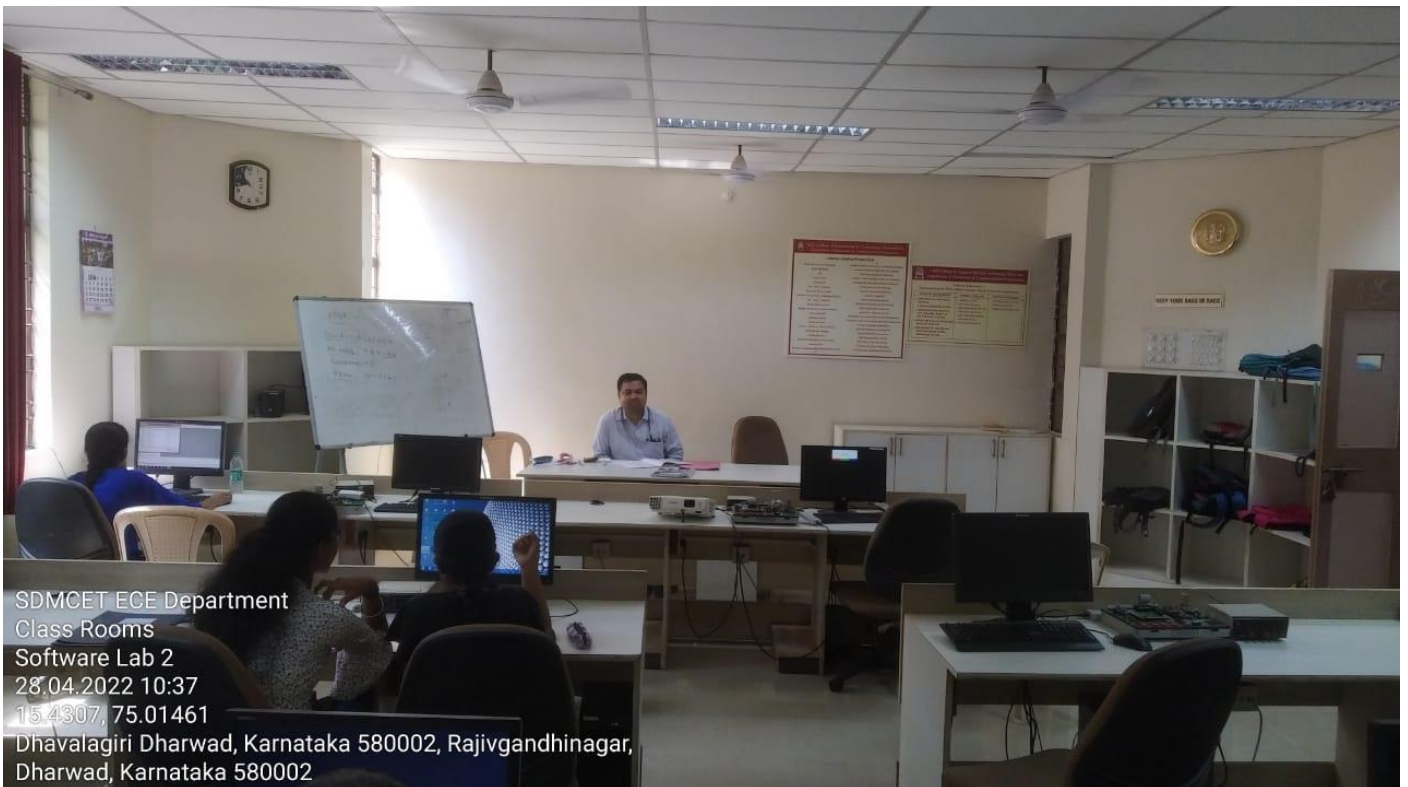
SDMCET ECE Department
Class Rooms
Room No 28
28.04.2022 10:28
15.43067, 75.01405
SDM College of engineering and technology, C2J7+7GG,
Rajivgandhinagar, Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
Room No 31
28.04.2022 10:31
15.4307, 75.01394
SDM College of engineering and technology, C2J7+7GG,
Rajivgandhinagar, Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
Software Lab 1
28.04.2022 10:39
15.4309, 75.0138
Dhavalagiri Dharwad, Karnataka 580002, Rajivgandhinagar,
Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
Software Lab 2
28.04.2022 10:37
15.4307, 75.01461
Dhavalagiri Dharwad, Karnataka 580002, Rajivgandhinagar,
Dharwad, Karnataka 580002



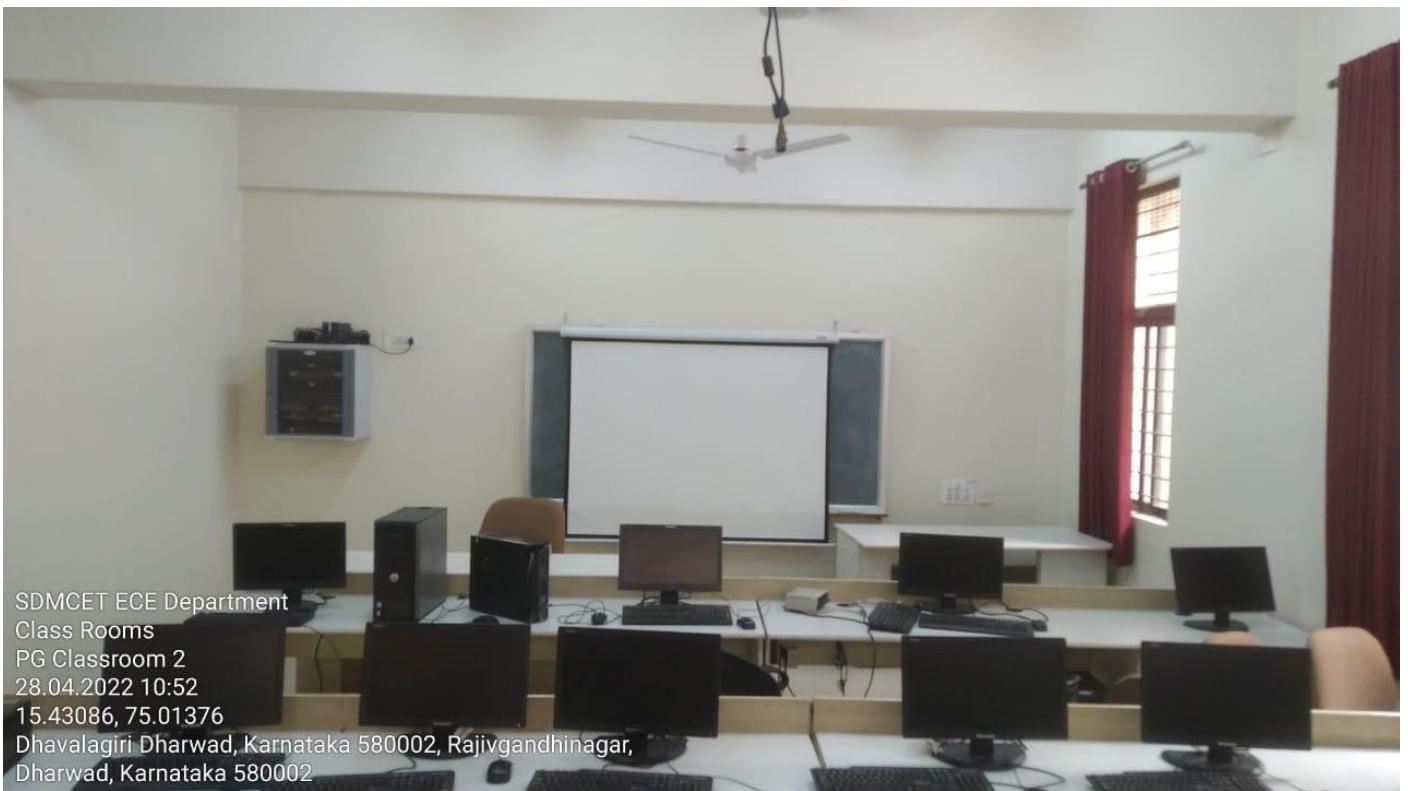
SDMCET ECE Department
Class Rooms
Digital Circuit Design Lab
28.04.2022 10:57
15.43083, 75.01363
C2J7+8CG, Rajivgandhinagar, Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
Analog Electronics Laboratory
28.04.2022 10:54
15.43088, 75.01374
Dhavalagiri Dharwad, Karnataka 580002, Rajivgandhinagar,
Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
PG1 Classroom
28.04.2022 10:41
15.43085, 75.01382
Dhavalagiri Dharwad, Karnataka 580002, Rajivgandhinagar,
Dharwad, Karnataka 580002



SDMCET ECE Department
Class Rooms
PG Classroom 2
28.04.2022 10:52
15.43086, 75.01376
Dhavalagiri Dharwad, Karnataka 580002, Rajivgandhinagar,
Dharwad, Karnataka 580002

M. H. K.

Prof. & Head
Dept. of Electronics & Communication Engg
M. J. College of Engineering & Technology
Dhavalagiri-Dharwad-580 002

SDM College of Engineering and Technology, Dharwad
Department of Electronics and Communication Engineering

Novel Teaching/Learning Practices

The department has unique novel teaching and learning practices which are best practices followed since from the inception of the department. The Best Practices followed in the department are listed here. Course teachers motivate the students to take up NPTEL courses in particular domain of interest. Sample certificates are attached and list of students is provided those who have taken up NPTEL courses. Also some course teachers adopt unique practice of Activity based learning, the proof is attached for the same. Students are taken for industrial visits to gain real time exposure of the processes and mechanisms in the industry.



Prof. & Head
Dept. of Electronics & Communication Engg
SDM College of Engineering & Technology
Dharwad-Dharwad-590 002

Competence, Commitment and Teamwork

SDME Society's

**SDM COLLEGE OF ENGINEERING AND TECHNOLOGY,
DHARWAD – 580 002**

(An Autonomous Institution affiliated to Visvesvaraya Technological University, Belagavi - 590 018)



Department of Electronics and Communication Engineering

Best practices in the Department

Best Practices Adopted

- Use of Videos and e-learning material for giving exposure to the present trends and scenarios.
- Encouraging students to register for NPTEL courses.
- Encouraging students to apply for KSCST-SPP and VTU funding for the innovative projects.
- Motivating students to participate in extra-curricular activities to enhance their communication skills, team work, life-long learning etc.
- Participation of faculty members in short term courses, faculty development programs and workshops on advanced topics to keep in pace with the advanced level of knowledge and skills.
- Project based Teaching and Learning.
- Interaction with placed students, mock interview by placed students to juniors.
- Connecting classroom delivery with industry experts.
- Guest lecture on technical topics.
- Sharing study materials through Blogs.
- Distribution of various responsibilities among faculty to inculcate leadership quality and smooth functioning of the department.
- Visit to reputed institutes to inculcate their best practices.

Sl. No.	Name of the Faculty	Best Practices
1	Dr. Vijaya C	Interactive teaching/learning, Project based learning, Seminars on topics beyond syll.
2	Dr. Gopal A Bidkar	Study of Campus Networking, Connecting devices; PC to PC Communication; Report Submission
3	Dr. Shreedhar A. Joshi	Interactive teaching/learning, showing related videos Project based learning.
4	Dr. Satish S. Bhairannawar	Project based learning.
5	Mrs. Savitri Raju	
6	Dr. Hemalata V. Bhujle	Project based learning & solving Gate questions.
7	Dr. S. S. Kerur	
8	Dr. Kalmeshwar. N. Hosur	Simulation based assignments / case studies.
9	Dr. S. V. Viraktamath	Project based learning / sim ^{based} based assignment
10	Dr. Sharada C. Sajjan	Simulation ^{based} activity, Gate problems discussion
11	Mrs. Jayashree C. Nidagundi	showing related Videos & Simulation based group assignment
12	Mr. Siddalingesh S. Navalgund	Simulation of based assignments.
13	Mrs. Mala L. Muddannavar	Interactive Teaching/learning, showing related videos giving assignments from NPTEL course
14	Mr. Vinayak Miskin	Interactive teaching/learning, showing related Videos, Giving assignments from NPTEL
15	Mrs. Sumangala Bhavikatti	① Asked to visit nearby industry to know control systems used. ② Asked to register for NPTEL DCPL course & solve Quiz questions.
16	Mr. Sunil S. Mathad	
17	Mr. M. Vijay Kumar	Showing related Videos;
18	Mr. Bairu K Saptalakar	showing related videos
19	Mr. Ravishankar S. S.	Interactive Teaching/Learning.
20	Mr. Kotresh E. Marali	Simulation based / Tool based assignments apart from regular lab experiments.
21	Mrs. Channakka C Lakkanavar	Hobby Projects related to theory subject.
22	Mrs. J V Sangeethagouda	Interactive teaching, showed related video Game project for group activity
23	Mrs. Reshma Nadaf	Interactive teaching/learning. Project based learning.

<u>Sl. No.</u>	<u>Name of the Faculty</u>	<u>Best Practices</u>
24	Mrs. Preeti S. Bellerimath	Interactive teaching, learning, Project based teaching
25	Mr. Shrikanth K. Shirakol	Interactive Teaching learning, Assigning a course project for CCA as a group activity.
26	Mr. Vyas R Murnal	Interactive learning, project-based Teaching
27	Mr. Raghuram K.M.	
28	Ms. Megha G. Shidenur	Interactive teaching learning, Project based learning, showing related videos

Best Practice

Title of the Practice:- Hobby projects

Course Teacher: Prof. Megha G. Shidenur

Target Group Details :Students

Semester:-II 'G'

Branch:-First Year

Course:-Basic Electronics

No. of Students:- 80

Duration:-Jan 2019 to May 2019

Objectives Outcomes:-

1. Identification of components.
2. Building the circuit
3. Working of circuit

Methodology:-

1. Making the group of students.
2. Choosing the circuit.
3. Building the circuit.
4. Demonstration of the working of circuit.
5. Preparation of report.

Observed Impact: -

Students showed interest in collection of circuits and were able to connect the circuit using the breadboard. Few students were able to make small models

Best Practice

Title of the Practice : Registering NPTEL course.

Course Teacher : Prof. Sumangala N.B

Target Group Details :

Semester:- III Sem students (Even sem 2018-19)

Branch:- Electronics and Communication Engineering.

Course:- Digital Circuit Design.

No. of Students:- 60

Duration:- 12 weeks

Objectives : To study the Digital circuits.

Outcomes :

1. Students could analyse various combinational and sequential circuits.
2. Students could design various combinational and sequential circuits.

Methodology : The students were advised to register for the NPTEL course.

They were asked to show their score of online Quiz.

Observed Impact : The students could better understand the working of Digital Circuits.

Best Practice

Title of the Practice : Visit to industry

Course Teacher : Prof. Sumangala N.B

Target Group Details :

Semester:- IV Sem students (Even sem 2017-18)

Branch:- Electronics and Communication Engineering.

Course:- Control systems

No. of Students:- 60

Duration:- one day

Objectives : To know the real time control systems being used in Industries.

Outcomes :

1. Control systems used in milk industry
2. Control systems used in Ice factory
3. Control systems used in Microfinish etc.

Methodology : The students have visited various industries in Dharwad and also paper mill Dandeli, to know various control systems used .

They submitted the reports of their visit.

Observed Impact : The students have come to know the real time control systems.

Best Practice

Title of the Practice : Interactive Teaching/Learning

Course Teacher : Prof. S. S. Ravishankar

Target Group Details :

Semester:- VI Div: B

Branch:- Electronics & Communication Engg.

Course:- Management, Entrepreneurship & IPRs

No. of Students:- 67

Duration:- 11-01-2019 to 03-05-2019

Objectives : To make students understand the important concepts

Outcomes :

1. Students understand concepts of Entrepreneurship.
2. Students learn about corporate culture.
3. Students learn aspects of IPRs

Methodology : Questions are asked to the students regarding the concepts of Entrepreneurship, Management and IPRs. Real world examples are quoted to illustrate the important concepts. Students are asked to browse the internet about all the topics of this course.

Observed Impact : Students have understood the various aspects of Management, Entrepreneurship & IPRs as they are applied in the real world.

Signature of Course Instructor:



SDM College of Engineering & Technology, Dharwad-02

Department of Electronics & Communication Engineering

Date: 19.08.2019






















Circular

Faculty members are requested to provide the details regarding the note worthy best practices followed in teaching their respective subjects or conducting the labs. Following are the some examples for you reference but may not be limited to.

- Interactive teaching / learning.
- Assigning group activities.
- Showing related videos.
- Project based learning .
- Developing and providing learning modules, materials.
- Assigning, Laboratory activities other than the regular experiments.
- Solving GATE QPs.

Submit a brief report and records on or before 22nd August, 2019


HOD, ECE

VC	GAB	SAJ	SSB	SR	HB	SSK	KNH	SVV	SCS	JCN	SSN	MLM	VM
													
SNB	SSM	MVK	BKS	SSR	KM	CCL	JVS	RN	PB	SKS	VRM	RKM	MGS
													

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Department of Electronics and Communication Engineering

NPTEL Certificate of Students

SDM College of Engineering and Technology, Dharwad
Department of Electronics & Communication Engineering

Students participation in NPTEL online examination

Sl No.	Name of the Student	Course	Score	Award
1	Savani M Nimbargi	The joy of computing using python	90%	>=90 Elite +Gold Medal
2	Sushmita	Digital Circuits	51%	40-59 Successfully completed the course
3	Suvarna Nayak	Digital Circuits	46%	40-59 Successfully completed the course
4	Krishna S N	Digital Circuits	47%	40-59 Successfully completed the course
5	Kartik Arkasali	Digital Circuits	53%	40-59 Successfully completed the course
6	Mukund Potdar	Digital Circuits	44%	40-59 Successfully completed the course
7	Manjoj Venkatesh Joshi	Digital Circuits	57%	40-59 Successfully completed the course
8	Aishwarya J Hirur	Digital Circuits	49%	40-59 Successfully completed the course
9	Shreya R Gondakar	Digital Circuits	67%	60-59 Elite
10	Shrihari Vaidya	Digital Circuits	48%	40-59 Successfully completed the course
11	Shweta S Shetti	Digital Circuits	62%	60-59 Elite
12	Laxmi R Kardegouda	Digital Circuits	45%	40-59 Successfully completed the course
13	Bhoomika S Katti	Digital Circuits	64%	60-59 Elite
14	Chinmaya Gumaste	Digital Circuits	47%	40-59 Successfully completed the course
15	Vijay Ugalawat	Digital Circuits	54%	40-59 Successfully completed the course
16	Ranjita Kukanur	Digital Circuits	47%	40-59 Successfully completed the course
17	Nidhi Magadum	Digital Circuits	45%	40-59 Successfully completed the course
18	Vaibhav Naidu	Digital Circuits	60%	60-59 Elite
19	Aishwarya Patil	Digital Circuits	50%	40-59 Successfully completed the course
20	K. Malathi	Digital Circuits	41%	40-59 Successfully completed the course
21	G Shravanthi	Digital Circuits	61%	60-59 Elite
22	Vishwas Bhat	Digital Circuits	40%	40-59 Successfully completed the course
23	Smarth Garje	Digital Circuits	58%	40-59 Successfully completed the course
24	Achyut Mathad	Digital Circuits	62%	60-59 Elite
25	Sudheer Reddy	Assignment	30%	
26	P Manoj Kumar	Assignment	69%	
27	Nikhil N	Assignment	41%	

(Handwritten signature)

Sl No.	Name of the Student	Course	Score	Award
28	Satwik C R	Assignment	55%	
29	Nandeesh	Assignment	58%	
30	Darshini Salimath	Assignment	50%	
31	Anusha Vasi	Assignment	61%	
32	Pavitra B Ayyajjanavar	Assignment	40%	
33	Anad G Bhat	Assignment	53%	
34	Pooja Patil	Assignment	66%	
35	Ganapati	Assignment	29%	

Signature



Roll No:NPTEL18CS35S21370055

To

SAVANI M NIMBARGI
28/4, GANESH KRUPA,
4TH CROSS, GANDHI NAGAR
DHARWAD
KARNATAKA
580004
PH. NO :8123355821



Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:3



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

SAVANI M NIMBARGI

for successfully completing the course

The Joy of Computing Using Python

with a consolidated score of **90 %**

Online Assignments	24/25	Proctored Exam	66/75
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Total number of candidates certified in this course: **4045**

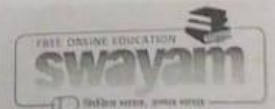
Prof. A. Ramesh
Chairman
Center for Continuing Education, IITM

Jul-Oct 2018
(12 week course)

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL18CS35S21370055

To validate and check scores: <http://npTEL.ac.in/noc>



Roll No:NPTEL18EE33S21370003

To

SUSHMITA
DHANVANTARI BUILDING, KC PARK, OPPOSITE
RODSON APPARTMENT, DHARWAD.
DHARWAD CITY
DHARWAD
KARNATAKA
580008
PH. NO :7892500372

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate



No. of credits recommended by NPTEL:3



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

SUSHMITA

for successfully completing the course

Digital Circuits

with a consolidated score of **51 %**

Online Assignments	13.72/25	Proctored Exam	37.5/75
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Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Total number of candidates certified in this course: **4707**

Jul-Oct 2018
(12 week course)

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL18EE33S21370003

To validate and check scores: <http://npTEL.ac.in/noc>



Roll No:NPTEL18EE33S11380052

To

SAMARTH GARJE
SRI GANESH SAREE CENTER NEAR GOLD MARKET
SADANAND SWAMY MATH COMPLEX
BASAVAKALYAN
BIDAR
KARNATAKA
585327
PH. NO :8660283356

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate



No. of credits recommended by NPTEL:3



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

SAMARTH GARJE

for successfully completing the course

Digital Circuits

with a consolidated score of **58 %**

Online Assignments	20.97/25	Proctored Exam	37.5/75
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Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Total number of candidates certified in this course: **4707**

Jul-Oct 2018
(12 week course)

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL18EE33S11380052

To validate and check scores: <http://npTEL.ac.in/noc>



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

ACHYUT MATHAD

for successfully completing the course

Digital Circuits

with a consolidated score of **62 %**

Online Assignments	21.78/25	Proctored Exam	40.5/75
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Total number of candidates certified in this course: **4707**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Jul-Oct 2018
(12 week course)

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL18EE33S11380014

To validate and check scores: <http://nptel.ac.in/noc>

Activity Based Learning for VLSI Subject (Sample Copy)

VLSI -2021-22

Stream Classwork People Grades

Class code
ckavw17

Upcoming
No work due soon
View all

Announce something to your class

Jaya N
Feb 1

Check your CIE marks and if any discrepancy or for some students CTA marks are not finalized those have to meet and clarify the same on/before 2-2-2022

CIE_marks_intial.pdf
PDF

Add class comment...

Assignment List.pdf Design of 1-bit Co...pdf 3 input AND gate (...pdf)

Show all

AM 09:52 27-04-2022

<https://classroom.google.com/u/1/c/NDA3MTMyNTI4MzMz>

VLSI -2021-22

Stream Classwork People Grades

Chapter 3.pptx
PowerPoint

Basic Circuit Concepts.pptx
PowerPoint

Add class comment...

Jaya N
Dec 16, 2021

CMOS VLSI CTA activity

cmos_cta_form.docx
Word

Add class comment...

Jaya N
Dec 9, 2021

unit-3 text book

Basic VLSI Design (PDFDri...
PDF

Design of 1-bit Co...pdf 3 input AND gate (...pdf)

Show all

AM 09:41 27-04-2022

Note: Design the schematic and layout for the following projects using CMOS technology. Show simulation results before /after one week of IInd-IA.

Team NO	Name	Name	Name	Project Assigned
1	Vishal M Mamadapur	Soumyranjan jeena	----	Half adder
2	Divya Murdeshwar	Keerti Badiger	----	Three input NAND gate
3	G VINAY KUMAR	AKSHAYAKUMAR GURUVADEYAR	----	Three input NOR gate
4	Pavan gutti	Muttu Bhovi	Omkar goankar	1-bit Full adder sum output
5	Aditi Angadi	Deeksha Datanal	----	Two input XOR gate
6	Nandan Bujurke	Praveen P C	Omkar Dhepi	1-bit Full adder carry output
7	Rakshita R Karnam	Rakshita Kulkarni	Seetabai Rajaput	Half subtractor
8	Sumati Gouda	Namitha Hiremath	Pooja Kotabagi	1-bit subtractor borrow output
9	Prajwal Angadi	Vinayak P Wali	Sahana P Kerakanur	1-bit subtractor difference output
10	Preeti jawayi	Pooja kalakani	Parvati waddar	$Y=NOT(AB+C)$
11	Nandita Magadum	Nayana Hiremath	Nischal Shetty	$Z=NOT(A+B)C$
12	Appu Kumbar	Siddhartha Nabhapur	Ashish kulkarni	Two input XNOR gate
13	Kiran C B	Sudeep H	----	Two input NAND gate
14	Usha Hullikashi	Shreya padukone	Vinayak Damodar	Three input AND gate
15	Rohit S	Ritin G	Umakanth U	Three input OR gate
16	Abhinandan R Appannavar	Amogh kulkarni	Shivam kumar Tripathi	2:1 Multiplexer
17	Pavan s kammar	Vinod s Hosamani	Manjunatha R Dodamani	2:4 Decoder
18	Shreya Umarani	Totashri P Sajjanar	Sugnyani Patil	2-bit Comparator
19	Anusha Paschapura	Pooja patil	Pooja kalyanmath	
21	Darshan B Jahagirdar	Basava Devaragudi	----	1-bit Comparator
22	Srirang Mudhol	Shriharsha Shridhar Harihar	Ulavesh M Swadi	Two input OR gate using Transmission gates
23	Rajat S Raikar	G R Deepak Kumar	Rajat Raju Padiyar	Two input XOR gate using Transmission gates
24	Nishant V	Ephraim M	----	Tristate Buffer

Sample Report1 for Activity Based Learning for VLSI subject

**SDM COLLEGE OF ENGINEERING AND
TECHNOLOGY, Dharwad-580002**
(An autonomous Institution affiliated to
Visvesvaraya Technological University, Belgaum – 590018)



Department of Electronics and Communication Engineering

A CMOS Activity entitled

“Three input AND gate using CMOS inverter”

Proposed by

Mr.Vinayak.Damodar – 2SD19EC117

Mrs.Usha B Hullikashi – 2SD19EC115

Mrs.Shreya Padukone – 2SD19EC093

Students of 5th semester

Under the guidance of

Dr. Jayashree C Nidagundi

Department of Electronics and Communication Engineering,
SDMCET, Dharwad-02
Academic Year 2021-2022

Aim: To design and verify CMOS Three Input AND gate

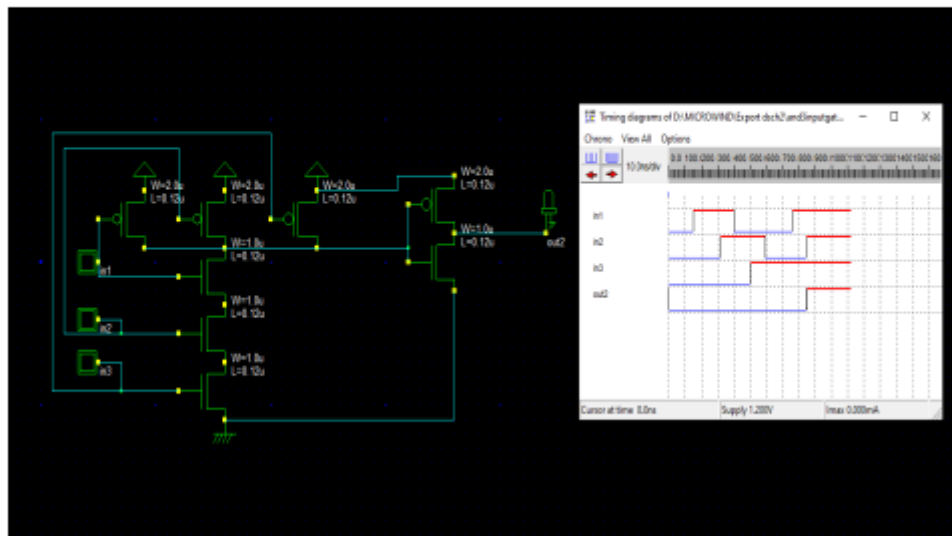
Learning Objectives:

1. To understand the behavior and demonstrate the operation of CMOS 3-Input AND Gate
2. To apply knowledge of the fundamental gates to create truth tables
3. To develop digital circuit building and troubleshooting skills.
4. To understand key elements of logic specification, schematic representations, layout designing and working of Microwind

Truth table:

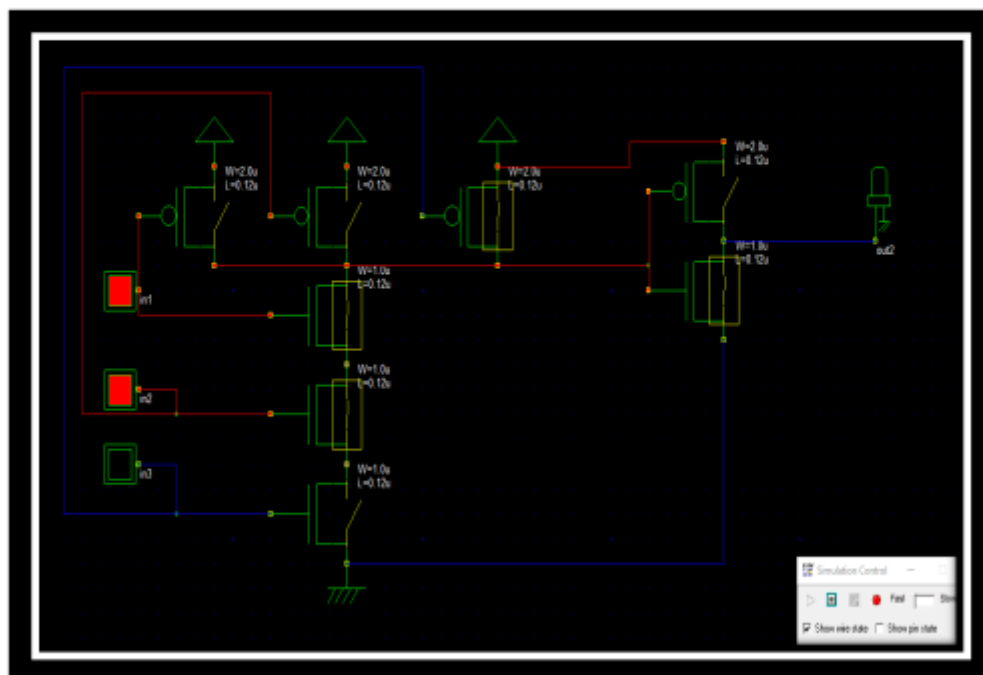
Input	Output
In1in2in3	Out2
000	OFF(0)
001	OFF(0)
010	OFF(0)
011	OFF(0)
100	OFF(0)
101	OFF(0)
110	OFF(0)
111	ON(1)

Schematic diagram:

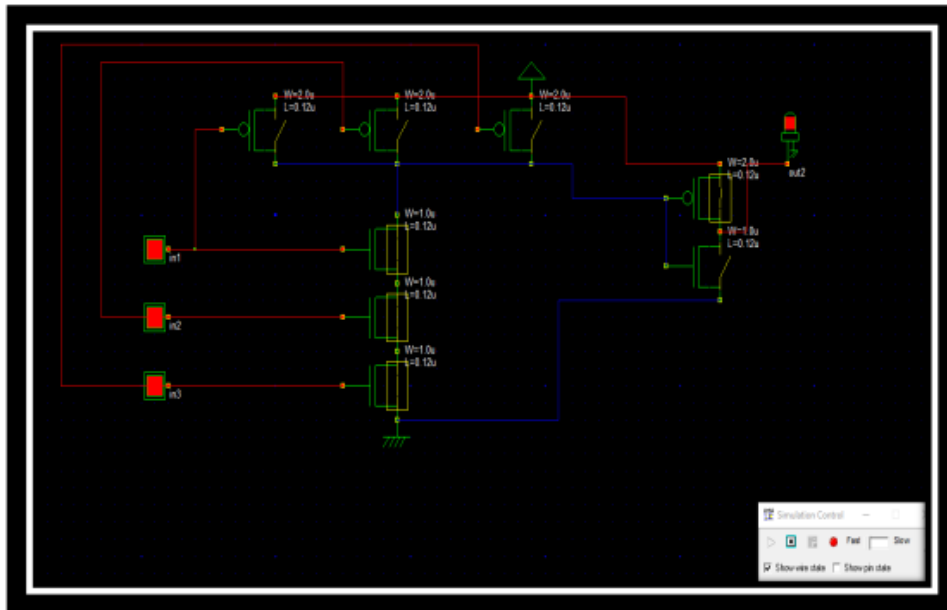


Output:

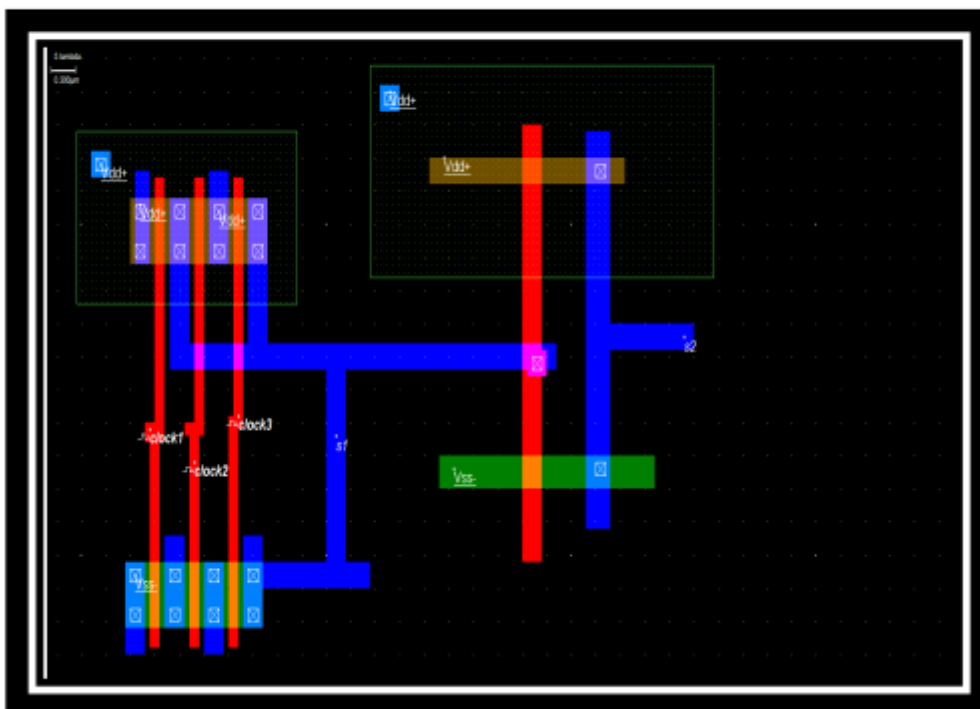
Ex 1) $in1=1$, $in2=1$, $in3=0$; $out2=OFF$



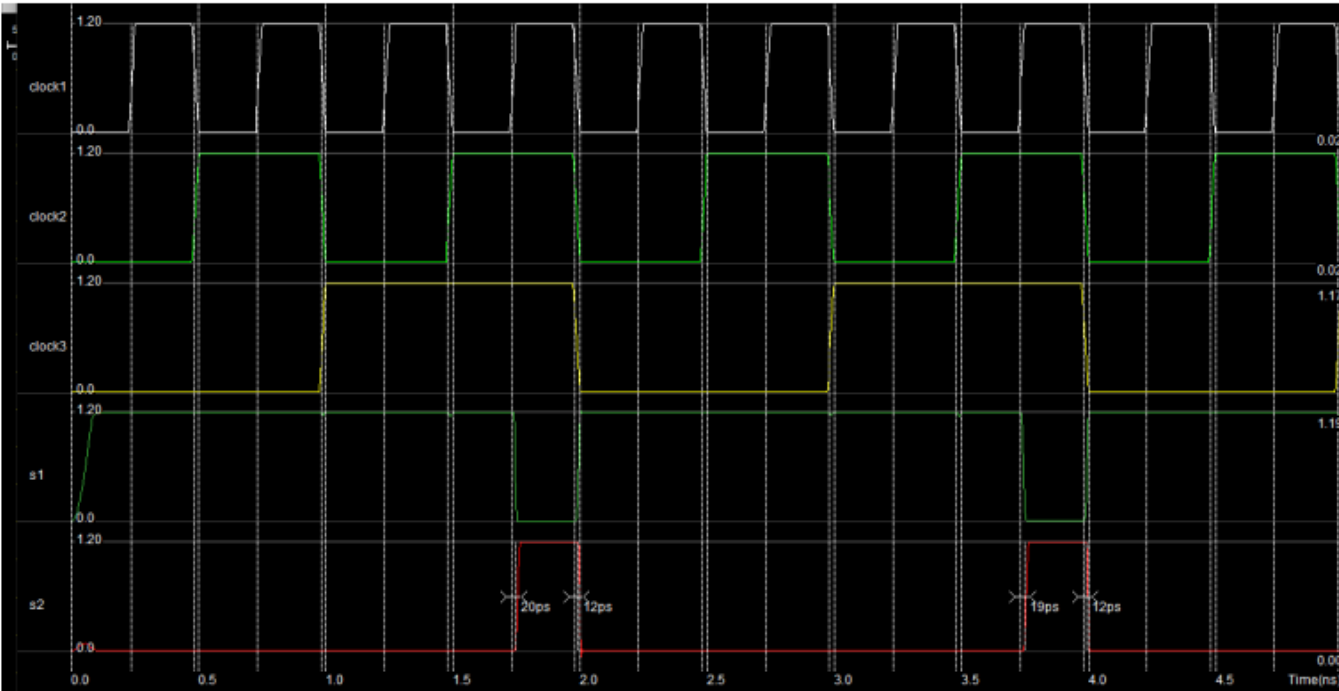
Ex 2) in1-1, in2-1, in3-1; out2-ON



Layout:



Layout output:



Sample Report2 for Activity Based Learning for VLSI subject

SDM COLLEGE OF ENGINEERING AND TECHNOLOGY, Dharwad-580002

(An autonomous Institution affiliated to
Visvesvaraya Technological University, Belagavi – 590018)



Department of Electronics and Communication Engineering

A report on the CMOS CTA Activity entitled

“Design of 1-bit Comparator using CMOS Technology”

Proposed by

Ms. Shreya Umarani – 2SD19EC094

Ms. Totashri Sajjanar – 2SD19EC111

Ms. Sugnyani Patil – 2SD19EC105

Students of 5th semester

Under the guidance of

Dr. Jayashree C. Nidagundi

Department of ECE, SDMCET, Dharwad-02

Academic Year 2021-2022

Problem Statement:

Design of 1-bit Comparator using CMOS technology.

Solution:

- A comparator used to compare two bits is called a single bit comparator.
- It consists of two inputs each for two single bit numbers and three outputs to generate less than, equal to and greater than between two binary numbers.

Logic Diagram and Truth Table:

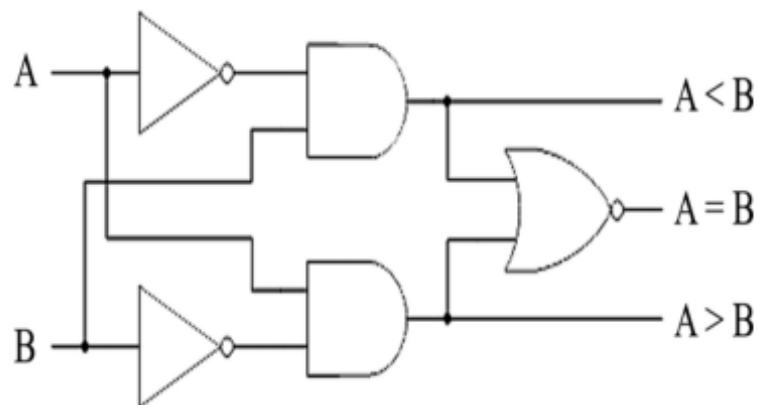


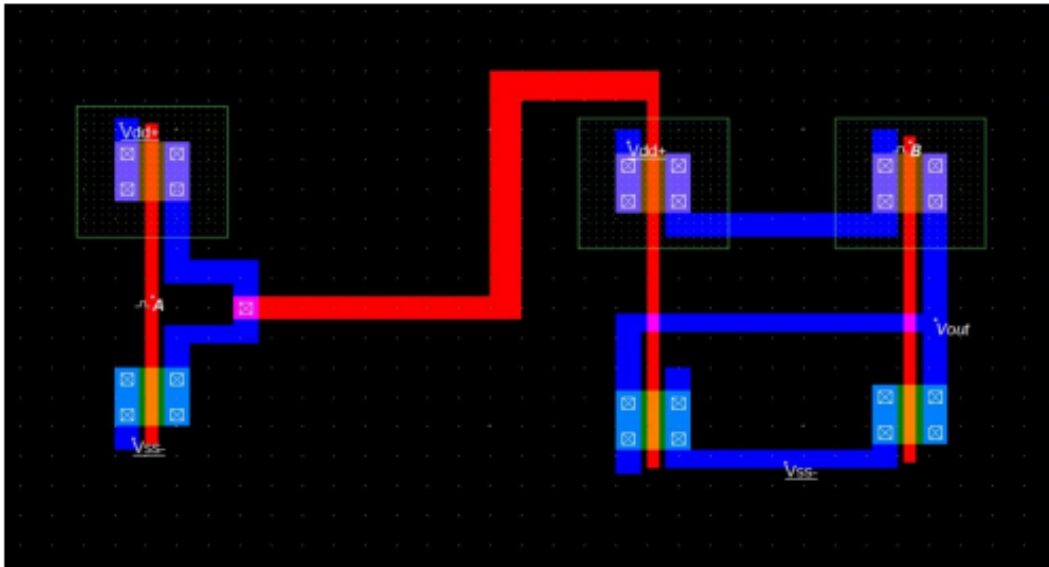
Fig.1 **Logic diagram**

A	B	A < B	A = B	A > B
0	0	0	1	0
0	1	1	0	0
1	0	0	0	1
1	1	0	1	0

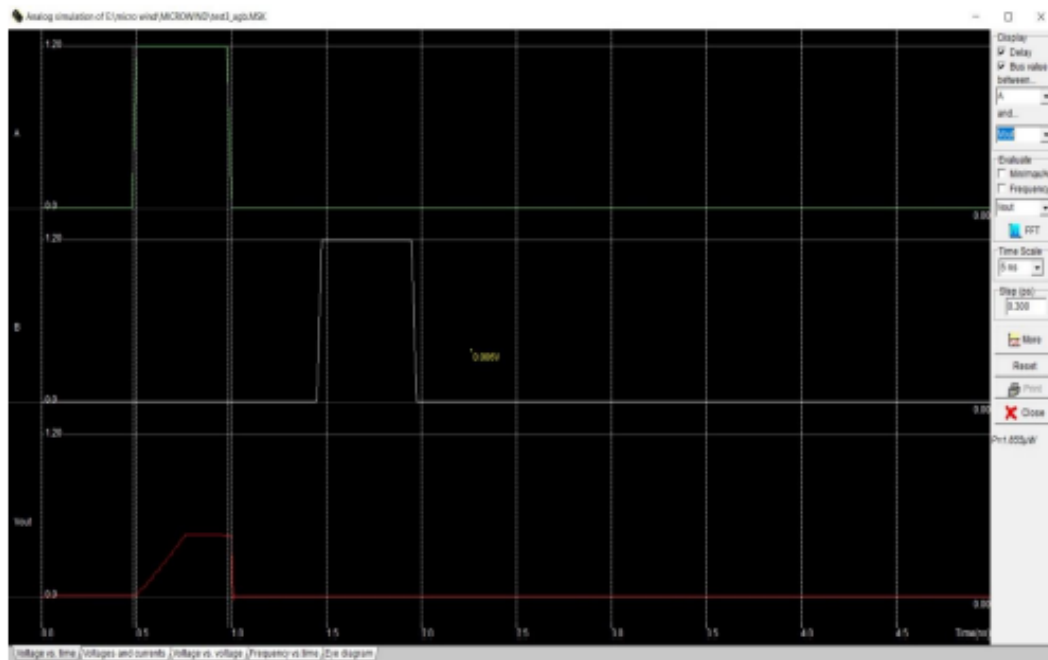
Fig.2 **Truth table**

Layout Design:

The layout is drawn as per the Lambda (λ) based design rules. In this case, the layout for one of the cases is drawn i.e., $X = (A > B) = AB'$ is implemented as follows.



Output waveform:



SDM College of Engineering and Technology, Dharwad
Department of Electronics and Communication Engineering


Sample Recorded Video Lecture Classes / Youtube Links / Blogs /

Google Classrooms

Sl. No.	Particular	Details
1	Faculty Name	Dr. Siddalingesh S. Navalgund
2	Subject	Data Structures using C++
3	Subject Code	18UECE622
4	Academic Year	2020-21
5	Online Links	Google Classroom Code: Zvjuafx Google meet Link: https://meet.google.com/xna-ptcp-ayx YouTube Links of sample Lectures conducted online Lecture 1: https://youtu.be/o1MjGz7EAD4 Lecture 2: https://youtu.be/lw9QUyGa9Ts Lecture 3: https://youtu.be/j2neaVEmC9Q Lecture 4: https://youtu.be/xCKLRbklb0Q Lecture 5: https://youtu.be/XLQEZbwLN-A

Sl. No.	Particular	Details
1	Faculty Name	Dr. Jayashree C Nidagundi
2	Subject	CMOS VLSI Design
3	Subject Code	18UECC500
4	Academic Year	2020-21
5	Online Links	<p>Google Classroom Code: 5lhysd5</p> <p>Google meet Link: https://meet.google.com/jst-uxzc-ngx</p> <p>YouTube Links of sample Lectures conducted online</p> <p>Lecture 1: https://www.youtube.com/watch?v=Sm8ZFXMSyk</p> <p>Lecture 2: https://www.youtube.com/watch?v=eCmx2QeHLN4</p> <p>Lecture 3: https://www.youtube.com/watch?v=rhMoT3WNm6s</p> <p>Lecture 27: https://www.youtube.com/watch?v=VleEtgiuNbU</p> <p>Lecture 50: https://www.youtube.com/watch?v=e4mq4echz3A</p>

Faculty name	Subject	Subject code	Academic year	Online links
Prof. Dr. Vijaya C.	Digital Signal Processing	18UECC502	2020-2021	https://youtu.be/Usf3NbQhM6Y
Prof. Dr. Vijaya C.	Communication Systems I	18UECC400	2020-2021 (even Semester)	https://youtu.be/sRcNv5vID_E


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