



Sri SAI RAM ENGINEERING COLLEGE

An Autonomous Institution | Affiliated to Anna University & Approved by AICTE, New Delhi
Accredited by NBA and NAAC "A+" | An ISO 9001:2015 Certified and MHRD NIRF ranked institution
Sai Leo Nagar, West Tambaram, Chennai - 600 044. www.sairam.edu.in



Innovation by the Faculty in Teaching & Learning

- Innovation occurs in a specific teaching and learning context, improving upon the implementation of the standard practice or introducing a new practice, thus achieving greater learning outcomes. It plays a wide role and necessity for all teachers in order to meet the educational needs of the new generations.
- Innovative teaching methodologies help faculty to deliver their lectures in a faster and efficient manner thereby allowing the students to keep abreast of technological advancements. In addition, innovative teaching aids also impart rational thinking and self sufficient thought process in the mindsets of students by making them more proactive.

Usage of ICT Enabled Tool

- ❖ Teachers use ICT enabled tools for effective teaching-learning processes.
- ❖ **Innovative teaching Methods used:** Google Classroom to assess students, SAIL APP for Live Assessment, Video Demo Classes for easy understanding, Mentimeter for Live poll quizzes, Skill rack helps to enhance students programming skills, Working model is to improve knowledge towards project, E-Learning methods helps to learn new technologies.
- ❖ ICT helps the faculty to represent their content in a more demonstrative manner.

The lists of innovative teaching techniques adopted in the department are tabulated below:

S.No	Innovation Method	Mode of Teaching/Learning Process	Objective
1.	Google Classroom	Online Tool/Blended learning	Simplify creating, distributing, and grading assignments and sharing files between faculty and students
2.	SAIL	Mobile App	Alternative method to assess the students through curriculum at anytime from anywhere
3.	Videoclass	Live Demonstration	Enhance the students knowledge and allow faculty to present their course in a dynamic way

4.	Mentimeter	Presentation	Engage with students using live polls, word clouds, quizzes, multiple-choice questions and more
5.	Skillrack	Online Tool	Enhance students problem solving and programming skills
6.	Quiz	Presentation	To test the student understanding level at the end of each course topic
7.	Working Model	Demonstration of working model of the project	Enhances the knowledge towards hardware aspect
8.	Virtual lab	Online learning platform	Learn concepts and methodologies of engineering practically through remote access to simulation based labs
9.	E-Learning	NPTEL/Coursera/Udemy /NITTT/NASSCOM Future skills/IIT Spoken Tutorial	Upgrade the quality of Engineering education and using resources beyond the curriculum.

1. Google Classroom

Google Classroom is a free blended learning platform for educational institutions and it is an essential technique that aims to simplify creating, distributing and grading assignments. The primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students. Google Classroom is a suite of online tools that allows teachers to set assignments, have work submitted by students, to mark and to return graded papers. Administrator invites the teachers and students using their individual mail id as a user name to be a member of the classroom.

Utilization of Google Classroom for Students

1. Based on Anna University curriculum and autonomous syllabus the course wise materials are uploaded which is in the form of pdf, doc & ppts for all second, third and final year students.
2. Similarly, Question banks for individual courses including Part A ,Part B and Part C questions with solutions for students are also uploaded . This provides guidelines for their last minute University exam preparation.
3. Previous year Anna university question papers are uploaded with solutions and Lecture videos are uploaded to visualize the concepts.
4. Assignments can be assigned by the faculty to the students and later it can be evaluated and graded accordingly.
5. Provides a platform to communicate test circular, college and department event details, placement details. The official information would reach the concerned and the same would be notified to the sender.

- All the faculty members of the Department of Electronics & Communication Engineering use Google Classroom extensively and a sample page is shown below in Figure 5.5.1

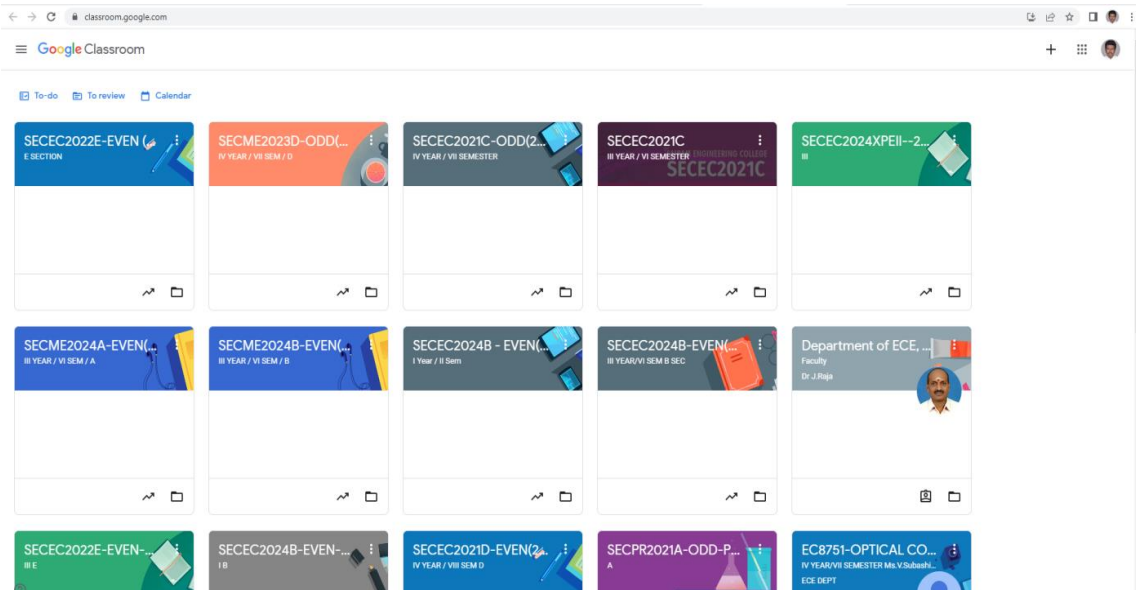


Figure:5.5.1

Task managed through the use of Google classroom

- Posting the Course materials to facilitate flipped classroom mode(Figure 5.5.2)**

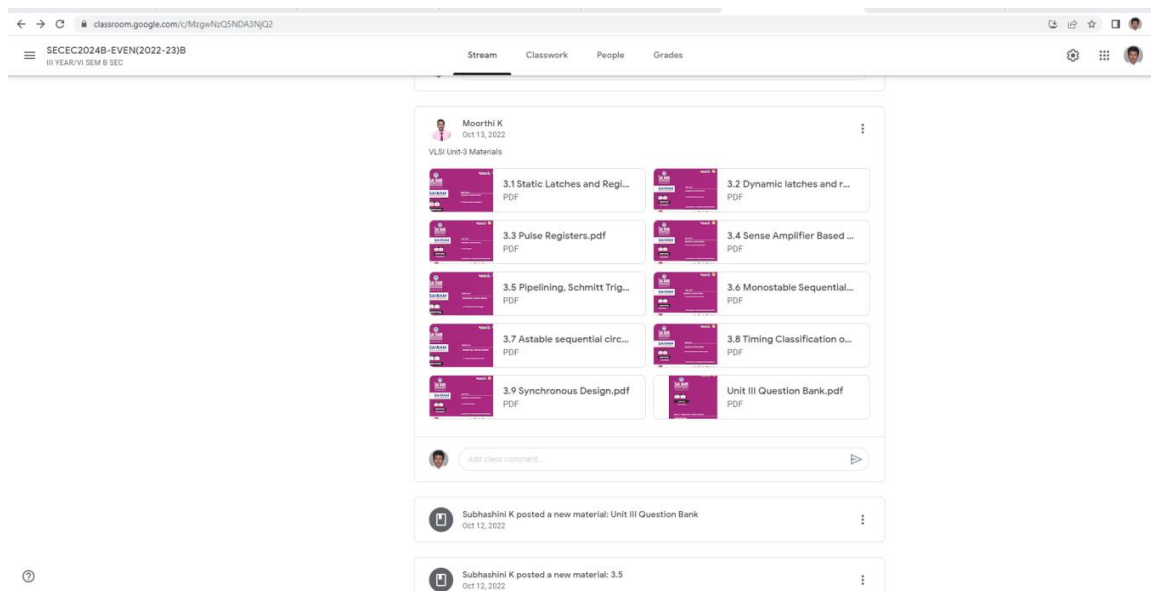


Figure:5.5.2

b) Posting the assignments and grading the submissions digitally(Figure 5.5.3)

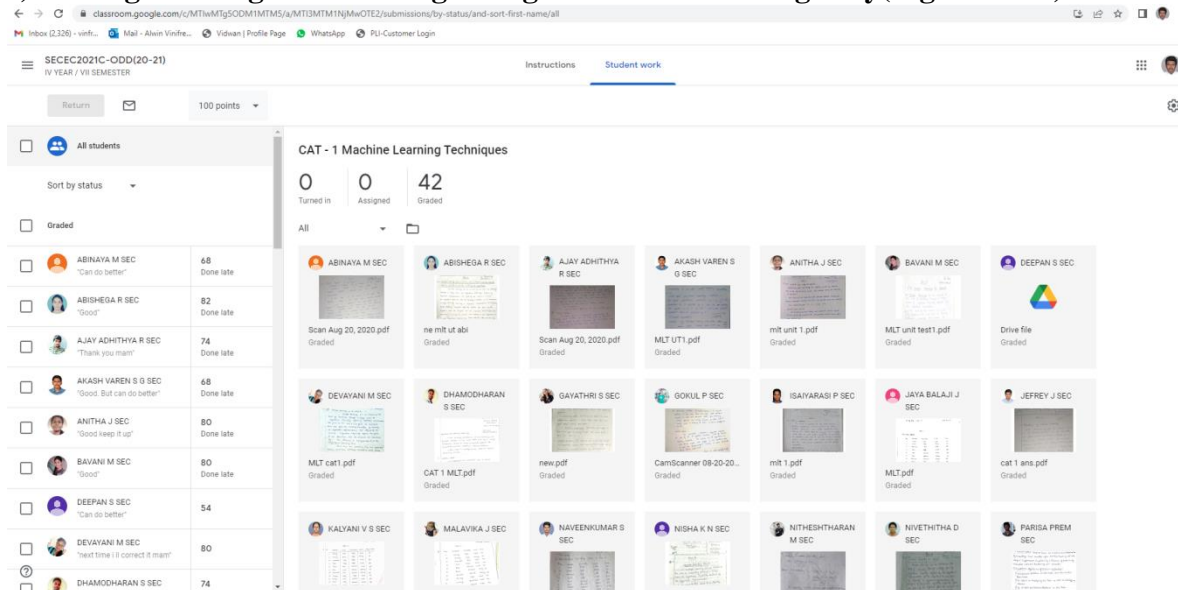


Figure 5.5.3

2. SAIL

- The SAIL (Sairam Artificial Intelligence Learning) Program is designed to provide special education services to students who have been identified as being in need of an alternative, adapted, and functional curriculum.
 - The syllabus materials are available on SAIL. Student profiles and their quizz grades are also visualized. These students have documented significant cognitive delays. Sail provides daily quizzes on logical and reasoning aptitude. Some screenshots are also attached for reference.
- ❖ Topic wise learning content can be accessed in the mobile Figure 5.5.4

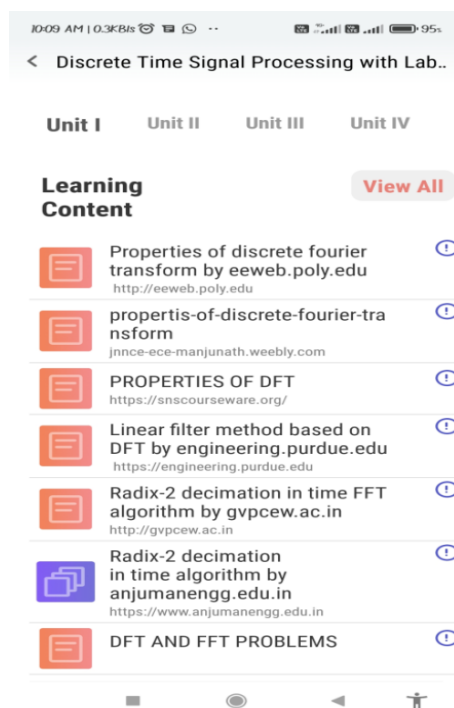


Figure 5.5.4

Test creation and result analysis report Figure 5.5.5



Figure 5.5.5

- ❖ Student Test submit status updated periodically until the expiry of test schedule Figure 5.5.6



Figure 5.5.6

- ❖ Overall performance report in the dashboard for an analytical Test Figure 5.5.7(a),(b),(c),(d)

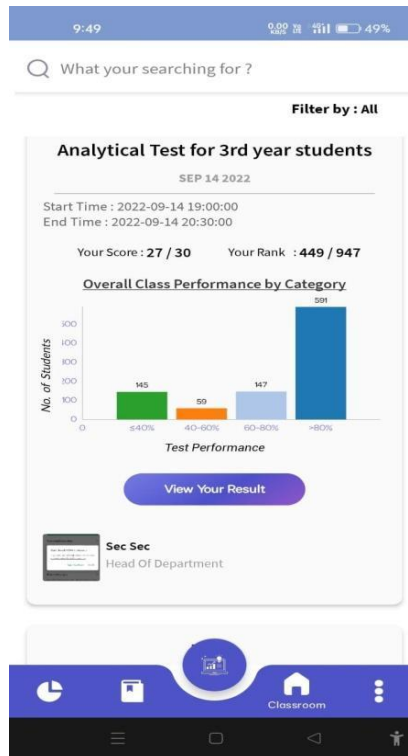


Figure 5.5.7(a)

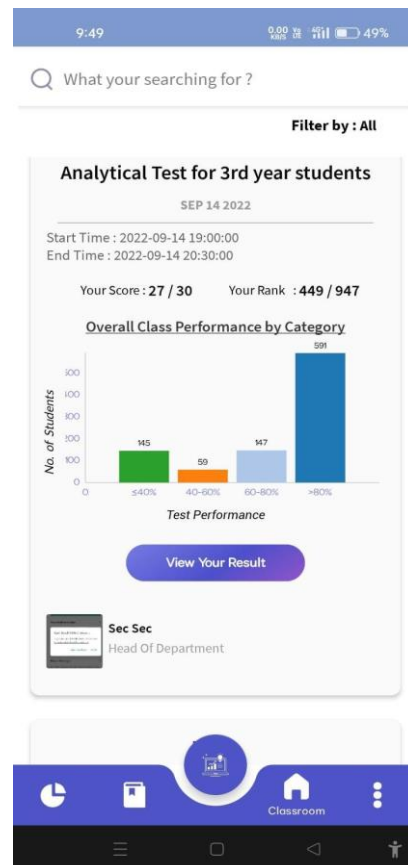


Figure 5.5.7(b)

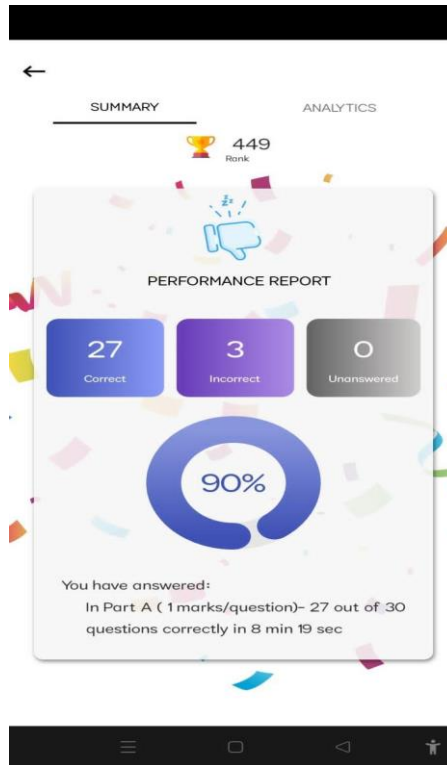


Figure 5.5.7(c)

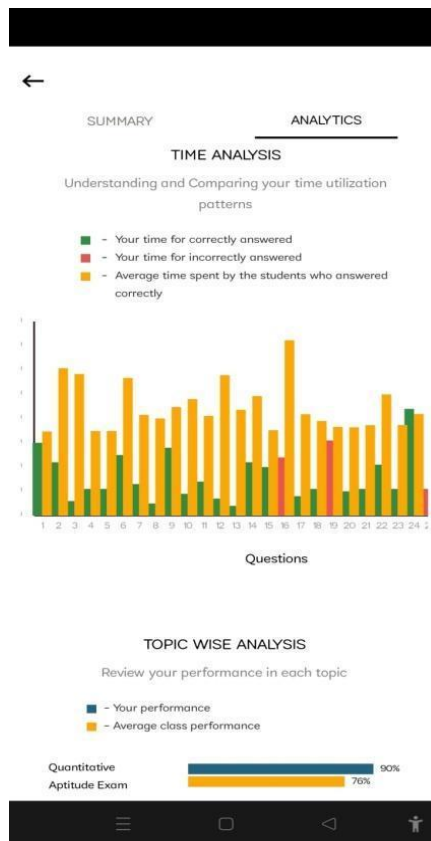


Figure 5.5.7.(d)

3. Video classes

- Video Classes are classrooms on an online platform that takes place via the internet. These classes are very informative and give other ideas apart from the curriculum.
- Separate classes are assigned for the students to refresh and enhance their knowledge. In every video class different kinds of topics were focused and the overall topic was covered with appropriate video clips.

Figure 5.5.8.a&b visualize the students active participation and interaction with faculty



Figure 5.5.8(a)



Figure 5.5.8(b)

Video class schedule and Videos played are listed below:

ACADEMIC YEAR (2022-2023-ODD & EVEN)

S. No	Date / Session	Year	Title of the Video	PANEL MEMBERS	Play Status/ Location
1.	18/08/2022 AN	III ECE - A,B,C& D	1. Silicon Run II https://youtu.be/hbxVzq2Nxp8	Dr .S Sumathi, Mr K.Srinivasan, Dr N Anitha	Played in VRR Hall
			2. New Nano Satellite Companies Looking At Everything https://youtu.be/xfd5cvwOdO4		
2.	25/08/2022 AN	III ECE - A,B,C& D	1. Inside an iPhone Battery Factory https://youtu.be/PZBQzLfCKpw	Ms K.Subhashini, Dr.P.Banupriya, Mr.G.Tony Santhosh	Played in VRR Hall
			2. Future Earth 2050 New Technology https://youtu.be/hkW5GAIQI7g		

3.	26/09/2022 AN	II ECE - A,B,C& D	1.The latest robots and technologies of the future https://youtu.be/n7ctpIi8no 2. 5G Explained What Is 5G How 5G Works https://youtu.be/LhECDSuXRDs	Mr K.Srinivasan, Dr.M.Jenath Mr.G.Tony Santhosh, Dr.K.Moorthi	Played in SSR Hall
4	06/10/2022 AN	III ECE - A,B,C& D	1.IoT: Powering the Digital Economy https://youtu.be/HFvgVZ68md0 2.Hyper Evolution : Rise Of The Robots https://youtu.be/hRuBZLe8vfs	Dr E.Priya, Ms.A.R.Rajini, Dr.N.Anitha	Played in VRR Hall
5	13/10/2022 AN	II ECE - A,B,C& D	1.IoT: Powering the Digital Economy https://youtu.be/HFvgVZ68md0 2.Hyper Evolution : Rise Of The Robots https://youtu.be/hRuBZLe8vfs	C.N. Savithri, Ms R.Chitra, Mr.K.Gopi	Played in SSR Hall
6.	15/12/2022 AN	II ECE A,B,C &D	1.SILICON RUN I https://youtu.be/3XTWXRj24GM 2.Electromagnetism https://youtu.be/bht9AJ1eNYc	Dr K Lakshmi Joshitha Ms G Lakshmi, Ms R.Gayathri	Played in VRR Hall
7.	22/12/2022 (2:15pm to 4:10pm)	II ECE A,B,C & D	1.Microchips and Highly Sensitive Sensors https://youtu.be/nXuy1iSxOzA 2.How does Starlink Satellite Internet Work? https://youtu.be/qs2QcycggWU	Ms A.Rashmi Mr.K.Gopi Mr G.Tony Santhosh,	Played in VRR Hall
8	19/04/2023 (2:15pm to 4:10pm)	II ECE A,B,C & D	1.Silicon Run II https://youtu.be/hbxVzq2Nxp8 2.Future Earth 2050 New Technology https://youtu.be/hkW5GAIQI7g	Dr P Prakash Ms N. Logeswari Dr.K.Moorthi	Played in VRR Hall

ACADEMIC YEAR (2021-2022) ODD & EVEN

S. No	Date / Session	Year	Title of the Video	PANEL MEMBERS	Play Status/ Location
1.	09/09/2021 FN	II A& B	RISE OF THE DRONES https://youtu.be/ikuu2VU2Wck	Dr. K. Lakshmi Joshitha Mr. C. Alwin Vinifred	Played in SSR Hall
2.	09/09/2021 AN	II C& D	SILICON RUN I https://youtu.be/3XTWXRj24GM	Mr. K. Srinivasan Ms. V. Sasikala	Played in SSR Hall
3.	13.09.2021 FN	III A,B & C	FUTURE EARTH 2050 NEW TECHNOLOGY https://youtu.be/hkW5GAIQI7g	Ms M Shabhana Parveen, Ms.B.Rajalakshmi	Played in SSR Hall
4	13.09.2021 AN	III D&E	THE RISE OF AI https://youtu.be/Dk7h22mRYHQ	Ms G Shanthakumari Ms.Gayathri R	Played in SSR Hall
5	14.09.2021 FN	II C&D	NEWEST ROBOTS AND TECHNOLOGIES https://youtu.be/S1mtC5LcM6g	Dr.P.Prakesh Ms.G.Sudha	Played in SSR Hall
6.	14.09.2021 AN	II A&B	THE HISTORY OF ELECTROMAGNETISM https://youtu.be/hRgXEf-khpA	Ms.N.Logeshwari Ms M Shabhana Parveen	Played in SSR Hall
7.	15.09.2021 FN	III D&E	INTERNET FROM SPACE https://youtu.be/IsqSwMsI_mc	S.Vinoth Kumar, Ms.N.Logeshwari	Played in SSR Hall
8	15.09.2021 AN	III A,B & C	THE REAL PRICE OF YOUR CELLPHONE https://youtu.be/JxLHXHjpa8	Ms.N.Logeshwari, Dr.P.Prakesh, Mr K Srinivasan	Played in SSR Hall
9	23/09/2021 (2:15pm to 4:10pm)	III ECE A,B,C ,D & E	RISE OF THE DRONES https://youtu.be/ikuu2VU2Wck	1.Mr.K.DEVIBALAN, 2.Ms.Velvizhi, 3.Ms.T.A.Anusudha	Played in VRR HALL
10	30/09/2021 (2:15pm to	II ECE A,B,C	Electric Cars https://youtu.be/dcvO3Ylezx0	1.Ms Nazeeya Anjum 2.Ms.S.Sararanya	Played in VRR HALL

	4:10pm)	&D	The Electric Vehicle https://youtu.be/TOdMczkkjTU		
11	7/10/2021 (2:15pm to 4:10pm)	III ECE A,B,C ,D & E	The IoT_ Connecting it All https://youtu.be/jJaWMWz6RpE IoT: Powering the Digital Economy https://youtu.be/HFvgVZ68md0	1.Ms.C.N Savithiri, 2.Ms.N.Shivani Varsha	Played in VRR HALL
12	28/10/2021 (2:15pm to 4:10pm)	III ECE A,B,C ,D & E	New Nano Satellite Companies Looking At Everything https://youtu.be/xfD5cvwOdO4 The Future of Green Technology: Hyperloop and Solar-Powered https://youtu.be/YxsE0TWd3lc	Ms.Gayathri R, Ms.B.Rajalakshmi	Played in VRR HALL
13	25/11/2021 (2:15pm to 4:10pm)	II ECE A,B,C &D	ELECTROMAGNETISM https://youtu.be/bht9AJ1eNYc	Dr.E.Priya, Ms.V.Remya	Played in VRR HALL
14	02/12/2021 (2:15pm to 4:10pm)	III ECE A,B,C ,D & E	Silicon Run II https://youtu.be/hbxVzq2Nxp8 Robo Dogs, Robo Spiders https://youtu.be/VCK6ABrMqG8	Dr.J.Manikandan, Dr.M.Baskaran	Played in VRR HALL
15	09/12/2021 (2:15pm to 4:10pm)	II ECE A,B,C & D	How artificial intelligence is changing our society https://youtu.be/-ePZ7OdY-Dw The 3D printing revolution https://youtu.be/k0poVtBhIsQ	Ms S Josephin Ida Litrizia, Mr.S.VinothKumar	Played in VRR HALL

ACADEMIC YEAR (2019-2020)-ODD

S. No	Date / Session	Year	Title of the Video	PANEL MEMBERS	Play Status/ Location
1.	15.07.19 AN	III	Autonomous Driving the Revolution https://youtu.be/4rHvm2iPNwI	Dr. S Sumathi Ms. B Panjavarnam Ms. K Subhashini Ms. N Nazeeya Anjum	Yes/ SSR Hall
			Tesla Motors - Documentary - Nat Geo https://youtu.be/Rt0GkhVPjac		
			Silicon Run I (1996) https://youtu.be/3XTWXRj24GM		
2	07.08.19 AN	IV	Mega Structures International Space Station (ISS) https://youtu.be/R_xmf-v6VZc	Prof. A R Rajini Dr. J Raja Prof. V S Sundaramoorthy Ms V Remya	YES/ SSR HALL
			Tesla Motors - Documentary - Nat Geo https://youtu.be/Rt0GkhVPjac		
3	03.09.19 AN	III	The most Awesome Robots https://youtu.be/S5AnWzjHfWA	Ms. J Thamilselvi Ms. K Jayapiriya Ms. S Gayathri	YES/ SSR HALL
			BIG BIGGER BIGGEST aircraft https://youtu.be/fHhSRybtGU		
4	25.09.19 AN	II	Tesla Motors - Documentary - Nat Geo https://youtu.be/Rt0GkhVPjac	Dr. S Sumathi Ms. V Sasikala Mr. K Srinivasan	Yes/SSR Hall

ACADEMIC YEAR (2019-2020)-EVEN

S. No	Date / Session	Year	Title of the Video	PANEL MEMBERS	Play Status/ Location
1.	20.12.19 AN	II	Silicon Run I https://youtu.be/3XTWXRj24GM	Ms. R Chitra Ms. C N Savithri	Yes/ SSR Hall
			Silicon Run II https://youtu.be/hbxVzq2Nxp8	Ms. B Panjavarnam Ms. N Nazeeya Anjum	
2.	10.01.20 AN	III	Megastructures - INTERNATIONAL SPACE STATION https://youtu.be/R_xmf-v6VZc	Mr. V S Sundaramurthy Prof. A R Rajini Mr K Srinivasan	Yes/ SSR Hall
			Life on a Space Station (The Mir Chronicles) https://youtu.be/UDtO1MYLbK4	Dr. J Manikandan	
3.	11.02.20 AN	III	MRI: Basic Physics & a Brief History https://youtu.be/djAxjtN_7VE	Dr. S Sumathi Ms. B Panjavarnam Ms. K Subhashini Ms. N Nazeeya Anjum	Yes/ SSR Hall
			How MRI Works - Part 1 - NMR Basics https://youtu.be/TQegSF4ZiIQ		
			History of Computerized Tomography (CT Scanner) https://youtu.be/9SUHgtREWQc		
4	25.02.20 AN	II	Autonomous Driving https://youtu.be/4rHvm2iPNwI	Dr. K Swaminathan Dr. E Priya Dr. K Sumathi	Yes/ VRR Hall
			Big Earth Data: Best Documentary https://youtu.be/NzDHQ-0TcX0	Mr. U Jayachandiran	

- Video class-Students feedback Analysis
Feedback from the students would be collected at the end of the class the using google forms and the sample analysis shown in figure 5.5.9.(a)-(d)
- From the analysis report it clearly shows more than 90% of students satisfied with audio and visual quality, agreeing video content was useful for subject understanding and its sparks new ideas and also through the video class they gained high level of knowledge.

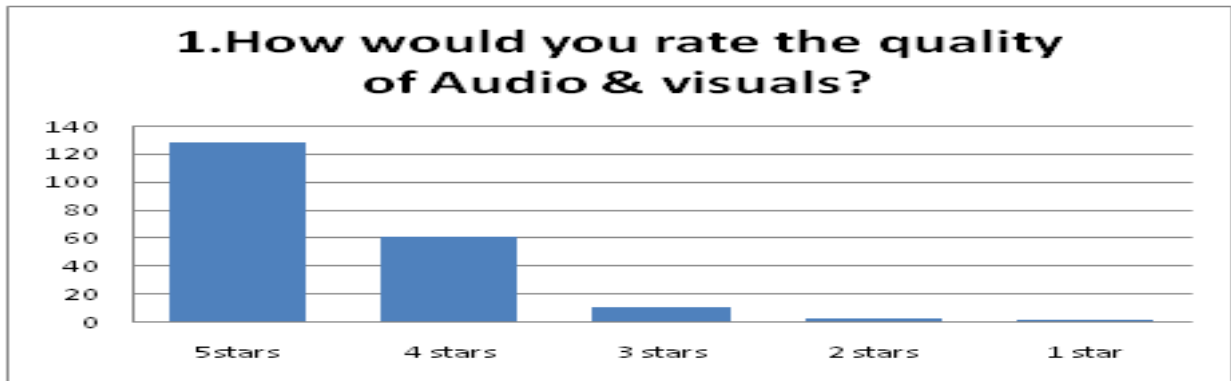


Figure 5.5.9.(a)

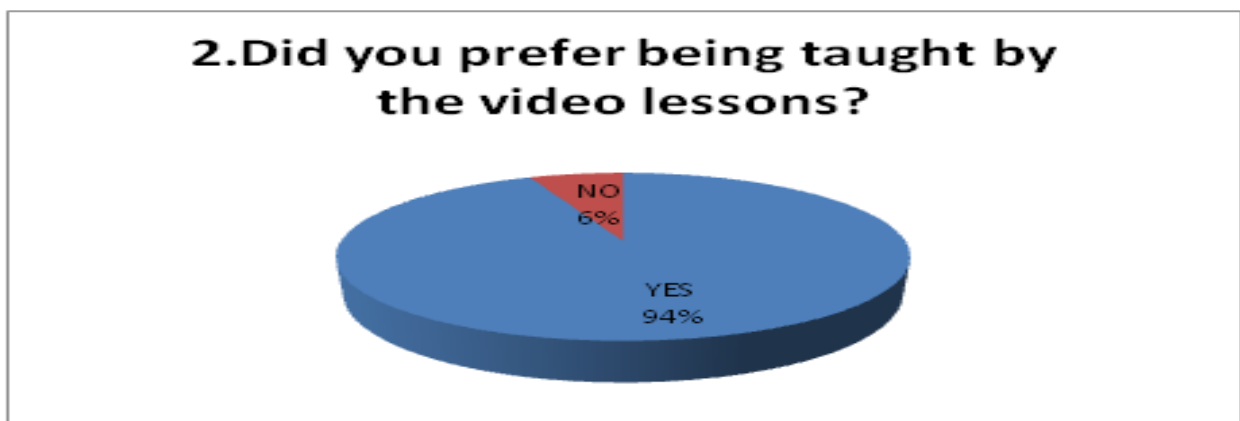


Figure 5.5.9.(b)

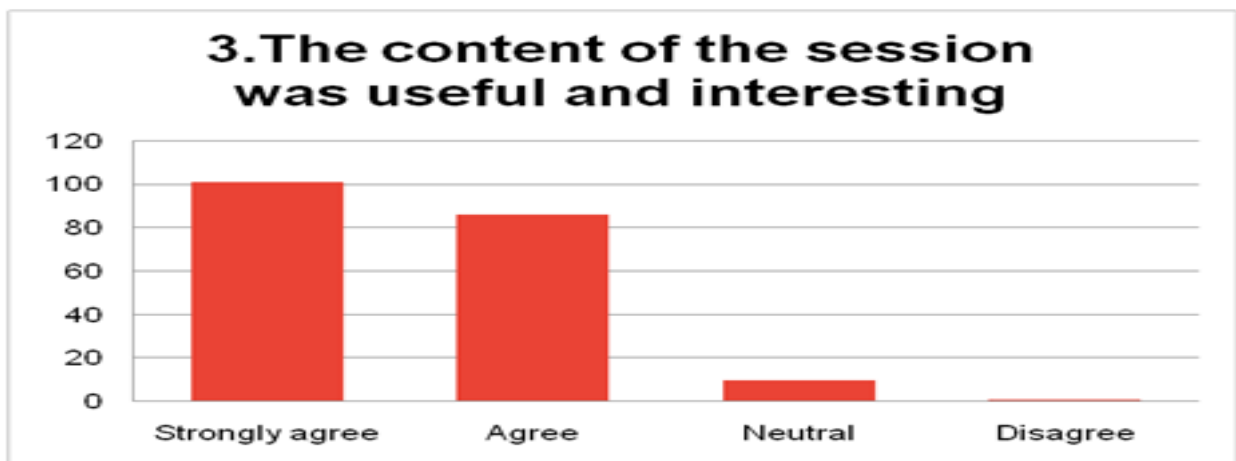


Figure 5.5.9.(c)

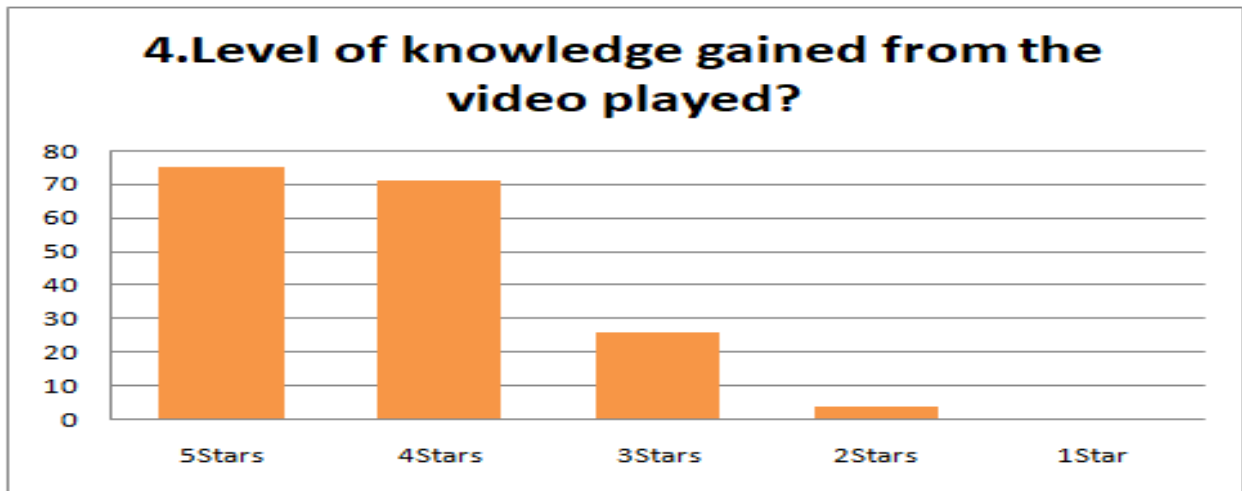


figure 5.5.9.(d)

4. Mentimeter

- Mentimeter is an interactive presentation tool that helps to engage students and enables every voice in a classroom or lecture hall to be heard. You can use it to gauge student comprehension, test knowledge retention or as a fun way to break up learning.
- Utilization of mentimeter:
 1. Engage with students using live polls, word clouds, quizzes, multiple-choice questions and more
 2. Track learning and understanding by asking questions and downloading results.
 3. Communicate and interact with your students
 4. Stay up-to-date with the teaching syllabus so that no one misses a thing
 5. Enable Q&A so that queries and questions can be discussed, explained and clarified.

Leader board in Mentimeter displays the top performer scored in the Q&A session. which is presented after the video played .

The Figure 5.5.10 and 5.5.11 shows mentimeter presentation screens.

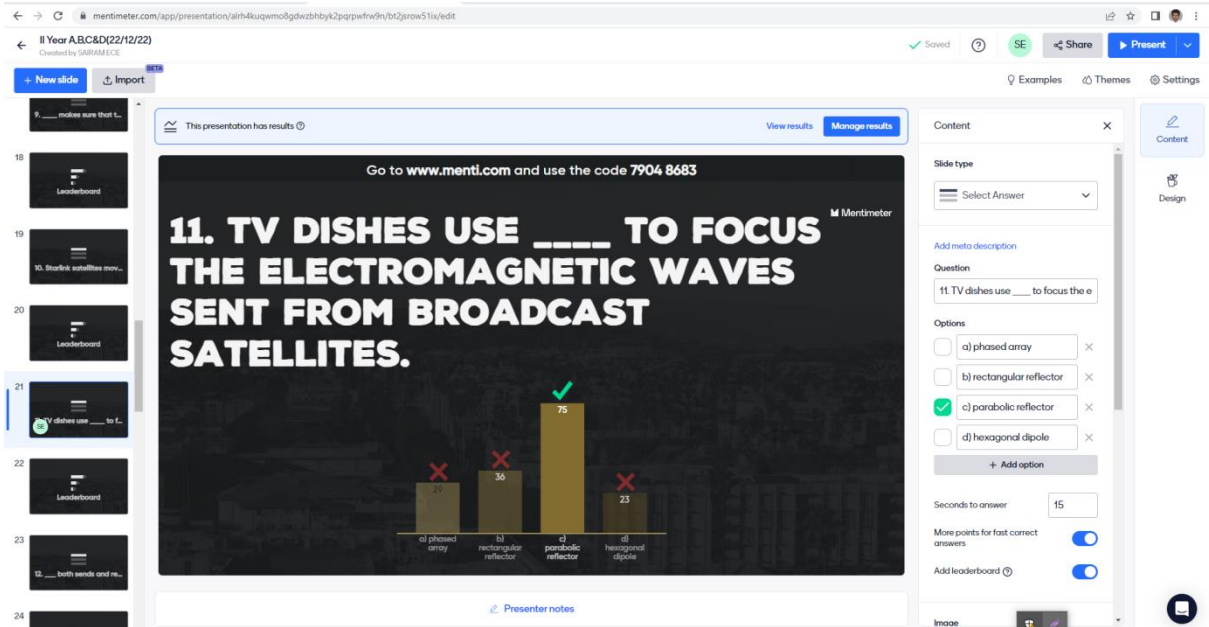


Figure 5.5.10



Figure 5.5.11

5. Skillrack

- ❖ SkillRack provides services to candidates which enhances their problem solving, programming skills. It helps the students to learn programming languages from the basics.
- ❖ Daily tests and daily challenges were assigned for the students which helps to improve their skills on problem solving and reasoning skills.
- ❖ Top rankers in skillrack are offered with abroad collaboration and other opportunities.
- ❖ Student's participation is encouraged by giving appreciation certificates.

The screenshots are attached for reference.(Figure 5.5.11.(a),(b),(c))



Figure 5.5.11.(a)

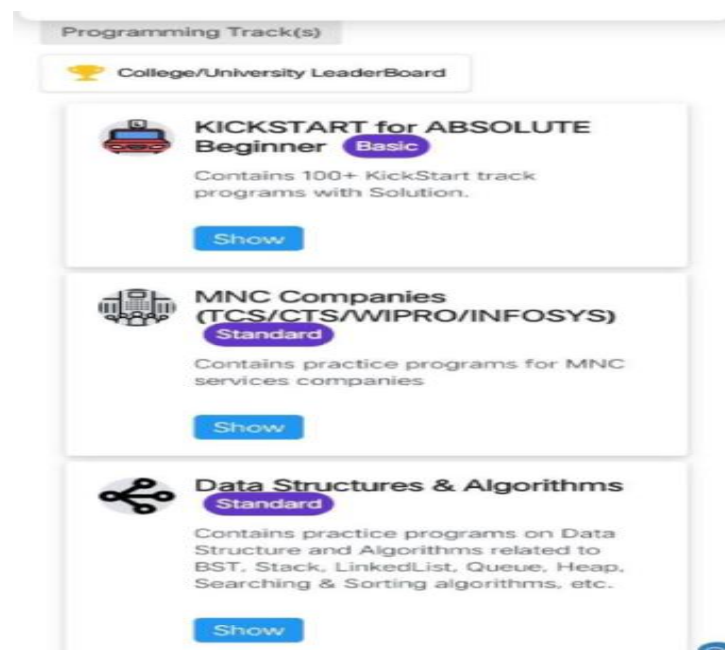


Figure 5.5.11.(b)

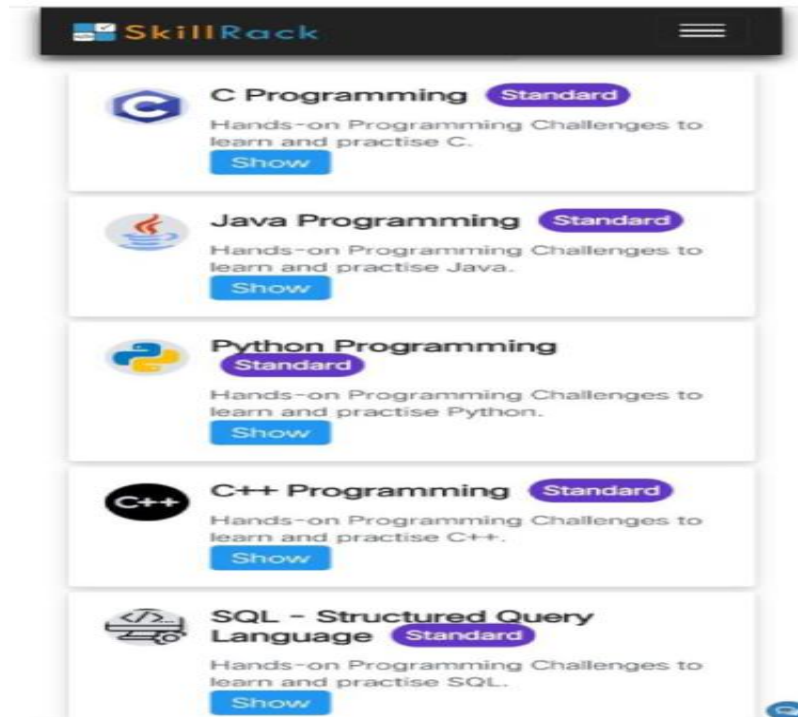


Figure 5.5.11.(c)

6. Quiz

- ❖ At the end of lesson topic quiz questions shared to all the students and answers were verified with student's response
- ❖ The screenshots are attached for reference. Figure 5.5.12

The image shows a Google Forms quiz interface. It contains two multiple-choice questions. The first question is: "10. The technique whereby the DMA controller steals the access cycles of the processor to operate is called" (1 point). The options are: a) Fast conning, b) Memory Con, c) Cycle stealing, and d) Memory stealing. The second question is: "11. The technique where the controller is given complete access to main memory is" (1 point). The options are: a) Cycle stealing, b) Memory stealing, c) Memory Con, and d) Burst mode. At the bottom, there are 'Submit' and 'Clear form' buttons. A footer note says: "This form was created inside of Sri Sai Ram Engineering College. [Report Abuse](#)". The Google Forms logo is at the very bottom.

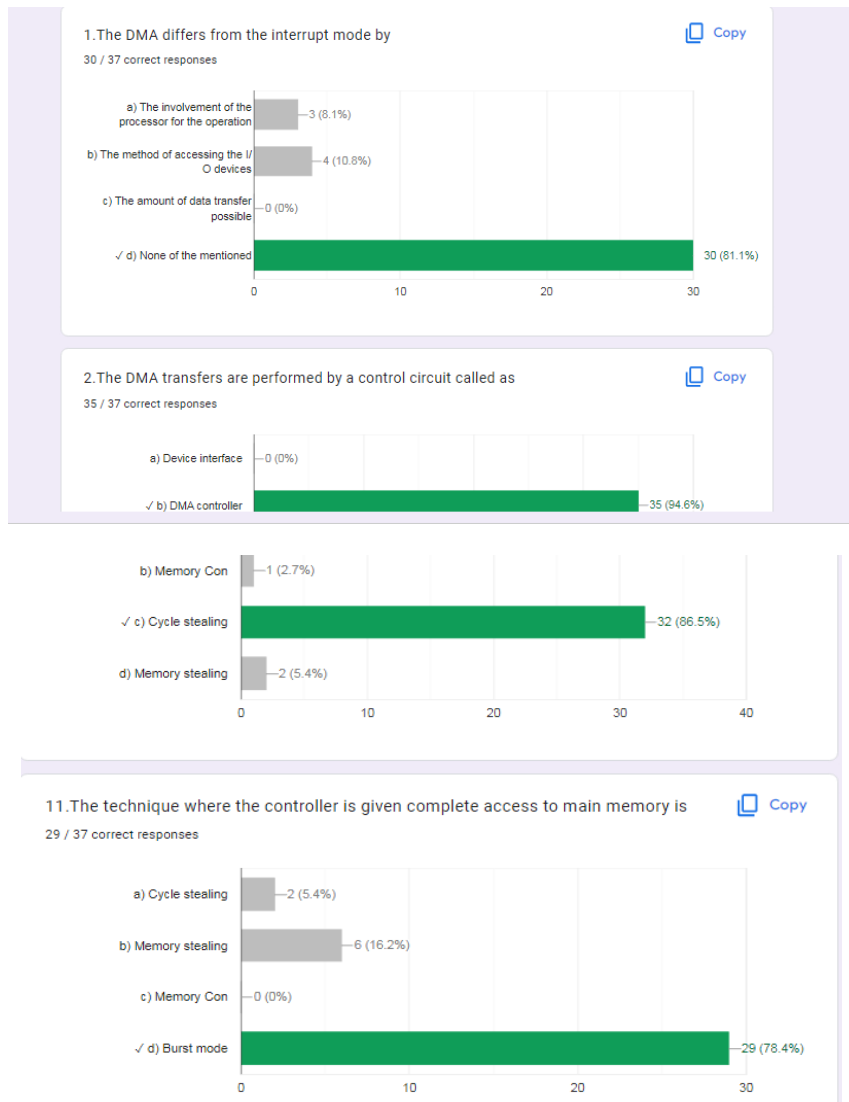


Figure 5.5.12

7. Working Model

- Sessions would be arranged for demonstration of the working model of the project, which is of utmost necessity for the students to have knowledge in hardware aspects. Figure 5.5.13



Figure 5.5.13

8. Virtual lab(VLab)

- Introduced for creating a diversified online learning platform to learn concepts and methodologies of engineering practically through various laboratories.
- Virtual lab stimulates students to conduct experiments by their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.

Critiques

1. Virtual Learning of practical Experiments
2. Diversified learning
3. Application oriented real time learning

Screenshots visualize the experimentation steps Figure 5.5.14.(a),(b),(c),(d)

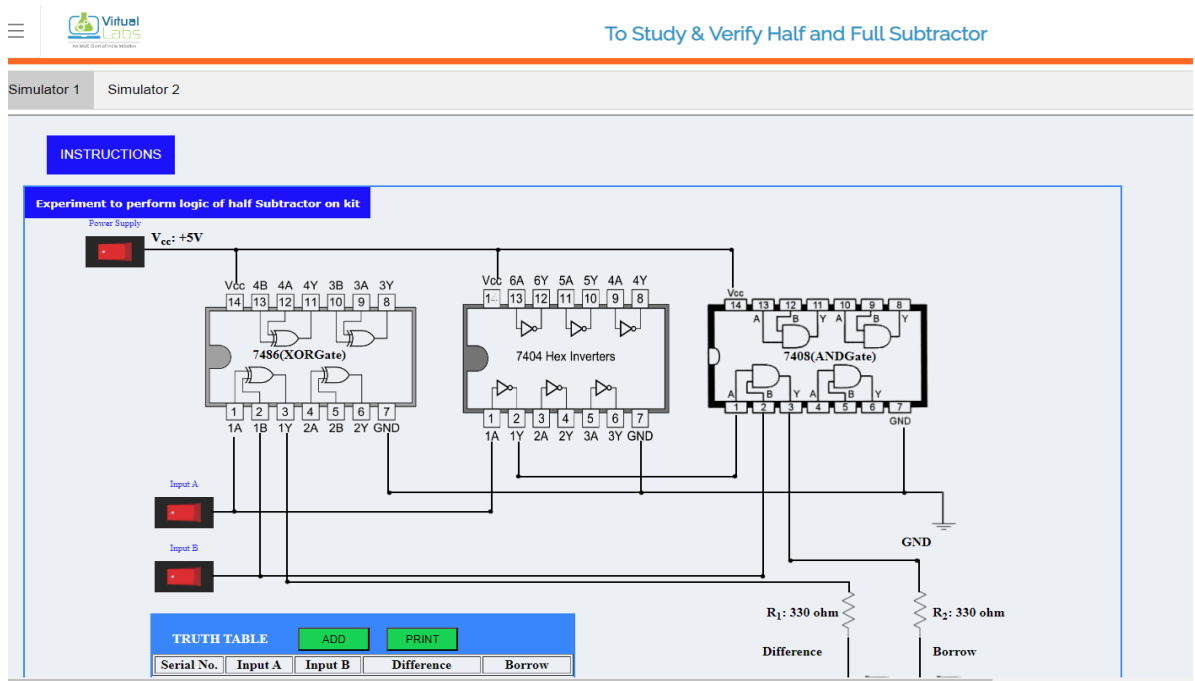
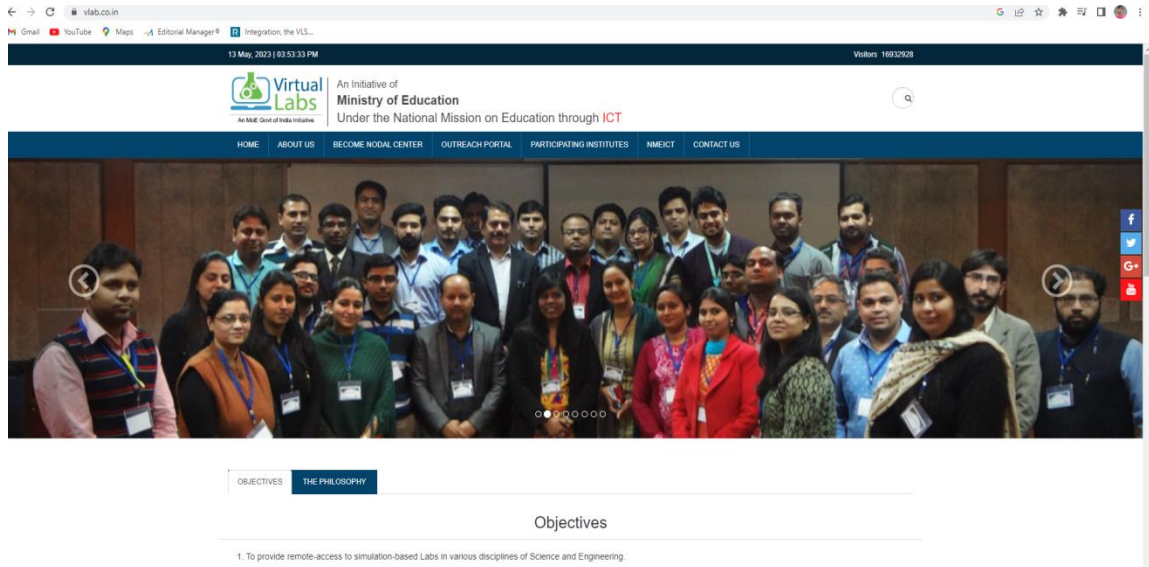


Figure 5.5.14.(a)

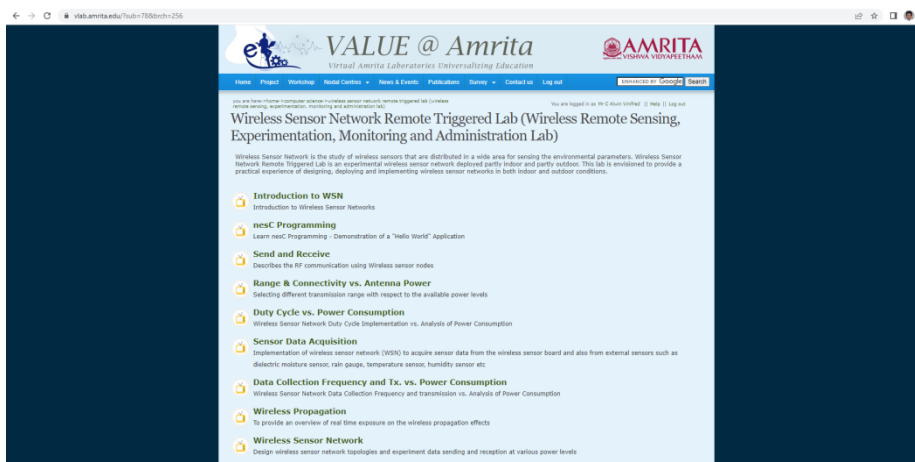


Figure 5.5.14.(b)

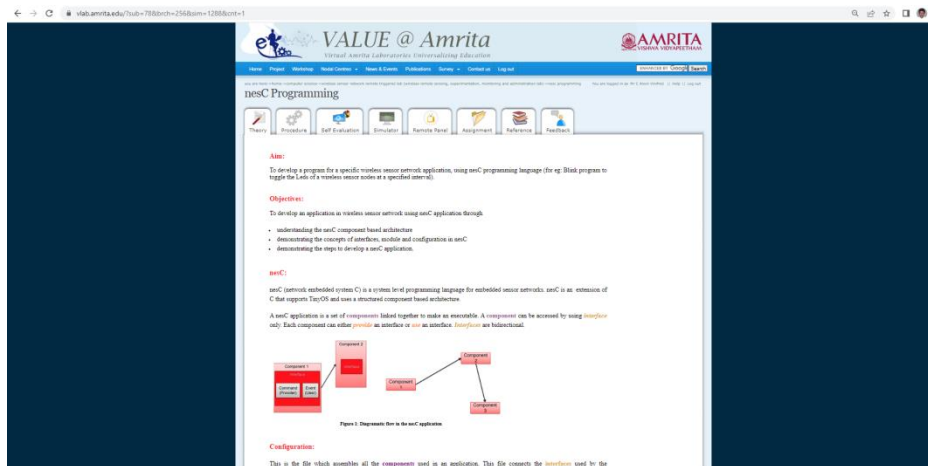


Figure 5.5.14.(c)

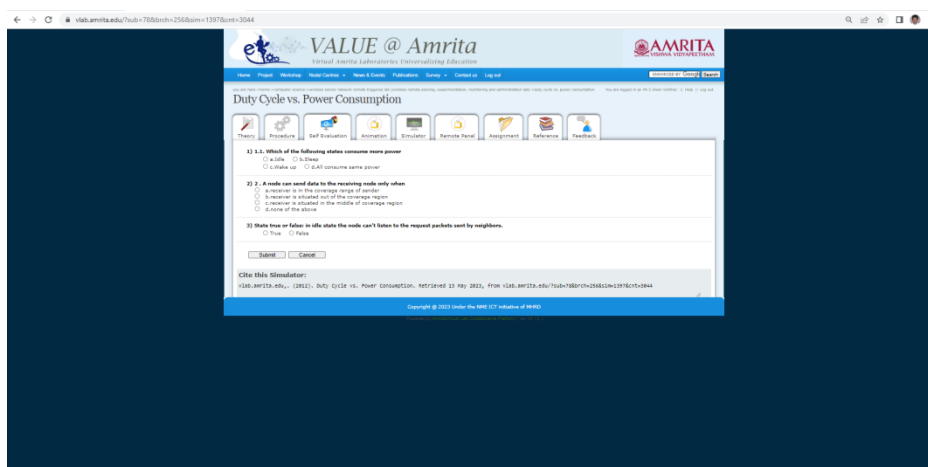


Figure 5.5.14.(d)



Figure 5.5.14.(e)

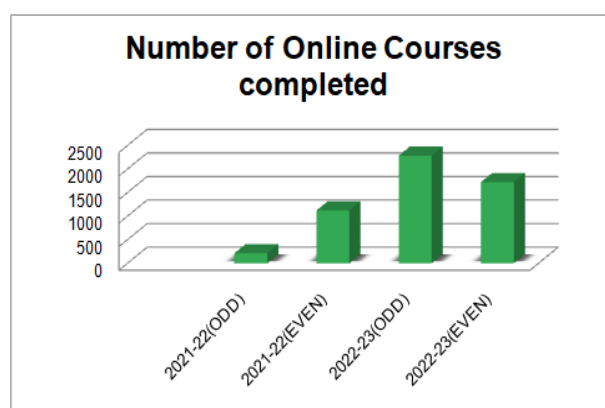
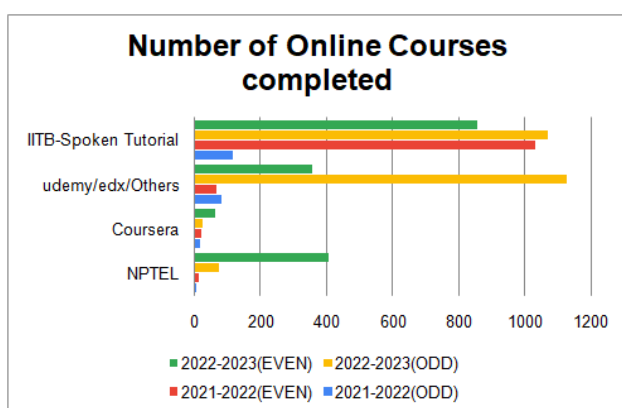
9.E-Learning

- ✓ Students and faculty members are encouraged to register for the NPTEL program/online certification courses of their own areas of teaching and research interests, for enhancing their teaching skills, smooth conduct of the teaching process in the regular class room teaching and for understanding the potential concepts much effectively.

- ✓ Faculty members are also made as mentors for providing support to the students to complete the course. The students who have not registered for any courses are supported by providing the NPTEL video lectures in the central digital library.
- ✓ Faculty members and students are encouraged to complete courses in various online platforms like Udemy, Coursera, edX, NITTT and future skills. Many number of courses were completed by our faculty members and students.

Faculty and Students Course Completion statistics

Academic Year	Number of Courses Completed				
	IITB-Spoken Tutorial	NPTEL	Coursera	Udemy/edX/Others	Total
2021-2022(ODD)	114	12	15	81	222
2021-2022(EVEN)	1030	15	18	65	1128
2022-2023(ODD)	1066	72	24	1122	2284
2022-2023(EVEN)	853	403	62	355	1673



Elite
NPTEL Online Certification
 (Funded by the MoE, Govt. of India)



This certificate is awarded to
NANDHINE B
 for successfully completing the course



Cloud Computing

with a consolidated score of **75** %

Online Assignments	23.5/25	Proctored Exam	51.02/75
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Total number of candidates certified in this course: **9640**

Jul-Oct 2022
 (12 week course)

Debjani
Prof. Debjani Chakraborty
 Coordinator, NPTEL
 IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL22CS87554471277

To validate the certificate



No. of credits recommended: 3 or 4



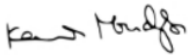
Certificate for the Completion of Scilab Training

This is to certify that **NETHRAAMBIGAI V** has successfully completed **Scilab** test organized at **Sri Sairam Engineering College** by **Sumathi S** with course material provided by the Spoken Tutorial Project, IIT Bombay. Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training.

S PREMALATHA from **Sri Sairam Engineering College** invigilated this examination. This training is offered by the Spoken Tutorial Project, IIT Bombay.

Credits: 3 Score: 68.89%

May 5th 2023


Prof. Kannan M Moudgalya
IIT Bombay

Credits for the Spoken Tutorial courses are based on our estimates of the work required to complete them. Recipient institutions are required to apply due diligence and get them ratified/modified by their own duly formed academic/assessment body. Spoken Tutorial is a project at IIT Bombay, started with funding from the National Mission on Education through ICT, Ministry of Education (previously MHRD), Govt. of India.

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CERTIFICATE OF COMPLETION

Presented to

NETHRAAMBIGAI V

For successfully completing a free online course
UI / UX for Beginners

Provided by
Great Learning Academy

(On April 2023)

To verify this certificate visit verify.mygreatlearning.com/SSIWTCDX