



Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences

Response:

The Institution ensures effective strategies to impart student centric learning methods in order to cater to the diverse learning needs of students from varied backgrounds and possessing learning abilities.

The faculty members of Amrita Sai Institute of Science and Technology are well trained to adopt student-centric approach in their class room teaching, as well as in online platform.

Every faculty has prepared a lesson Plan which was initiated by the IQAC of ASIST in the year 2022-23 and it continues to be the best practice of our college. Our lesson plan preparation has added up a new outlook towards our lesson preparation. Bloom's Digital Taxonomy which is in accordance with Blooms Revised Taxonomy has been followed by every staff member to make their classes active and meaningful. The structure of our Lesson plan focuses on outcome-based education. The lesson plans are embedded with course outcomes and program specific outcomes.

The lesson plans are prepared and submitted to the members of IQAC for scrutiny. The faculty members design Micro lesson plans in a specific format which has student centric methodology in order to achieve specific outcomes.

Following are the strategies embedded in our Micro lesson plan and are used in our classroom teaching:

Experiential Learning:

- Virtual Labs
- Learning by doing
- Internships and industrial exposure
- Field trips
- Audio visual learning in English Language lab
- Exploring innovations through project work
- Exhibiting models to promote creativity and experiential learning
- Field Projects
- Video Making

The Outcome Based Education for the programme is formulated with Theory cum Practical for all the Discipline Specific Courses and Discipline Specific Elective Courses that facilitate the students to understand the learned theory concepts alongside hands - on practical sessions. Demonstrations and Practical Experiments would foster substantial training to meet the industrial prospects.

Industrial visits and Field visits will be an induction for the core learning programme. Students are provided with ampules learning tools of Google classrooms, Mandatory Internships (15/30 days) for UG courses will be pragmatic for the students to perceive the significance of industry. Communicative skills and Career Skills training aids in the personality development and build confidence in the minds of students to appear for the placement interview. The Training and Placement Division establishes a training programme for placement targeted students for a fortnight during summer vacation to evolve communication, aptitude, logical thinking skills and make the students industry – ready. Students would gain colossal experience through Industrial Exposure Training and acquire in depth eruditions in the final semester.

Participative learning

- Blended Learning
- Participation and presentation through JAM, Directed Seminars, peer learning circles, guided library works, expert lectures and workshop. Puzzles, Debate, Pair work, dialogue and role play, etc.
- Learner centric learning.
- Innovative ideas and insights through charts, boards, models, assignments, and technical fests as platforms for growth.
- Extension programs and community survey
- Curricular, Co-curricular, Extra-curricular activities. Problem-solving methodology

Our Institution further provides high quality of out of class learning opportunities through guest lectures, seminars, and workshops that align the academic stated goals and outcomes. The co – curricular and extra - curricular activities plays an integral part of the students' holistic education through various squads of Cultural Club, Sports Club, NSS, NCC, Quiz Club, Consumer Club and Entrepreneurship Development Cell (Start Up). Students participation in Intra and Inter Collegiate Competitions, Cultural events, Sports and Games of District/State/ National and International levels enrich their professional ethics and social responsibilities. Participatory learning among students is also facilitated through innovative components in Modular Assessing Panel like Group Discussions, Quiz, Poster Presentations, Games and Simulation Exercises and Demonstrations.

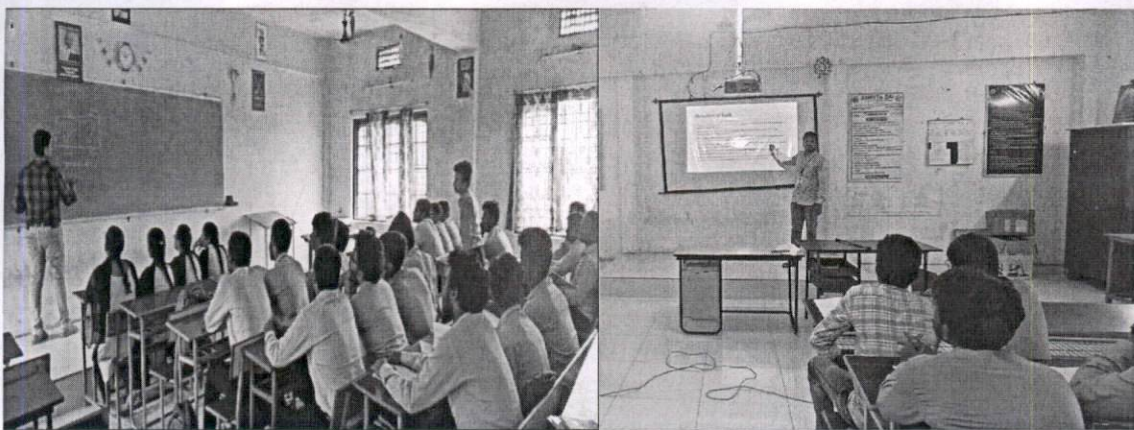
Problem-solving methodology

- Inquiry based activities like dealing with unstructured problems
- Case studies
- Developing models
- Co-operative and Collaborative Learning
- Mind mapping
- Data mining
- Logic adoption

Students are made to collaborate in Technical Forums to enable them to share & discuss their technical skills. Case Studies are given for students to build solutions to problems. Students are taught to build Applications by developing various Projects as a part of curriculum. Students are encouraged to participate in 'Hackathons' assessment methods. All the Departments are encouraged their

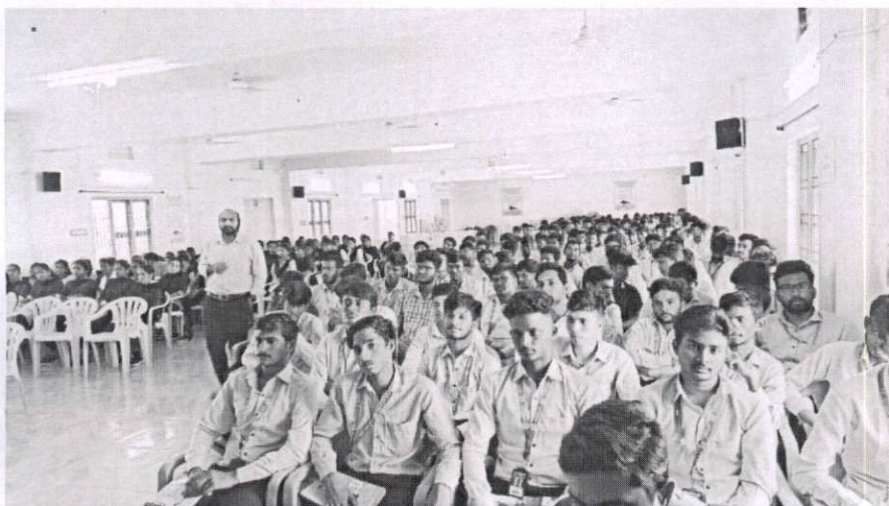
students to gain and increase problem-solving skills and motivated their students to participate in various inter-college and intra-college technical competitions.

The ultimate purpose of Student centric methods, such as experiential learning, participative learning and problem solving methodologies followed in our Institution is to improve the participation of each learner in the learning process and to improve the outcome of the learning process. The assessment for learners' learning experience a set of formative assessment procedures have been designed, developed and implemented. The generalized procedures for learners' learning experience assessment include pause point, reflection spot, and peer learning spot. While creating a lecture plan, a topic has been chosen, identify the pause points in the lecture and include a reflection spot, and peer learning spot. In an hour-long lecture, the inclusion of two or more pause points results in an interactive and participatory learning method as well as a suitable assessment for observing the learners' learning experience. Mostly course instructor at the pause point could give one or more examples and explanations for assimilation of the topic discussed. In this activity, encourages interactive participation of the learners'. A reflection spot is a spot for observing and evaluating the reflection of what the learners' gained. True/False questions, Yes/No type questions, Short answer (1-2 words) questions are the tools used to encourage the learners' interactive participation that could be used in reflection spot. Irrespective of the learners' cognitive level all should be involved because the answer to the reflection question is either yes or no or true or false. Once learners' were involved then a short answer type reflection question should be used. The True/False questions, Yes/No type questions, Short answer (1-2 words) questions are used to assess the Remember knowledge level and understand knowledge level of the learner. A peer learning spot is for improving the ability of slow learners with the help of a Fast learner by the technique known as learning by sharing technique. The interactive learner-centric learning methods for evaluating learners' learning experience method show that significant improvement in the active participation of each learner in learning process and also improvement observed in the outcome of the learning process. The method followed in our institution also creates facilities for self-learning. The overall academic achievements of the learners are significantly improved. Our Institution has created a good ambiance for experiential learning inside the laboratories and in the classroom in which students have developed Knowledge, Skills and Values from direct experiences outside academic settings. Our Institution strives to integrate experiential, participatory and problem solving methodologies by devising innovative teaching learning methodologies that brings a profound learning experience for the divergent students in the DIGITAL ERA.



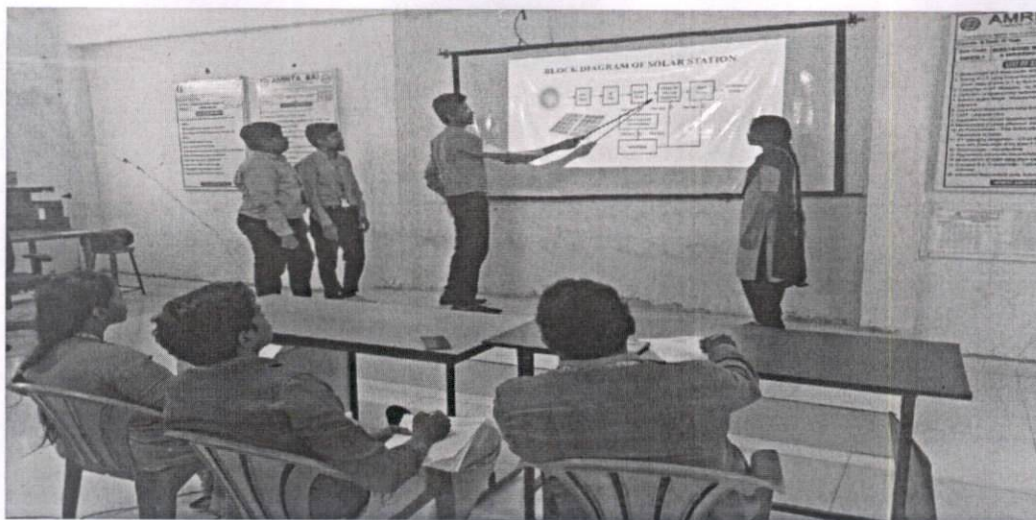
Interactive Method:

The lecture method of teaching is supplemented with the discussion and interactive method, wherever required. There is a scope for active participation of the students through discussions in each course. Faculty identifies the advanced topics and organizes the sessions.



Project based learning:

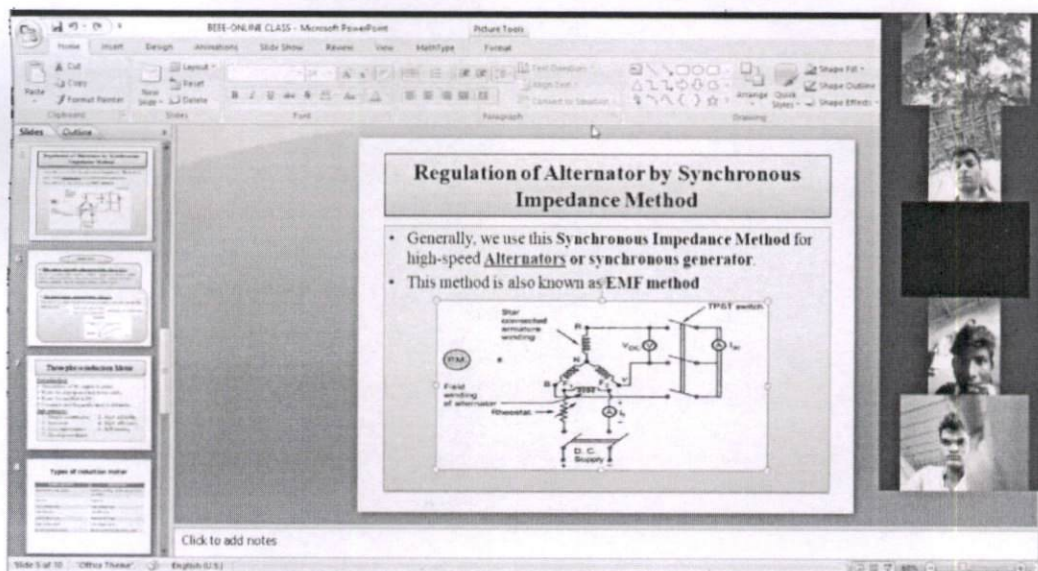
- Students are encouraged to done the mini projects which helps to improve the hands on experience and the presentation skills.
- Students in each section are divided into batches consisting of 3-5 students.
- Each batch selects their guide according to the research area of the faculty members.
- Problem identification is done based on the existing solutions collected from literature survey and also identifies the constraints to the problems.
- Students also learn new concepts during the project implementation from their peers by collaborative learning



MOOCs & Open Sources:

Students are encouraged to take up online courses through MOOCs. The students make use of the digital library for NPTEL videos, soft copies of handbooks, lecture notes, text books, online journals and other learning material through self-study.

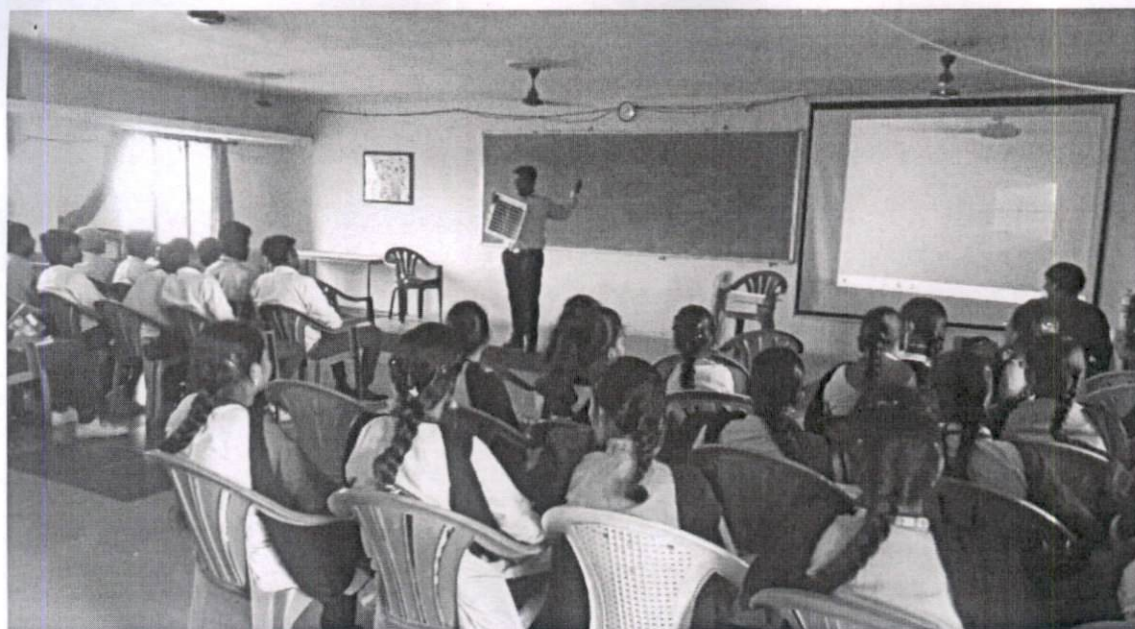
The department of EEE encourages the students to enrol for different Online Source Courses through MOOCs wherein courses are delivered to the students through Webinar by industry experts and Professors.



Guest Lectures & Workshops:

Guest lectures by experts from industry and academia are organized regularly for the students in advanced or core concepts to fill the gaps in the curriculum there by assisting in the attainment of POs/PSOs.

Workshops help the students to learn about advanced topics covering the breadth, research areas and technological developments in Electrical and Electronics Engineering. This helps the students to engage in life-long learning that raises the spirits with moral value that revitalizes them.



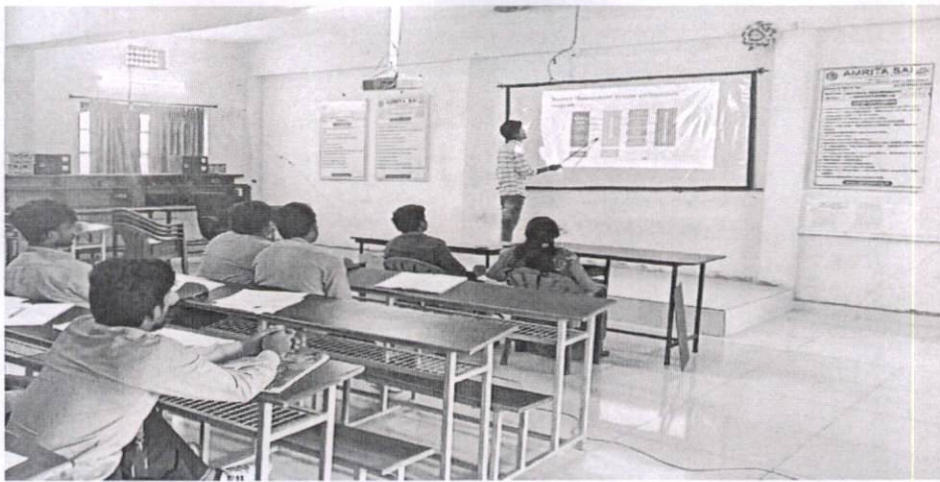
Collaborative learning:

The following are some of the collaborative learning activities that are organized by department.

- Seminars
- Group Discussion
- Quizzes
- JAM sessions
- Poster presentations
- Paper presentations

Seminars

A seminar presentation is a short informal talk giving the results of your researches into a topic on the course. Students sharing their ideas or discoveries in a way that gives seminar participants an opportunity for discussion.



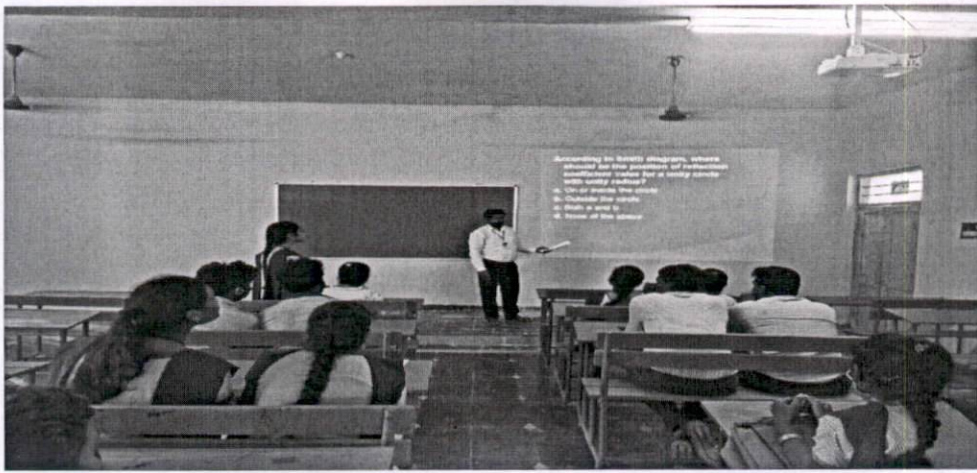
Group Discussion

Group discussion removes shyness of students and develops their communication skill. It builds their self- confidence. It develops them to express their views regarding a subject in a polite manner. Group discussions are arranged and facilitated by faculty members, at the end of a group discussion; the student members have clear and unbiased thoughts. The curriculum in the autonomous stream is framed such that the student takes up a review of the previous course. The recollection of such topics can be effectively carried out by hosting a Group Discussion rather than a lecture course delivery. This approach also covers way to improvise the communication and technical presentation skills of the students. The debate on topics by students, effectively improvise the skills of the students. At times, the faculty member summarizes the topic for the non-participants of the group discussions such that they appreciate the need for recollection of the topic.



Quizzes

A quiz is a quick and informal assessment of student knowledge. Quizzes are often used in higher education environments to briefly test a students' level of comprehension regarding course material, providing teachers with insights into student progress and any existing knowledge gaps.



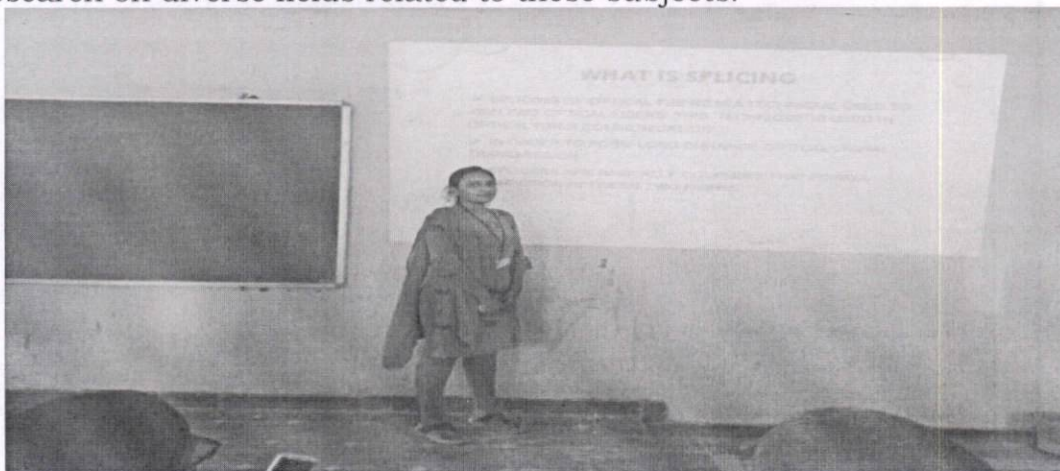
JAM SESSION

In this session, a small group of candidates will be asked to describe or talk about a topic, theme, situation or an object or just a song in English. In this regard, Just a Minute (JAM) session is a very useful activity for learners and it helps them in improving their fluency, accuracy and time management skills. At the time of interview, job seekers can present or give information exactly in a brief or concise manner.



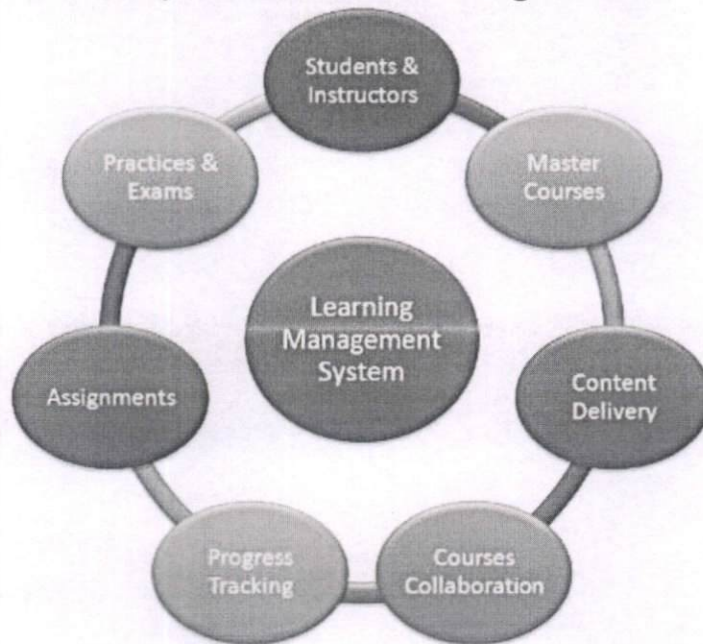
Paper presentations

The Paper Presentation competition is an academic event that is designed to enhance collaborative research in Engineering and Technology. It provides a unique opportunity for national and international students to present their views and research on diverse fields related to these subjects.



Learning Management System (Moodle):

The college encourages teaching & learning through LMS tool, such as Moodle. Each Department has a Moodle coordinator, who maps the students, courses and faculty at the beginning of the semester in Moodle. Lesson plan, syllabus, assignments, lab manuals and extra material, are shared with the students through Moodle. Quiz is conducted through Moodle.




Innovations by Faculty in Teaching & Learning Methodologies:

S. No	Name of the Subjects	Name of the Faculty	Innovations by Faculty in Teaching & Learning Methodologies		Tools Used/Weblink
1	Electronic Devices and Circuits	Dr. A. Vijayalakshmi Mrs. Ch. Sree Lakshmi	Flipped Learning	Blogspot	http://surl.li/ncnpi vijayalakshmiatla.blogspot.com sreelakshmicaparala.blogspot.com
			Tutorials	Whatsapp	
			PPT	You tube	
2	Signals and Systems	Dr. D. Hema Dr. S. V. Naresh	PPT	You tube	https://archive.nptel.ac.in/courses/108/104/108104100/ dubahema.blogspot.com
			Seminars	Coursera	
			Tutorials	Blogspot	
3	Switching Theory and Logic Design	Dr. T. Krishnamoorthy Mr. B. Balaji Mr. Abdul Azeez	Seminars	Whatsapp	https://archive.nptel.ac.in/courses/106/105/106105185/ azeezmails.blogspot.com
			PPT	You tube	
			Tutorials	Blogspot	
4	Pulse and Digital Circuits	Dr. D. Dayakar Rao Mr. K. Chandra Rao	Seminars	Blogspot	https://www.youtube.com/watch?v=8VYUgEcmrYQ damaladayaka
			PPT	You tube	
			Charts	Google Class Room	

					rrao.blogspot.com kchandrarao.blogspot.com
5	Analog and Digital Communications	Dr. S. Sivalingam Mr. P. Bharat	Virtual Labs	Moodle	https://www.youtube.com/watch?v=qhij6WG7Rgc ssivalingam.blogspot.com
			Tutorials		
			Seminars	You Tube	
			PPT	Whatsapp	
6	Electronic Circuit Analysis	Mrs. G. Latha Mrs. T. Pushpalatha	Seminars	Blogspot	http://surl.li/ncnng lathagavini.blogspot.com
			Tutorials	You tube	
			PPT	Whatsapp	
7	Electromagnetic Theory and Transmission Lines	Dr. R. Dinesh Kumar Mrs. J. Naga Prathima	Seminars	Blogspot	https://archive.nptel.ac.in/courses/108/106/108106157/ nagaprathima.blogspot.com
			PPT		
			Tutorials	Whatsapp	
			Project Based Learning	YouTube	
8	Linear & Digital IC Applications	Dr. V. Gajendra Kumar Mr. A. Enoch Mrs. N. Visranthamma	Seminars	Blogspot	https://shorturl.at/gkzEJ nandruvisrantamma.blogspot.com alaparthyenoch.blogspot.com
			PPT	Whatsapp	
			Tutorials	You tube	
			Virtual Labs		
9	Antennas and Wave Propagation	Dr. S. Chatterjee Dr. K. Phani Srinivas	Collaborative Learning	Blogspot	https://www.academia.edu/40805190/Antenna and Wave Propagation samiranchatterjee.blogspot.com
			Seminars		
			Flipped Learning	Whatsapp	
			PPT	You tube	
10	Digital Signal Processing	Dr. A. Damodar Reddy Mr. K. Naresh	Virtual Labs	You tube	https://archive.nptel.ac.in/courses/108/101/108101174/ adamodarreddy.blogspot.com
			PPT		
			Seminars	Whatsapp	
			Tutorials	Blogspot	
11	Microwave Engineering	Dr. K. Murali Babu Mr. Ch. Srihari	Seminars	Blogspot	https://archive.nptel.ac.in/courses/108/103/108103141/ chengalvasriha.blogspot.com
			Flipped Learning	Whatsapp	
			PPT	You tube	
12	VLSI Design	Dr. B. Jaya Chandran Mr. B. Rama Rao Mrs. G. Nalini	Collaborative Learning	Whatsapp	https://nptel.ac.in/courses/117106092 bodduramarao.blogspot.com
			Seminars	You tube	
			PPT	Blogspot	
13	Microprocessors and Microcontrollers	Mrs. V. Swarnalatha Mr. V. Narahari	Seminars	Blogspot	https://www.geeksforgeeks.org/introduction-of-microprocessor/ vayalasettyswarna.blogspot.com
			PPT	Moodle	
			Flipped Learning	Whatsapp	
				You tube	
14	Optical Communication	Dr. Vasantha Swaminathan S	Collaborative Learning	Blogspot	https://archive.nptel.ac.in/c

		Mr. B. Anjani Kumar Mrs. B. Aruna Kumari	PPT Seminars	Whatsapp You tube	ourses/108/1 06/10810616 7/ boddunarunaku mari.blogspot. com
15	Digital Image Processing	Dr. V. Ramesh Babu Mr. Ch. Srihari	Virtual Labs PPT Seminars Tutorials	You tube Blogspot Coursera Moodle	https://www.geeksforgeeks.org/digital-image-processing-basics/ rameshvallabh aneni.blogspot. com
16	Radar Engineering	Mr. G. Venkata Rao Mrs. B. Suneetha	PPT Seminars Tutorials	Blogspot You tube Whatsapp	https://archive.nptel.ac.in/courses/108/105/108105154/ gurramvenkatr a.blogspot.com buttulasuneth a.blogspot.com


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