ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES

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(Institute Accredited by NAAC, Bangalore) (Institute Accredited by IE (I), Kolkata)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

MINUTES of 17th BOS

Date & Time
12.07.2024 & 10.00 am

ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES

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Academic Year 2024-2025

MINUTES OF BOARD OF STUDIES

The meeting of the Board of Studies in Electrical and Electronics Engineering (UG) of the Department of Electrical and Electronics Engineering, AITS, Rajampet held on 12.07.2024 at 10 a.m. to discuss the revision of curriculum and syllabus of B. Tech.

The following members were present for the BoS meeting

S. No.	Name of the Board Member	Designation	Institute/Industry	Role
Internal Members				
1.	Dr. M. Padma Lalitha	Professor	AITS, Rajampet	Chairman
2.	Dr. P. B. Chennaiah	Associate Professor	AITS, Rajampet	Member
3.	Dr. S. Suresh	Associate Professor	AITS, Rajampet	Member
4.	Mr. C. Ganesh	Assistant. Professor	AITS, Rajampet	Member
External Members				
5.	Dr. M. Sydulu	Ex. Professor	NIT, Warangal	Academic Expert
6.	Dr. K. Siva Kumar	Associate Professor	IIT, Hyderabad	Academic Expert
7.	Dr. K. Sreenivas	Superintending Engineer	APSPDCL, Nellore	Industry Expert
8.	Mr. P. Amarnath	Application Development Senior Analyst	Accenture, Hyderabad	Alumni

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AGENDA OF THE MEETING

Item No.	Particulars
BoS / 2024 / EEE / UG /17.1	Ratification of 16th Board of Studies meeting.
BoS / 2024 / EEE / UG / 17.2	Ratification of 16th Board of Studies meeting action taken.
BoS / 2024 / EEE / UG / 17.3	Discussion on stakeholder's feedback on curriculum.
BoS / 2024 / EEE / UG / 17.4	Discussion on course structure for II, III, and IV B. Tech, R23 Reg.
BoS / 2024 / EEE / UG / 17.5	Discussion on detailed syllabus for II-B. Tech, R23 Reg.
BoS / 2024 / EEE / UG / 17.6	Discussion on COs, POs, CO-PO mapping etc.
BoS / 2024 / EEE / UG / 17.7	Identification and Listing of External Examiners.

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MINUTES OF THE MEETING

Dr. M. Padma Lalitha, Professor and Head Department of Electrical & Electronics Engineering, Chairman, BoS initiated the meeting with a warm welcome and thanked them for accepting the invitation to the 17th BoS meeting.

Item No: 1 BoS / 2024 / EEE / UG / 17.1

Ratification of the 16th Board of Studies meeting held on 28.06.2023

The external BoS members have ratified the points discussed in the 16th Board of Studies meeting held on 28/06/2023.

Item No: 2 BoS / 2024 / EEE / UG / 17.2

Ratification of 16th BoS meeting action taken report

The BoS chairperson presented the action taken report on changes made in the syllabus as per the suggestions given by the external BoS members and is enclosed in **Annexure-I.**

Item No: 3 BoS / 2024 / EEE / UG / 17.3

Discussion on stakeholder's feedback on curriculum.

The BoS chairperson presented the stakeholders feedback on curriculum received from the feedback committee approved by PAC (Programme Assessment Committee). The resolutions are appended in **Annexure-II.**

During the meeting the following suggestions given by the BoS members.

Suggestions given by Dr. M. Sydulu

- The concept of Laplace Transform should be included in Complex Variables & Numerical Methods.
- The concept of Fourier Series, Transform should be included in Complex Variables & Numerical Methods.
- The concept of Wavelets can be incorporated.
- Give the information about ratings of various equipment such as transformers, generators etc.

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.Item No: 4 BoS / 2024 / EEE / UG / 17.4

Discussion on course structure for II, III, and IV B. Tech, R23 Reg.

The BoS chairperson discussed the course structure for II, III, and IV B. Tech, R23 Regulation and the BoS members approved the course structure and the copy of course structure is enclosed in **Annexure-III.**

Item No: 5 BoS / 2024 / EEE / UG / 17.5

Discussion on detailed syllabus for II-B. Tech, R23 Reg.

The BoS chairperson discussed the syllabus for II B. Tech., R23 Regulation, and the BoS members approved the syllabus.

Item No: 6 BoS / 2024 / EEE / UG / 17.6

Discussion on COs, POs, CO-PO mapping etc.

The BoS chairperson and other members discussed the COs, POs, and CO-PO mapping with the external BoS members. The BoS members approved the CO-PO mapping.

Item No: 7 BoS / 2024 / EEE / UG / 17.7

Identification and Listing of External Examiners.

The BOS chairperson listed out the external examiners from IITs, NITs and Universities. The list of examiners is presented in **Annexure-IV.**

Dr. M. Padma Lalitha
Chairman

HEAD OF THE DEPARTMENT
ELECTRICAL & ELECTRONICS ENGINEERING
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NEW BOYANAPALLI, RAJAMPET, A.P.

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Annexure-I (Action Taken Report - Revised Syllabus)

SWARM IN TELLIGENCE TECHNIQUES IN POWER SYSTEMS (23B22CT)

UNIT-I: Fundamentals of Soft Computing Techniques

Definition-classification of optimization problems-unconstrained and constrained optimization optimality conditions-Introduction to intelligent systems-soft computing techniques- conventional computing versus swarm computing-classification of meta- heuristic techniques-single solution based and population-based algorithms-exploitation and exploration in population-based algorithms-Properties of Swarm intelligent Systems

UNIT-II: Genetic Algorithm and Particle Swarm Optimization

Genetic algorithm versus Conventional Optimization Techniques- Genetic representations and selection mechanisms: Genetic operators-different types of crossover and mutation operators-Bird flocking and Fish Schooling-anatomy of a particle-equations based on velocity and positions-PSO topologies-control parameters-GA and PSO algorithms for solving ELD problems.

UNIT-III: Ant Colony Optimization and Artificial Bee Colony Algorithms

Biological ant colony system-Artificial ants and assumptions –Stigmergic communications-pheromone updating-local-gl obal-pheromone evaporation-ant colony system-ACO models-Touring ant colony system-max min ant system-concept of elastic ants-Task partitioning in honey bees-Balancing foragers and receivers-Artificial bee colony (ABC) algorithms-binary ABC algorithms-ACO and ABC algorithms for solving Economic Dispatch of thermal units.

UNIT-IV: Shuffled Frog-Leaping Algorithm and Bat Optimization Algorithm

Bat algorithm-Echolocation of bats-Behaviour of micro bats-Acoustics of echolocation- Movement of Virtual bats-Loudness and pulse Emission-Shuffled frog algorithm-virtual population of frogs-comparison of memes and genes-memeplex formation-memeplex updation-BA and SFLA algorithms for solving ELD and optimal placement and sizing of the DG problem.

UNIT-V: Multi Objective Optimization

Multi-Objective optimization introduction-concept of pareto optimality-non-dominant sorting technique- pareto fronts-best compromise solution-min-max method-NSGA-II algorithm and applications to power systems.

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HVDC TRANSMISSION (23B21AT) – Revised Syllabus

UNIT-I: General Aspects of DC Transmission

Evolution of HVDC transmission, Comparison of HVDC and HVAC systems, Types of DC links, Components of a HVDC system, Three-phase Converters, Pulse number, choice of best circuit for HVDC converters.

UNIT-II: Analysis of HVDC Converter

Analysis of simple rectifier circuits, required features of rectification circuits for HVDC transmission. Analysis of HVDC converter: Different modes of converter operation, Output voltage waveforms and DC voltage in rectification, Output voltage waveforms and DC in inverter operation, Thyristor/Valve voltages. Equivalent electrical circuit.

UNIT-III: DC Link Control

Grid control, basic means of control, power reversal, limitations of manual control, Constant current versus Constant Voltage, Desired features of control. Actual control characteristics: Constant-minimum-ignition-angle control, Constant- current control, Constant-extinction-angle control. Stability of control, tap-changer control, Power control and current limits, frequency control.

UNIT-IV: Converter Faults & Protection

Converter fault-operations, Commutation failure, Starting and shutting down the converter bridge, Converter protection.

UNIT-V: Reactive Power Management & AC-DC Power Flow Analysis

Smoothing reactor and DC Lines, Reactive power requirements, Harmonic analysis, Filter design, Power flow Analysis in AC/DC systems – Modelling of DC links – solutions of AC-DC Power flow.

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Annexure-II (Stakeholder's Feedback)

The following recommendations have been forwarded from the feedback committee and PAC to the BOS. The resolutions passed are provided point wise below:

S. No.	Decision About	Resolution
1.	Incorporating the Signals and Systems course into curriculum.	It has been resolved to incorporate the Signals and Systems into curriculum.
2.	Conducting workshop on IoT technologies.	It has been resolved to conduct workshop or incorporate skill course on IoT technologies
3.	Conducting of the GATE classes.	It has been resolved to conduct GATE classes for the coming academic year too.
4.	Conducting guest lectures and workshops on recent technologies.	It has been resolved to conduct guest lectures and workshops on recent technologies.
5.	Organizing industrial visits.	It has been resolved to organize industrial visits.

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Annexure-III (Course Structure for II, III and IV B. Tech)

B.Tech. II Year-I Semester

S.No.	Category	Title	L	T	P	C
1	BS	Complex Variables & Numerical Methods	3	0	0	3
2	BS	Universal Human Values-Understanding Harmony	2	0	0	2
3	Engineering Science	Electromagnetic Field Theory	3	0	0	3
4	Professional Core	Electrical Circuit Analysis-II	3	0	0	3
5	Professional Core	DC Machines & Transformers	3	0	0	3
6	Professional Core	Electrical Circuit Analysis-II and Simulation Lab	0	0	3	1.5
7	Professional Core	DC Machines & Transformers Lab	0	0	3	1.5
8	Skill Enhancement Course	Java Programming	0	1	2	2
		Total	**14**	**1**	**8**	**19**

B.Tech. II Year-II Semester

S.No.	Category	Title	L	T	P	C
1	Management Elective-I	Managerial Economics & Financial Analysis / Business Environment / Organizational Behaviour	2	1	0	3
2	Engineering Science/Basic Science	Analog Circuits	3	0	0	3
3	Professional Core	Power Systems-I	3	0	0	3
4	Professional Core	Induction and Synchronous Machines	3	0	0	3
5	Professional Core	Control Systems	3	0	0	3
6	Professional Core	Induction and Synchronous Machines Lab	0	0	3	1.5
7	Professional Core	Control Systems Lab	0	0	3	1.5
8	Skill Enhancement Course	Python Programming	0	1	2	2
9	Engineering Science	Design Thinking & Innovation	1	0	2	2
10	Audit Course	Environmental Science	2	0	0	-
		Total	**17**	**2**	**10**	**22**
Mandatory Community Service Project of 08 weeks duration during summer vacation						

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B.Tech. III Year-I Semester

S.No.	Category	Title	L	T	P	C
1	Professional Core	Power Electronics	3	0	0	3
2	Professional Core	Digital Circuits	3	0	0	3
3	Professional Core	Power Systems-II	3	0	0	3
4	Professional Elective- I	1. Signals and Systems 2. Computer Architecture and Organization 3. Communication systems	3	0	0	3
5	Open Elective-I	-	3	0	0	3
6	Professional Core	Power Electronics Lab	0	0	3	1.5
7	Professional Core	Analog and Digital Circuits Lab	0	0	3	1.5
8	Skill Enhancement course	IoT Applications of Electrical Engineering	0	1	2	2
9	Engineering Science	Tinkering Lab	0	0	2	1
10	Evaluation of Community Service Internship	-	-	-	-	2
11	Audit Course	Gender Sensitization / Constitution of India	2	0	0	-
		Total	**17**	**1**	**10**	**23**

B.Tech. III Year-II Semester

S.No.	Category	Title	L	T	P	C
1	Professional Core	Electrical Measurements and Instrumentation	3	0	0	3
2	Professional Core	Microprocessors and Microcontrollers	3	0	0	3
3	Professional Core	Power System Analysis	3	0	0	3
4	Professional Elective-II	1. Switchgear and Protection 2. Advanced Control Systems 3. Renewable and Distributed Energy Technologies	3	0	0	3
5	Professional Elective-III	1. Electric Drives 2. Digital Signal Processing 3. High Voltage Engineering	3	0	0	3
6	Open Elective - II		0	0	3	1.5
7	Professional Core	Electrical Measurements and Instrumentation Lab	3	0	0	3
8	Professional Core	Microprocessors and Microcontrollers Lab	0	0	3	1.5
9	Skill Enhancement course	Soft Skills	0	0	3	1.5
10	Audit Course	Technical paper Writing & IPR	3	0	0	3
		Total	**20**	**1**	**8**	**23**
Mandatory Industry Internship of 08 weeks duration during summer vacation						

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B.Tech. IV Year-I Semester

S.No.	Category	Title	L	T	P	C
1	Professional Core	Power System Operation and Control	3	0	0	3
2	Management Course- II	Energy Management & Auditing	2	0	0	2
3	Professional Elective-IV	1. Programmable Logic Controllers 2. HVDC & FACTS Electrical Distribution System	3	0	0	3
4	Professional Elective-V	1. Hybrid Electric Vehicles 2. Switched Mode Power Conversion Utilization of Electrical Energy	3	0	0	3
5	Open Elective - III		3	0	0	3
6	Open Elective-IV		3	0	0	3
7	Skill Enhancement Course	Power Systems and Simulation Lab	3	0	0	3
8	Internship	Evaluation of Industry Internship	0	0	3	1.5
		Total	**17**	**0**	**4**	**21**

B.Tech. IV Year-II Semester

S.No.	Category	Title	L	T	P	C
1	PR	Internship and Project	-	-	24	12

Open Electives

S.No.	Category	Title	L	T	P	C
1	Open Elective-I	1. Renewable Energy Sources 2. Concepts of Control Systems 3. Concepts of Energy Auditing & Management	3	0	0	3
2	Open Elective - II	1. Fundamentals of utilization of Electrical Energy 2. Fundamentals of Power Electronics 3. Concepts of Power System Engineering	3	0	0	3
3	Open Elective - III	1. Fundamentals of Electric Vehicles 2. Battery Management Systems and Charging Stations 3. Concepts of Smart Grid Technologies	3	0	0	3
4	Open Elective - IV	1. Concepts of Microprocessors and Microcontrollers 2. Concepts of Power Quality 3. Intelligent Control Systems	3	0	0	3

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Annexure-IV (List of External Examiners)

S.No.	Subject	Examiner Name	Address
1	Electromagnetic Field Theory	Dr. A. Jayalakshmi	Professor, Department of EEE, JNTUCEH, Hyderabad
		Dr. V.V.K Reddy	Professor, Department of EEE, NBKRIST, Nellore
		Dr. C. Srinivasarao	Professor, Department of EEE, GPCET, Kurnool
		Dr. Y. N. Vijay kumar	Professor& HoD, Department of EEE, SVCET, Chittor
		Dr. B. Urmila	Associate Professor, Department of EEE, GPREC, Kurnool
2	Electrical Circuit Analysis-II	Dr. V.C. Veera Reddy	Professor, Department of EEE, SPMVV, Tirupati
		Dr. M. Damodar Reddy	Professor, Department of EEE, SVUCE, SVU, Tirupati
		Dr. R. Kiranmayi	Professor, Department of EEE, JNTUCEA, Ananthapur
		Dr. I Prabhakara Reddy	Professor, Department of EEE, NBRIST, Vakadu
		Dr. Y. N. Vijay kumar	Professor & HoD, Department of EEE, SVCET, Chittor
3	DC Machines & Transformers	Dr. K. Vaisakh	Professor, Department of EEE, Andhra University, Visakhapatnam
		Dr. P. Sujatha	Professor, Department of EEE, JNTUCEA, Anantapur
		Dr. K. Amaresh	Professor, Department of EEE, St. Peters Engineering College, Hyderabad
		Dr. M. Senthilkumar	Professor, Department of EEE, Sona college of Technology Salem, Tamilnadu
		Dr. P Chandrasekhar	Associate Professor, Department of EEE, MGIT, Hyderabad

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S.No.	Subject	Examiner Name	Address
4	Analog Circuits	Dr. S. Chandra Mohan Reddy	Associate Professor, Department of ECE, JNTUACEA, Anantapuramu
		Dr. Ch. Usha Kumari	Professor, Department of ECE, GRIET, Hyderabad
		Dr KSR Krishna Prasad	Professor, Department of EEE, NIT Warangal
		Dr. G. Srinivasulu	Professor, Department of ECE, LBRCE, Krishna
		Dr. B. Senthil Kumar	Associate Professor, Department of ECE, Sri Vidyanikethan Engineering College, Tirupathi
5	Power Systems-I	Dr. V.V.K Reddy	Professor, Department of EEE, NBKRIST, Nellore
		Dr. K. Udayakumar	Professor, Department of EEE, Anna University, Chennai
		Dr. E. Vidya Sagar	Professor, Department of EEE, Osmania University, Hyderabad
		Dr. N. Chellammal	Associate Professor, Department of EEE, SRMIST, Chennai.
		Dr. B. Urmila	Associate Professor, Department of EEE, GPREC, Kurnool
6	Induction and Synchronous Machines	Dr. K. Vaisakh	Professor, Department of EEE, AU, Visakhapatnam
		Dr. P. Sujatha	Professor, Department of EEE, JNTUCEA, Anantapur
		Dr. M. Kiran Kumar	Associate Professor, Department of EEE, KL University, Guntur
		Dr. I Prabhakara Reddy	Professor, Department of EEE, NBRIST, Vakadu
		Dr. K. Amaresh	Professor, Department of EEE, KSRMCE, Kadapa

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S.No.	Subject	Examiner Name	Address
7	Control Systems	Dr. V. Somasekhar	Professor, Department of EEE, NIT Warangal
		Dr. N. Chellammal	Associate Professor, Department of EEE, SRMIST, Chennai.
		Dr. K. Udhayakumar	Professor, Department of EEE, Anna University, Chennai
		Dr. D. Lenine	Professor, Department of EEE, RGMCET, Nandyal
		Dr. M. Kiran Kumar	Associate Professor, Department of EEE, K L University, Guntur

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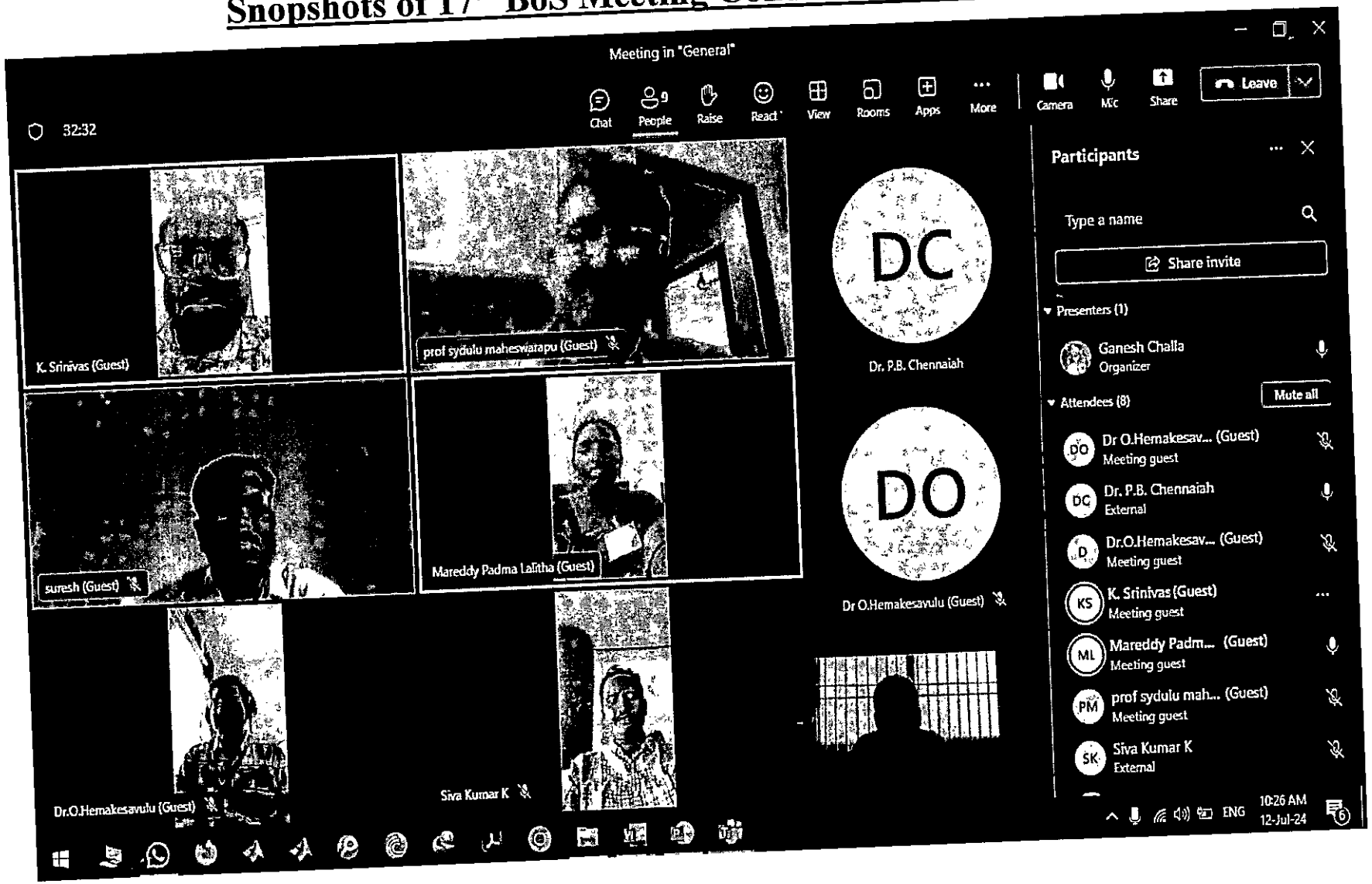
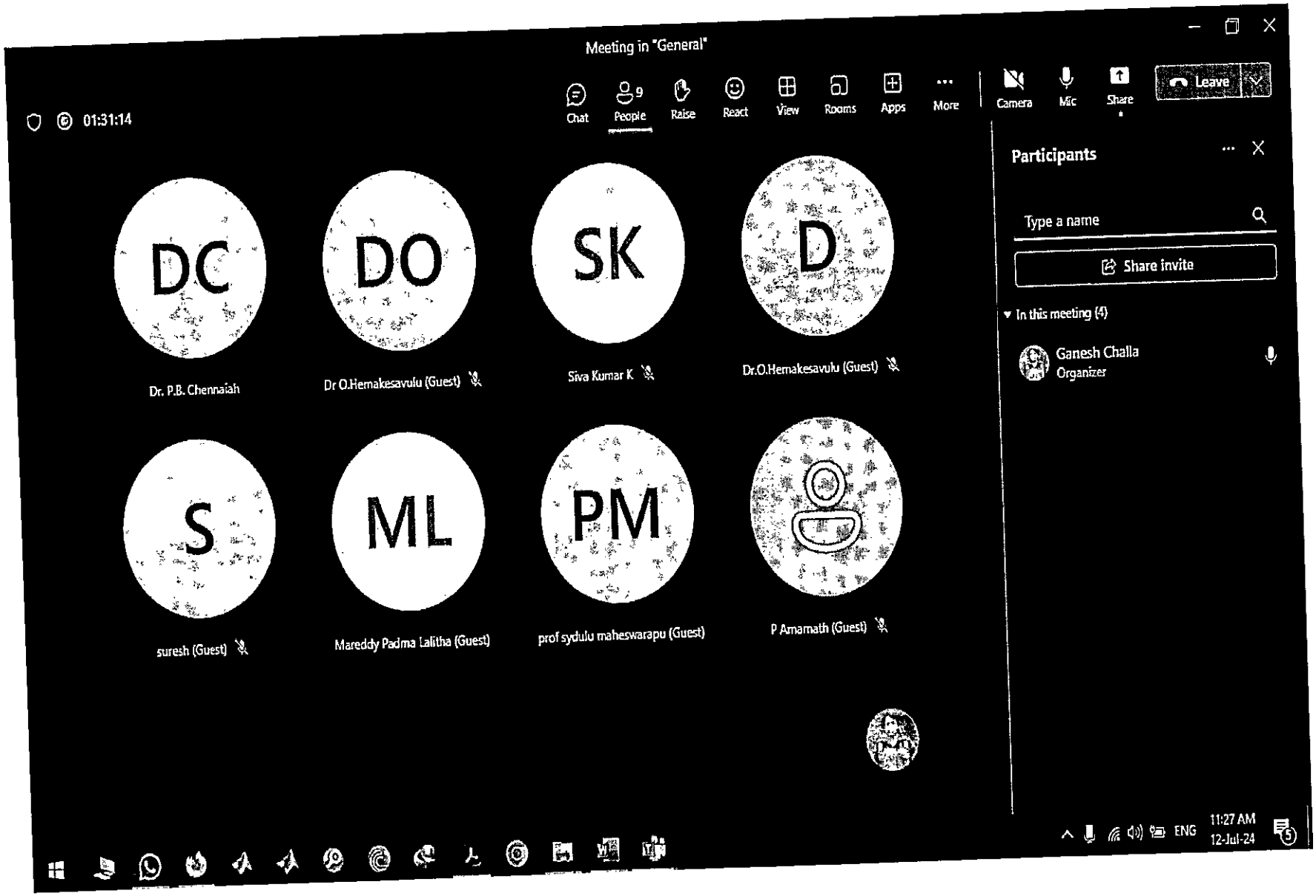
Signature of the Board Members

S. No.	Name of the Board Member	Signature
1.	Dr. M. Padma Lalitha	
2.	Dr. P. B. Chennaiah	
3.	Dr. S. Suresh	
4.	Mr. C. Ganesh	
5.	Dr. M. Sydulu	Attended through online
6.	Dr. K. Siva Kumar	"
7.	Dr. K. Sreenivas	"
8.	Mr. P. Amarnath	"

Snopshots of 17th BoS Meeting Conducted on 12/07/2024

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Dr. P.B. Chennaiah
DO
Dr O.Hemakesavulu (Guest)
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Siva Kumar K
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Dr.O.Hemakesavulu (Guest)
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prof sydulu maheswarapu (Guest)
P Amarnath (Guest)
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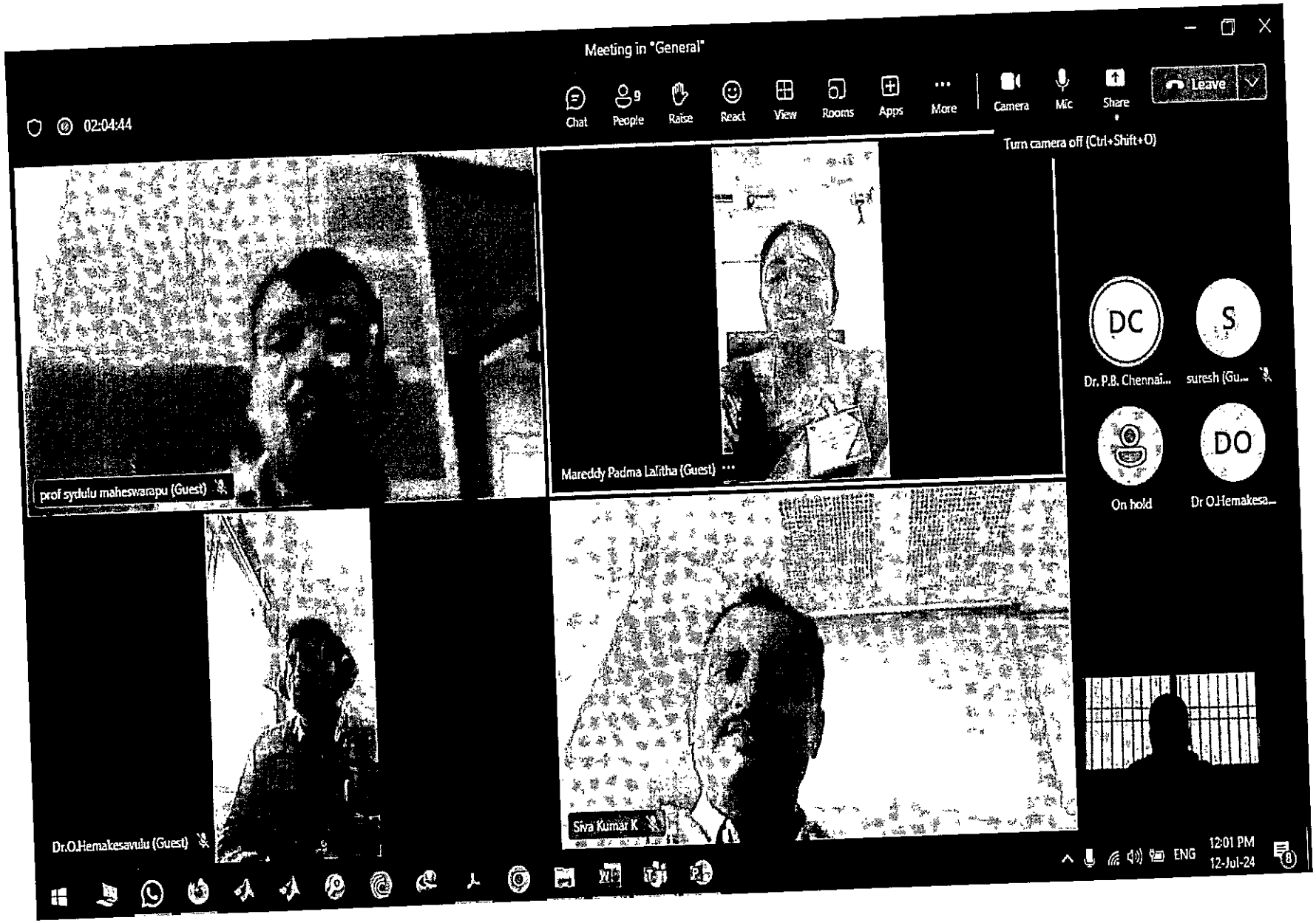
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Dr.O.Hemakesavulu (Guest)
Siva Kumar K
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