7.2. Best Practice-1

"STEM Session for Faculty"

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7.2 Best Practices

STEM

Session on Technology, Engineering and Mathematics

MAHENDRA COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi | Affiliated by Anna University, Chennai

Accredited by NAAC 'A' Grade

Academic Year 2023-24 (Odd Semester)

"STEM- Sessions on Technology, Engineering and Mathematics"

S. No	Name	Designation and Department	Title of presentation	Date
1.	Prof. P. Rajan	Asso.Prof./English	Communicative Language Teaching	04.10.23
2.	Dr. M. Haridass	Asso.Prof./Mech.	Renewable Sources Of Energy	11.10.23
3.	Dr. M. S. Saravanan	Asso.Prof./EEE.	How to Write a Successful Project Proposal to Funding Agencies?	18.10.23
4.	Dr.R.Nandhakumar	Asso.Prof./Mech.	Introduction to Nanofluids	25.10.23
5.	Dr.C Prabhu	Assist.Prof./Mech.	Stress Management & Effects of Stress	8.11.23
6.	Mr.M.Anandraj	Assist.Prof./CSE.	IKIGAI-Japanese technique transfers our lives.	15.11.23
7.	Dr.J.Sampthkumar	Assist.Prof./ECE	Patent publication	22.11.23
8.	Dr.P.N.Palanisamy	Assist.Prof./ECE	Behind and Beyond 5G	29.11.23
9.	Dr.B.Balaji	Assist.Prof./English	Effective Communicative Skills for Classroom	06.12.23
10.	Mrs.S.K.Deepa	Assist.Prof./Bio.Med.	Solution for adverse effect of allopathic medicine and treatment	13.12.23
11.	Dr.C.Kamal	Assist.Prof./Chemistry	Research article publication in journal	20.12.23
12.	Mr. T. Ramesh	Assist.Prof./EEE	Health is wealth	27.12.23

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MAHENDRA EDUCATIONAL INSTITUTIONS

CIRCULAR

Ref No: MCE/ ACAD/2023-24/Odd//01 Date: 25.09.2023

This is to inform all the faculty members that it is planned to conduct a series of sessions by the name of "STEM- Sessions on Technology, Engineering and Mathematics" a knowledge sharing sessions in our institution starting from 04.10.2023. The guidance for the same is given below:

1. The session will be conducted in every Wednesday in working days.
2. The schedule for the session will be prepared by the IQAC coordinator and will be approved by the Principal.
3. Dr.M.Haridass, Associate professor of Mechanical Engineering will be the STEM Coordinator and Mr.T.Parthiban, Assistant Professor, Mechanical Engineering will coordinate the things in his absence.
4. Once the schedule is published, the faculty member concerned need to select at least two most recent topics related to his/ her domain of specialization and submit the same to the STEM coordinator at least one week before the presentation. The topic should be generic in nature and should be understandable to everyone irrespective of their specialization.
5. STEM coordinator and/ or IQAC coordinator will select anyone topic.
6. Once the topic is finalized the faculty member should prepare a PPT for 25 to 30 minutes presentation.
7. Soft copy of the content needs to be shared to the STEM coordinator through the Email haridassm@mahendracollege.com and a copy of the same is to be shared to iqac@mahendracollege.com at least one day before the presentation.
8. End of the each session there will be a Q&A session for 5 to 10 minutes.
9. Faculty members those who are not having classes in the fourth hour are to attend the STEM without fail. (Faculty members' individual time table is available with the IQAC). At least 25 faculty members should be there in each session.
10. It is the responsibility of the presenter to ensure the availability of the presentation medium (Computer, PPT, etc.,) and a person to operate the system.
11. Normally the sessions will be conducted in the seminar hall. If seminar hall is not available in the particular day, venue will be informed by the STEM coordinator well in advance to the presenter and information regarding this will also be posted in the IQAC group.
12. In any unforeseen situation if the faculty member is not in a position to handle the session, it is the responsibility of the faculty member concerned to alter the session to any faculty member with the prior intimation to STEM coordinator and IQAC coordinator.

13. In any unforeseen situation if the class is cancelled the alternate day of session will be informed by STEM coordinator and which will be the final decision.
14. A report on each session should also be prepared by the presenter and should be submitted to the IQAC.
15. If any successive speaker is taking the input from the previous speaker and develops the content, it will be a positive note.

Schedule for ODD Semester 2023-24

S. No	Name	Designation and Department	Date
1.	Prof. P. Rajan	Asso.Prof./English	04.10.23
2.	Dr. M. Haridass	Asso.Prof./Mech.	11.10.23
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10.	Mrs.S.K.Deepa	Assist.Prof./Bio.Med.	13.12.23
11.	Dr.C.Kamal	Assist.Prof./Chemistry	20.12.23
12.	Mr. T. Ramesh	Assist.Prof./EEE	27.12.23

IQAC- Coordinator

Principal

PRINCIPAL
Mahendra College of Engineering
Mahendra Salem Campus,
Minnampalli, SALEM-636 106
TAMIL NADU.

Copy Submitted to;
The Managing Director
Copy to:
All the Heads, with a note to inform their department faculty members
A.O.
File

COMMUNICATIVE LANGUAGE TEACHING

BACKGROUND

Wilkins's contribution was an analysis of the communicative meanings that a language learner needs to understand and express.

Rather than describe the core of language through traditional concepts of grammar and vocabulary, Wilkins attempted to demonstrate the systems of meanings that lay behind the communicative uses of language.

CHARACTERISTIC FEATURES

"One of the most characteristic features of communicative language teaching is that it pays systematic attention to functional as well as structural aspects of language."

INTERACTION AND TRANSACTION

Communicative purposes may be of many different kinds.

What is essential in all of them is that at least two parties are involved in an interaction or transaction of some kind where one party has an intention and the other party expands or reacts to the intention.

NO WHIP NO TEARS

Writes Montaigne, "Without methods, without a book, without grammar or rules, without a whip and without tears, I had learned a Latin as proper as that of my schoolmaster".

APPROACH

The communicative approach in language teaching starts from a theory of language as communication. The goal of language teaching is to develop what Hymes (1972) referred to as "Communicative competence".

EXPRESSION OF MEANING

Language is a system for the expression of meaning.

INTERACTION AND COMMUNICATION

The primary function of language is for interaction and communication.

COMMUNICATIVE USES

The structure of language reflects its functional and communicative uses.

FUNCTIONAL USES

The primary units of language are not merely its grammatical and structural features, but categories of functional and communicative meaning as exemplified in discourse.

THEORY

Krashen and other second language acquisition theorists typically stress that language learning comes about through using language communicatively, rather than through practicing language skills.

DESIGN

Curriculum or instructional objectives for a particular course would reflect specific aspects of communicative competence according to the learner's proficiency level and communicative needs.

LEARNER'S ROLE

Often there is no text, grammar rules are not presented, classroom arrangement is nonstandard, students are expected to interact primarily with each other rather than with the teacher, and correction of errors may be absent or infrequent.

JOINT RESPONSIBILITY

CLT methodologists consequently recommend that learners learn to see that failed communication is a joint responsibility and not the fault of speaker or listener.

Similarly, successful communication is an accomplishment jointly achieved and acknowledged.

TEACHER'S ROLES

The teacher has two main roles: the first role is to facilitate the communication process between all participants in the classroom, and between these participants and the various activities and texts.

The second role is to act as an independent participant within the learning-teaching group.

CLT PROCEDURES

CLT procedures often require teachers to acquire less teacher-centered classroom management skills.

It is the teacher's responsibility to organize the classroom as a setting for communication and communicative activities.

THE ROLE OF INSTRUCTIONAL MATERIALS

We will consider three kinds of materials currently used in CLT and label these text-based, task-based, and realia.

TASK-BASED MATERIALS

A variety of games, role plays, simulations, and task-based communication activities have been prepared to support Communicative Language Teaching classes.

CONCLUSION

Communicative Language Teaching is best considered an approach rather than a method.

CLT appealed to those who sought a more humanistic approach to teaching, one in which the interactive processes of communication received priority.

THANK YOU

Mr.P.Rajan - Communicative Language Teaching

MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 4/10/23

NAME OF PRESENTER: Prof. P. Rajan

TITLE : Communicative language teaching.

DURATION: 11.15 AM to 12.15 PM **TIME:** 1 hour.

S.NO.	NAME OF FACULTY	DESIGN./DEPT.	SIGNATURE
1.	Gowridaraj. M	AP/Mech	Gowridaraj.M
2.	[illegible]	Prof & HOD/EEE	[illegible]
3.	T. Parthiban	AP/Mech	Parthiban
4.	R Sujitha	AP/CSE	[illegible]
5.	VENKATESWARAN.C	AP/mech	[illegible]
6.	K. Priyadharshini	AP/IT	K. Priyadharshini
7.	M. SATHYA	AP/IT	M Sathya
8.	M. Gayathri	AP/CSE	[illegible]
9.	Dr. M. Saravanan	ASP/EEE	[illegible]
10	Dr. A. T. Priyesh Kumar	HOD/BME	[illegible]
11	A. Anjali	AP/CSE	[illegible]
12	T. RAMESH	AP/EEE	[illegible]
13	S. Manoj Kumar	AP/ECE	[illegible]
14	V. Rajakumara	AP/Mech	[illegible]
15	Dr. T. AKILA	~~ASP & Head~~ IT	[illegible]

16	Dr. T. RAJA	AP/Maths	T. Raja
17	Dr. A. [illegible]	ASP/PHY	[signature]
18	D. Naseem Banu	AP/English	[signature]
19.	Ramesh Kumar	AP/Mech	[signature]
20	Haridas. M	ASP/Mech	[signature]
21	P. RAJAN	AP/English	[signature]
22.	Dr. R. KARTHIKEYAN	AP/CHEM	[signature]
23	P. HARIHARASUDHAN	AP/MECH	[signature]
24	S. Kiruthika	AP IT	[signature]
25.	H. Kala	AP/BME	[signature]
26	S. THANGAPANDIYAN	AP/EEE	[signature]
27	T. GAJALAKSHMI	AP/IT	[signature]
28	Dr. R. REKA	ASP & Head/ AI & DS	[signature]
29	A. POOJAA	AP/ECE	[signature]
30	M. AYYANAR	AP/PHYSICS	[signature]
31	J. HELAN MARGRET JOY	HOD/CHEMISTRY	[signature]
32	Dr. D. VIDHYA	AP/MATHS	[signature]
33	G. Shyamala	AP/BME	[signature]

P. Ree 4/10/23
Signature of presenter

IQAC Co-ordinator

principal

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TAMIL NADU.

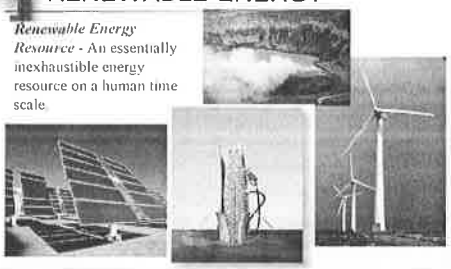
RENEWABLE SOURCES OF ENERGY

STEM-KNOWEDGE SHARING SESSION

By
Dr.M.HARIDASS
ASSOCIATE PROFESSOR
MECHANICAL ENGINEERING
MAHENDRA COLLEGE OF ENGINEERING

RENEWABLE ENERGY

Renewable Energy Resource - An essentially inexhaustible energy resource on a human time scale.



Solar Energy: Captured from the sun using photovoltaic cells or solar thermal systems. It can be converted into electricity or heat for various applications.
Wind Energy: Generated by harnessing the kinetic energy of wind through wind turbines, which convert it into electricity.
Hydropower: Produced by the flow of water, typically from rivers or dams, which drives turbines to generate electricity. This can include both large-scale hydroelectric dams and smaller micro-hydro systems.

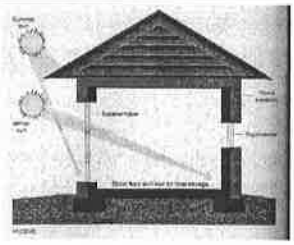
Geothermal Energy: Derived from the heat stored beneath the Earth's surface. It can be used for electricity generation or direct heating applications.
Biomass Energy: Comes from organic materials such as wood, agricultural crops, or waste. These materials can be burned directly or converted into biofuels like ethanol and biodiesel.
Ocean Energy: Includes tidal, wave, and ocean thermal energy. Tidal and wave energy are generated from the movement of water, while ocean thermal energy exploits temperature differences in ocean water.

PASSIVE SOLAR HEATING

Passive solar heating – captures sunlight directly with a structure and converts it to low-temperature heat for space heating.

Advantages	*Disadvantages*
1. save money	1. expensive for initial costs
2. create 2-5 more jobs/unit of electricity	2. aesthetically not pleasing
3. eliminate/reduce fossil fuels	3. latitude
4. less pollution	
5. less environmental damage	

PASSIVE SOLAR HEATING

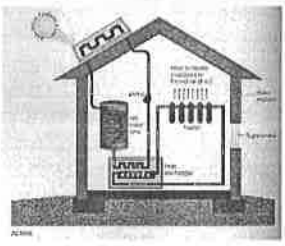


ACTIVE SOLAR HEATING

Active solar heating – specially designed collectors absorb solar energy and fan/pump distributes energy to parts of a building to meet space/water heating needs.

Advantages	*Disadvantages*
1. save money	1. expensive for initial costs
2. create 2-5 more jobs/unit of electricity	2. aesthetically not pleasing
3. eliminate/reduce fossil fuels	3. latitude
4. less pollution	
5. less environmental damage	

ACTIVE SOLAR HEATING



SOLAR POWER TOWER

Solar Power Tower –huge arrays of computer controlled mirrors that track the sun and focus sunlight on a central heat collection tower. (Mojave desert in California)

Advantages	*Disadvantages*
Cost will drop as	Costs 8X more to
Technology improves	build

SOLAR POWER TOWER

SOLAR THERMAL PLANT

1 ***Solar Thermal Plant*** – sunlight is collected and focused on oil-filled pipes that run through the middle of curved solar collectors

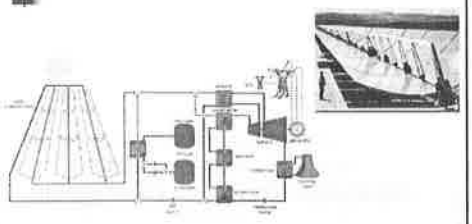
Advantages

1. Can generate temperatures high enough for industrial processes
2. can supply back-up electricity
3. cheaper than nuclear

Disadvantages

1. central receivers are expensive to operate

SOLAR THERMAL PLANT



SOLAR COOKER

1 ***Solar Cooker*** – focuses and concentrates sunlight in a box typically covered in glass to trap infrared radiation waves to cook food in rural villages in developing countries

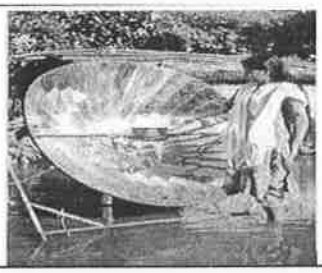
Advantages

Does not reduce deforestation

Disadvantages

2-4 hours to cook average meal

SOLAR COOKER



SOLAR HYDROGEN

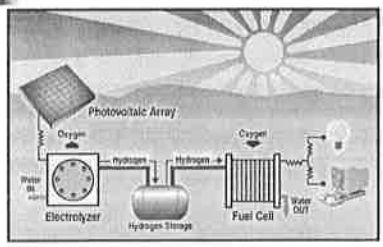
Solar-Hydrogen – Water can be split into gaseous hydrogen and oxygen.

It is in its infancy. So far... we can create fuel cells where hydrogen and oxygen combine to produce an electrical current, but it is difficult to store enough hydrogen gas in a fuel tank for very long

- Economics are "holding up" this technology.
- R&D from government needed
- must convince energy companies and investors to erore into this type of power and phase out fossil fuels

...Not Yet!

SOLAR HYDROGEN



India Builds World's Largest Solar Park at Bhadla in Rajasthan to Decarbonize Its Energy Production

Here are some of the key highlights of the Bhadla Solar:

Vast Scale: The area of the **solar power system** is 14,000 acres, which is great in itself.

Capacity: It generates 2,245 mW of power, which has no near match.

Location: The Thar desert is the right place for solar panel installation. The temperature varies between 46 °C to 48 °C.

Technological Innovation: Supplying power to 1 million homes is an achievement in itself. India is ready to step forward to generate 40% of the power generation from solar energy.

PM – Surya Ghar: Muft Bijli Yojana

- A government scheme that aims to provide free electricity to households in India
- The scheme was launched by Prime Minister Narendra Modi on February 15, 2024. Under the scheme, households will be provided with a subsidy to install solar panels on their roofs.

- The subsidy will cover up to 40% of the cost of the solar panels.
- The scheme is expected to benefit 1 crore households across India.
- It is estimated that the scheme will save the government Rs. 75,000 crore per year in electricity costs.

SCHEME BENEFITS

Suitable Rooftop Solar Plant Capacity for households

Average Monthly Electricity Consumption (units)	Suitable Rooftop Solar Plant Capacity	Subsidy Support
0-150	1-2 kW	₹ 30,000/- to ₹ 60,000/-
150-300	2-3 kW	₹ 60,000/- to ₹ 78,000/-
> 300	Above 3 kW	₹ 78,000/-

The benefits of the scheme include:

- Free electricity for households.
- Reduced electricity costs for the government.
- Increased use of renewable energy.
- Reduced carbon emissions.

ELIGIBILITY

- The household must be an Indian citizen.
- The household must own a house with a roof that is suitable for installing solar panels.
- The household must have a valid electricity connection.
- The household must not have availed any other subsidy for solar panels.

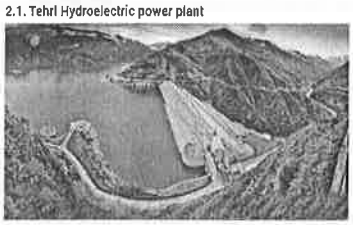
HYDROPOWER

1 ***Hydroelectric power plants*** – A dam is built across a large river to create a reservoir. The higher the head, the greater the amount of power that can be generated. Water is stored in a reservoir during low electricity production. Water is released and flows are controlled as electricity demands peak. Water spins the turbines in the "powerhouse". Electricity is distributed to end user.

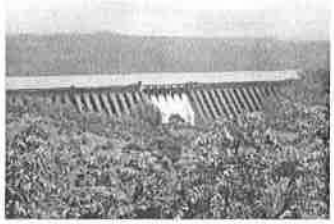
Examples – Aswan High Dam (Egypt) and Colorado River Basin (USA/Mexico)

Advantages	*Disadvantages*
1. Moderate to high energy yield	1. create floods
2. low operating/maintenance costs	2. destroys habitats
3. low air pollution	3. uproots people
4. 2-10 times longer life than othe 4. pesticides/algicides used	4. 2-10 x longer lifespan than other
5. Power sources	5. Decreases fish harvests

2.1. Tehri Hydroelectric power plant

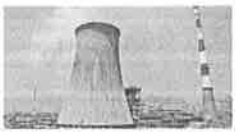


2.2. Koyna Hydroelectric Project



2.3. Sri Sailam Dam

HYDROPOWER



METTUR POWER STATION

Status	Commissioning year	Nameplate capacity	Turbines	Technology type	Owner
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

HYDROPOWER

Aswan
High Dam
Egypt

2 100 MW (2 800 000 hp)

TIDAL POWER

Tidal Power - power created from tidal energy

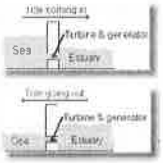
Advantages

1. tidal energy spins turbines

Disadvantages

1. few suitable sites
2. Construction costs high

TIDAL POWER

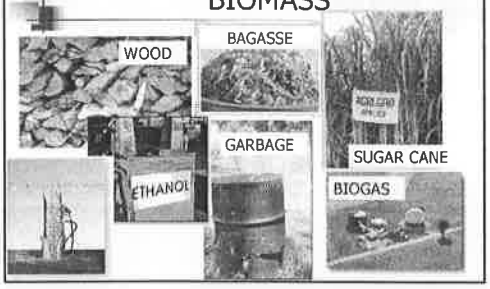


BIOMASS

Biomass – organic matter in plants produced through photosynthesis and can be burned directly as a solid fuel or converted into a gas or liquid fuel.

1. Burning wood
2. Agricultural Waste
   a. Bagasse (sugar cane residue)
   b. Straw
3. Urban Waste (WTE)
   a. burning garbage
4. Biofuels
   a. Biogas – a mixture of 60% methane and 40% carbon dioxide
   b. Liquid ethanol- (grain alcohol) – sugar + grain; mix gasoline + ethanol = gasohol which can burned in conventional gasoline engines (super-unleaded)

BIOMASS



BIOMASS

Advantages

1. potentially renewable resource
2. less air pollutants released
3. decrease in use of fossil fuels
4. moderate-high net energy yield

Disadvantages

1. removal of trees depletes soil nutrients
2. soil erosion (turbidity)
3. flooding
4. loss of wildlife habitats
5. large land areas needed
6. heavy pesticide/fertilizer use
7. reduces biodiversity
8. reduces ecological integrity

Ministry of New and Renewable Energy

Objectives

- Setting up of biogas plants for clean cooking fuel, lighting, meeting thermal and small power needs of users which results in GHG reduction, improved sanitation, women empowerment and creation of rural employment
- For production of Organic enriched Bio-manure: The digested slurry from biogas plants, a rich source of manure, shall benefit farmers in supplementing / reducing of use of chemical fertilizers
- To promote biogas based Decentralized Renewable Energy Sources of power generation (Off-Grid), in the capacity range of 3 kW to 250 kW or thermal energy for heating/ cooling applications from the biogas generation produced from Biogas plants above 25 M3 to 2500 M3 size

Central Financial Assistance (CFA) for Bio gas plant

For small biogas plants (1-25 cubic meter/day plant capacity): Rs. 9800/- to Rs. 70,400/- per plant based on size of the plant in cubic meter

For Power generation and thermal application (25 – 2500 cubic meter/day plant capacity): Rs. 35,000/- to Rs. 45,000/- per kilowatt for power generation and Rs. 17,500 /- to Rs. 22,500/- per kilowatt equivalent for thermal applications (25 – 2500 cubic meter/day plant capacity) (The eligible CFA would be 20% higher than Standard CFA in for NER, Island, Registered Gaushalas and SC/ST beneficiaries)

GEOTHERMAL

Geothermal Energy - Heat contained in underground rocks and fluid that can be tapped for energy.

➢Extract dry steam, wet steam or hot water and can be used to heat space or water.

➢"Potentially renewable resource"

➢22 countries currently use geothermal, it supplies 1% of world energy. In the USA (44% geothermal energy produced worldwide) geothermal electricity is produced mostly in Hawaii, California, Nevada, and Utah.

GEOTHERMAL

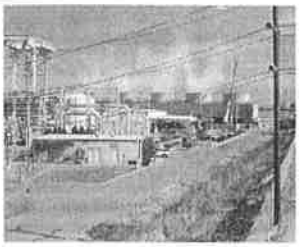
Advantages

1. Reliable
2. Renewable
3. Moderate Net Energy Yield
4. 96% less CO_2 emitted
5. Competitive Cost

Disadvantages

1. Scarcity of reservoirs
2. Deforestation to build plants
3. Land subsidence
4. Noise, odor

GEOTHERMAL



SOLUTIONS FOR SUSTAINABLE ENERGY

✓Improve energy efficiency

✓Increase local availability of renewable energy resources

✓Find transitional resources (natural gas, nuclear)

✓Government must promote R&D for alternative renewable energy resources

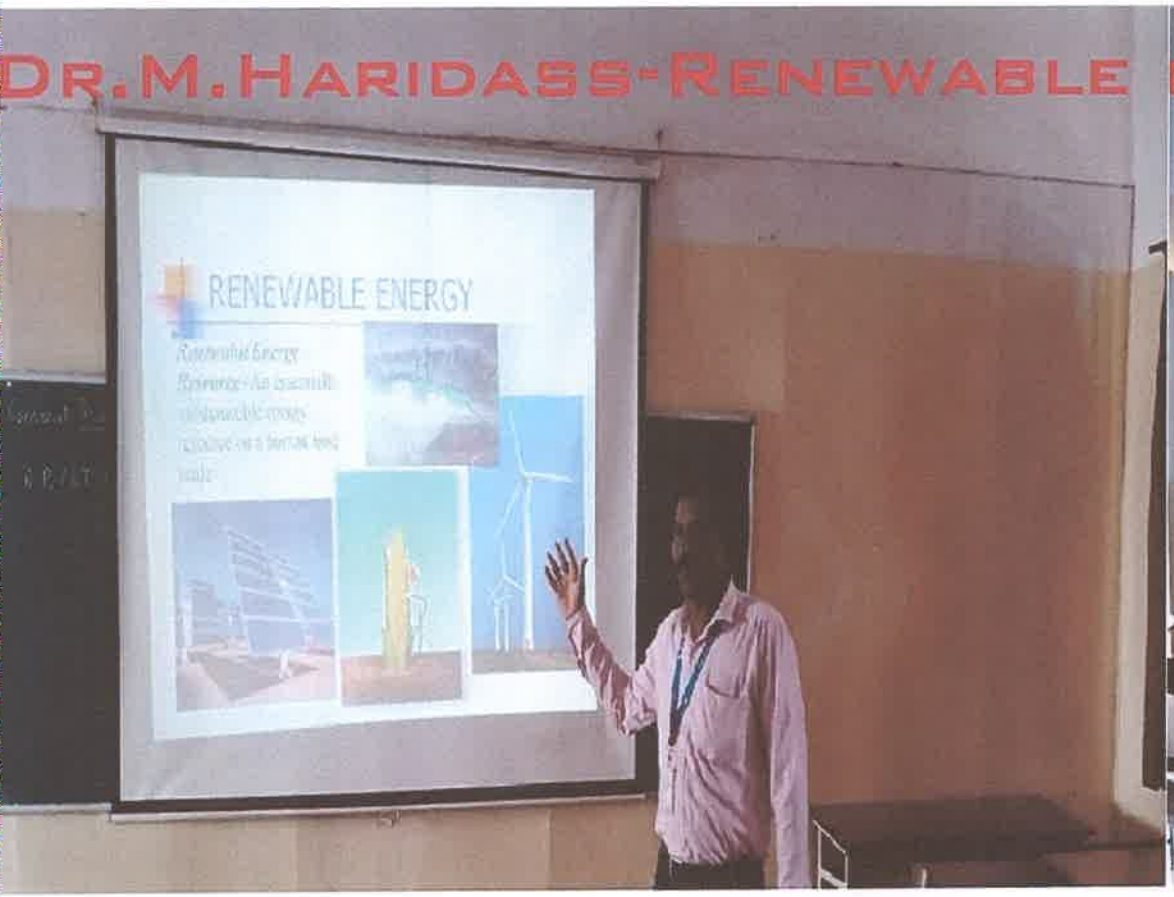
✓Educate the public

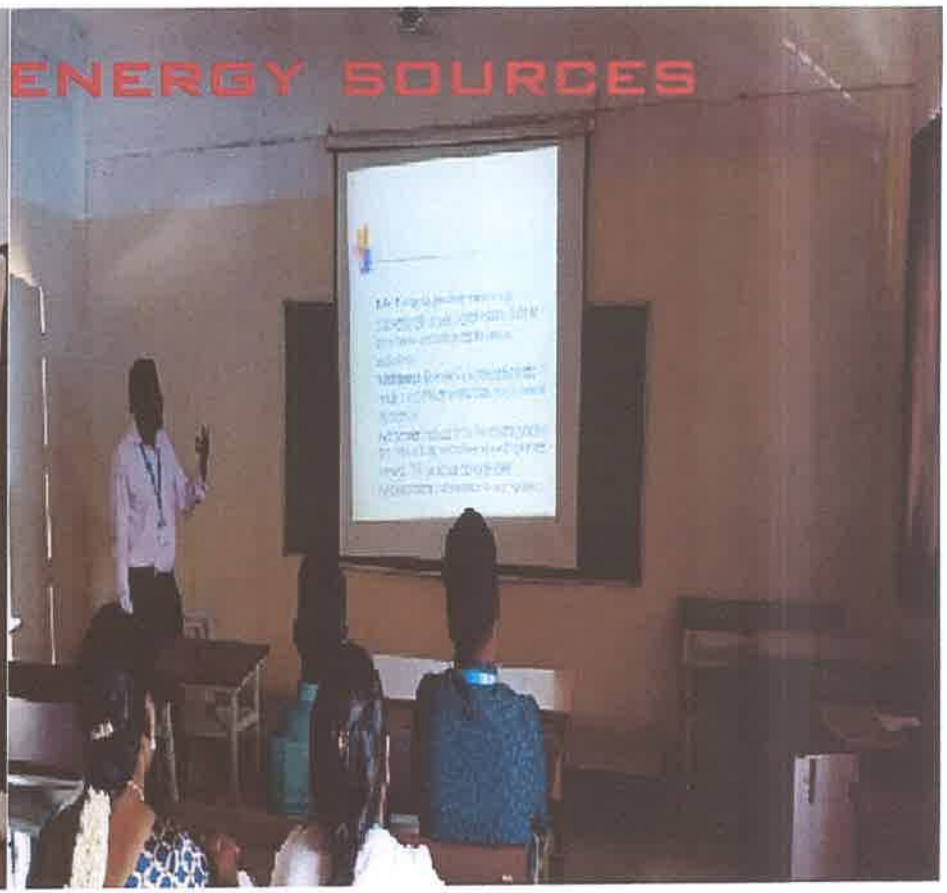
✓All energy resources should compete in an open, free-market with NO government control!

✓Government needs to implement constructive subsidies not destructive subsidies to promote change, this will lead to ***conservation of resources and less over-consumption.***

Queries

Dr.M.Haridass-Renewable energy sources





MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 11/10/23

NAME OF PRESENTER: Dr. M. Haridass

TITLE : Renewable sources of energy.

DURATION: 11.45 AM to 12.00 Noon **TIME:** 45 Minutes.

S.NO.	NAME OF FACULTY	DESIGN./DEPT.	SIGNATURE
1.	A. Anjaleh	AP/CSE	
2.	Dr. M/s. Saravanan.	ASP/EEE	
3	Dr. M. Suganthi	Prof & HOD/EEE	
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5.	M SATHYA	AP/IT	
6.	R. Sujitha	AP/CSE	
7.	P. HARIHARASUDHAN	AP/MECH	
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18	M Gayathri	AP/CSE	
19	T. GAJALAKSHMI	AP/IT	T. Gajalakshmi
20	M. Azhagar	AP/Physics	M. Azhagar
21	VENKATESHWARAN C	AP/mech	
22	K. Priyadharshini	AP/IT	K. Priya
23	S. Kiruthika	AP/IT	S. Kiruthika
24	Dr. D. VIDHYA	AP/MATHEMATICS	
25	Dr. R. KARTHIKEYAN	AP/CHEMISTRY	R. Karthikeyan
26	Dr. A. Prabhu	ASP/PHY	A. Prabhu
27	D. Naveen Bama	AP/English	
28	DR. T. RAJA	AP/Maths	T. Raja
29	H. Kala	AP/BME	H. Kala
30	A. POOJAA	AP/ECE	
31.	Dr. R. REKA	ASP & Head/AI & DS	R. Reka

11/10/23

Signature of presenter

IQAC Co-ordinator

principal

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TAMIL NADU.

How to Write a Successful Project Proposal to Funding Agencies ?




Dr.M.S.Saravanan
Associate Professor
Dept. of EEE

Research Needs....

- Interest
- Motivation
- Academic Support
- Administrative Support
- Financial Support
- Subordinates Support
- Family level Support
- Health and Age

Ideas in research

- Discovery / Invention (Search and Re search)
- Searching in journals / books / Web pages
- Re-searching problems
- Identification of thrust areas
- Expertise in fields
- Available facilities
- Mission of his/her organization
- Innovative thinking

1)In India the main Government agency responsible for funding is Department of Science and Technology (DST) Ministry of Science and Technology Government of India

2) Also there are other agencies giving grants in specified areas e.g., Indian Council of Agriculture Research, Indian Council of Medical Research, Ministry of Health, Food, etc.,

3) While application forms and processes may be different for these agencies the concepts are all similar in that you must compete for funds before peer review panels.

List of Funding agencies in India

- Department of Science and Technology
- All India Council for Technical Education
- University Grants Commission
- Council of Scientific and Industrial Research
- Defence Research and Development Organization
- Department of Atomic Energy
- Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoepathy
- Department of Biotechnology
- Department of Coal
- Ministry of Earth Sciences
- Indian Council of Medical Research

Continued...

- India Meteorological Department
- Indian Space Research Organization
- Ministry of Communications & Information Technology
- Department of Information Technology
- Ministry of Environment and Forests
- Ministry of Food Processing Industries
- Ministry of New and Renewable Energy
- Ministry of Power, Central Power Research Institute
- Ministry of Social Justice & Empowerment
- Ministry of Water Resources
- Petroleum Conservation Research Association

Ministries Level Funding

- Building Material & Technology Promotion Council
- Ministry of Education
- Ministry of Environment
- Ministry of Human Resource Development
- Ministry of Non-conventional Energy Sources
- Ministry of Rural Development
- Ministry of Science and Technology
- Housing and Urban Development Corporation
- Indian Council of Philosophical Research
- Indian Navy
- Indian Renewable Energy Development Agency
- National Wasteland Development Board

Arts Teachers

- ICSSR(Indian Council of Social Science Research)- New Delhi
- CIIL(Central Institute of Indian Languages)-Language Research
- Indira Gandhi National Centre for Arts
- International Bodies
- Concerned Govt. Departments & Industries
- UGC

All India Council for Technical education (AICTE), New Delhi

Research Schemes

- Nationally Coordinated Project
- National Facilities in Engineering & Technology with Industrial Collaboration
- Research Promotion Scheme
- Scheme for Modernization and Removal of Obsolescence In Technical Education
- Entrepreneurship Development Cell
- Industry Institute Partnership Cell

Faculty Schemes

- Staff Development Programme
- National Doctoral Fellowship
- Post Graduate Scholarship
- Professional Bodies & Societies
- Seminar Grant
- Travel Grant
- Visiting Professorship
- Career Award for Young Teachers
- Emeritus Fellowship

Awards

- Carrier Award for Young Teacher
- National Post Doctoral Fellowship
- Post Graduate Scholarship
- Visiting Professorship
- DST Young Scientist Fellowship
- Early Career Research
- TNSCST Young Scientist Fellowship
- Start up Grant

Tamil Nadu State Council for Science and Technology (TNSCST), Chennai

- Student Project Schemes
- TNSCST Young Scientist Fellowship
- Tamil Nadu Scientist Award
- International Travel Support Scheme
- Popularization of Science, Engineering and Technology Scheme
- Support for Seminars / Conferences / Workshops

Student Fellowship

1. Junior Research Fellowship
2. Senior Research Fellowship
3. Research Associate Fellowship
4. Indira Gandhi Single Child Fellowship
5. Jawaharlal Nehru Doctoral Fellowship
6. AICTE Doctoral Fellowship
7. SERB Post Doc
8. JNU Doctoral Fellowship
9. Summer Research Fellowship by IASc

UGC, NewDelhi

Start up Grant
Mid Career Award

SERB, NewDelhi

Core Research Grant
Early Career Research
Ayurvedic Biology Programme
Industry Relevant R&D
Fellowships, Awards, Schemes

International Funding sources

- http://dmoz.org/Science/Institutions/Research_Funding_Organizations
- Research funding organizations
  http://ss.epa.gov/nceer
- National Center for Environmental Research - Grant proposal site
  http://fundingopps.cos.com
- The most comprehensive source of funding information available on the Web, with more than 23,000 records, representing over 400,000 funding opportunities, worth over $3 billion.
  http://newsvine.sciencemag.org/europe
- International Index of Grants and Fellowships

- http://research.umbc.edu/grants/index.asp?document=external-sources
- External funding agencies - funding databases, Social Sciences and Humanities funding sites, Science and Technology research sites, Health and Social Science development sites

- http://sarn.ssrc.org/centers/western.shtml
- South Asian Research Network for Social Sciences and Humanities

Requirements

- Ph.D., degree
- Proper objectives
- Selection of funding agency
- Two publications in the related topic
- Social relevance of the project
- Total budget requirements
- Earlier project experience if any
- Research capabilities
- Similar line work done so far
- Patent / Copy Rights (Not Mandatory)

How to get financial assistance - research

Hard Work
vs
Smart Work

Proposal Writing

It is like a game

What makes for a successful proposal writer?

Writing a Grant Proposal is like Playing a Game

- You have to play by the Rules
  - **Get** the (most recent) guidelines
  - **Read** the guidelines
  - **Follow** the guidelines

What Makes a Good Proposal (& hopefully a successful proposal!)

Writing Issues

- **Disturb/Irritate**
  - » Spelling errors
  - » Over using technical terms (Do not use synonymous)
  - » Using acronyms
- **Confuse**
  - » Writing overly complex sentences
  - » Failing to attend to paragraph coherence issues
  - » Using passive voice
- **Reduce Credibility**
  - » Failing to address criteria
  - » Abstract, problem statement, budget disconnect
  - » Failing to address assessment and administration

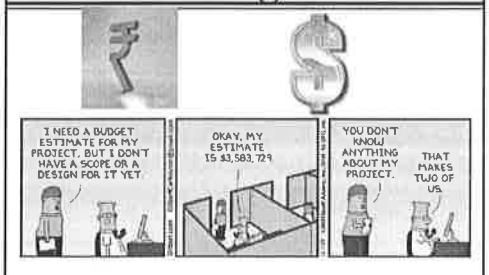
Title of Research Project

- **Good**
  - » Concise title that gives reviewer a general sense of what you are investigating.
  - » For example:
    - Role of the role anti-cell death proteins in brain cancers.

Title of Research Project

- **Reject**
  - » Too long and technical of a title will not gain the reviewer's attention or interest.
  - » Too short and broad a title will make the reviewer too critical of grant.
  - » Example:
    - Determining the mechanism of action of Bcl-2 family members in regulating apoptotic signaling complexes within the mitochondria leading to a cure in cancers

Budget



Budget:

- **Good**
  - » Give a detailed account of where you will be spending the money.
  - » Approximately one third of the budget should go to supplies.
- Reject
  - » Graduate students should not be used in budget support since it is an easy target for reduction due to alternative funding sources.
  - » Do not justify spending all the budget on personnel.

Some Characteristics of Well-written, Fundable Proposals

- Innovation
- Relevance
- Demonstrated Competence
- Feasibility Study
- Time Schedule
- Enthusiasm
- Simple Straight forward Language
- Complete Literature Search

Top 10 Reasons for an Unsuccessful Proposal

1. Project doesn't address agency priorities
2. Guidelines not followed
3. Not a compelling idea
4. Ideas not clearly presented
5. Methodology appears to be flawed
6. Overuse of jargon
7. Overly ambitious
8. Narrative and budget don't correspond
9. Sloppy presentation
10. The work has already been done

If your proposal is rejected. . .

- Don't give up!
- Get reviews
- Talk to agency contact
- Re-evaluate, revise and resubmit
- Look for other potential funders

General Thoughts

- Reviewers will not be experts in your field of research. Make the proposal accessible to them.

- **Get your proposal read by a colleague or someone in your area of research. They might find problems that reviewers will find.**

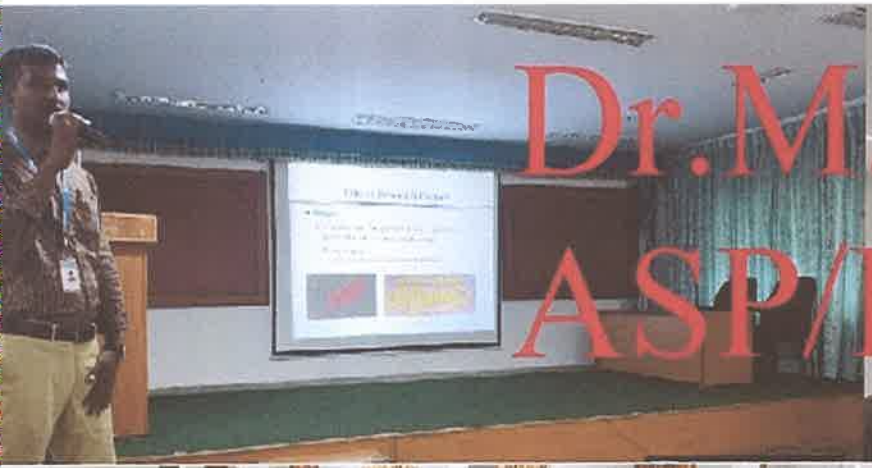
Conclusion

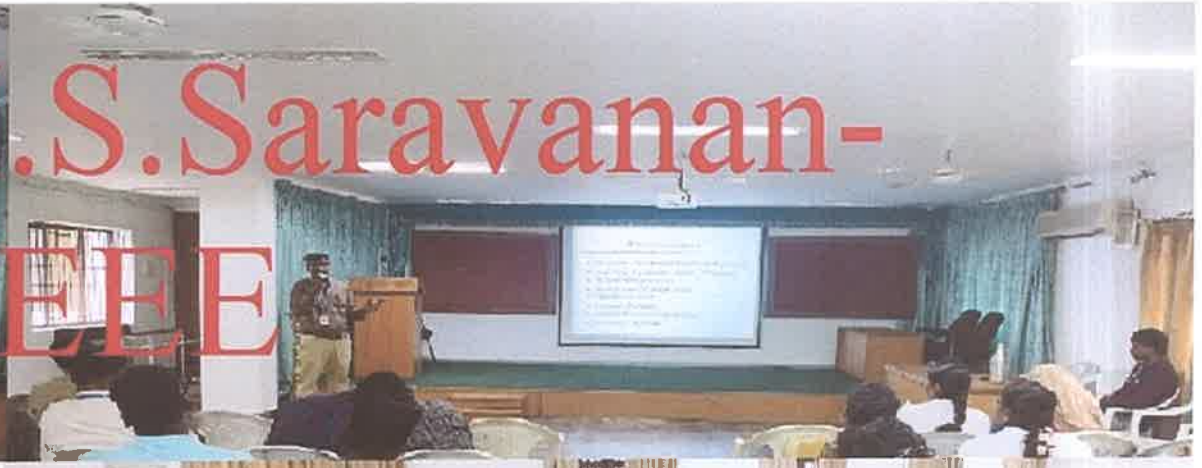
✓**Discussed about various funding agencies Project Proposal Preparation SWOT Analysis of Proposals.**

THANK YOU

Any queries …

I think its Eye opening session!!





Dr.M.S.Saravanan-ASP/EEE

MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 18/10/23

NAME OF PRESENTER: Dr. M.S. Saravanan

TITLE : How to Write a Sucessful Project proposal to funding agencies.

DURATION: 11.45 AM to 12.05PM **TIME:** 50 Minutes

S.NO.	NAME OF FACULTY	DESIGN./DEPT.	SIGNATURE
1.	T. Parthiban	AP/Mech	T. Parthiban
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4.	R Sujitha	AP/CSE	
5	S. Manoj Kumar	AP/ECE	
6.	R. Swaminathan	AP/PHY	
7.	Dr. M.S. Saravanan	ASP/EEE	
8.	P. Harikrishnan	AP/Mech	
9	J. Mani	AP/English	
10	S. Thangaparvya	AP/ECE	
11	Dr. T. AKILA	ASP/IT	
12	Dr. A.T. Priyesh Kumar	HOD/BME	
13	T. Ramesh	AP/EEE	
14	V. Rajakumaran	AP/Mech	
15	G. Shyamala	AP/BME	

16	Dr. D. VIDHYA	AP/MATHS	[signature]
17	Dr. R. KARTHIKEYAN	AP/CHEMISTRY	R. Karthikeyan
18	P. RAJAN	AP/English	[signature]
19	J. Helan margret Joy	AP/Che	[signature]
20	Dr. A. Prabhu	ASP/PHY	[signature]
21	H. Kala	AP/BME	[signature]
22	T. GAJALAKSHMI	AP/IT	T. Gajalakshmi
23	M. Ayyanar	AP/Phy	M. [signature]
24	Haridass. M	ASP/Mech	[signature]
25.	K. Priyadharshini	AP/IT	K. Priya
26	VENGATESWARAN C	AP/mech	[signature]
27	M. SATHYA	AP/IT	M. Sathya
28	Dr. R. REKA	ASP & Head/ AI & DS	[signature]
29.	M. Gayathri	AP/CSE	[signature]
30.	A. POOJAA	AP/ECE	[signature]
31	Dr. T. RAJA	AP/maths	T. Raja
32	S. Kiruthika	AP/IT	S. [signature]
33	A. Anjali	AP/CSE	[signature]

18/10/23 Signature of presenter

18/10/23 IQAC Co-ordinator

principal

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Mahendra College of Engineering
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Present by
Dr.C.PRABHU., AP-MECH
MAHENDRA COLLEGE OF ENGINEERING, SALEM.
STEM SESSION
DATE : 02.09.2024

General Awareness

The average human brain is about 1400 cubic centimetres in size and weighs around 3 pounds (1300 to 1400 grams). It's about the and makes up about

Mechanically,

$S = P > R$

Stress occurs when the pressure is greater than the resources

- Worry
- Tense
- Tired
- Frightened
- Elated - very happy and excited
- Depressed
- Anxious - worried and afraid
- Anger

- External
- Internal

- Physical Environment
- Social Interaction
- Organisational
- Major Life Events
- Daily Hassles – Irritating inconvenience.

- Noise
- Bright Lights
- Heat
- Confined Spaces

- Rudeness - lack of manners
- Bossiness - the quality of being domineering
- Aggressiveness by others
- Bullying - unwanted, aggressive behaviour

- Rules
- Regulations
- "Red - Tape" - Official routine or procedure marked by excessive complexity which results in delay or inaction.

- Birth
- Death
- Lost job
- Promotion
- Marital status change

- Commuting - to travel regularly a distance between work and home.
- Misplaced keys
- Mechanical breakdowns

- Lifestyle choices
- Negative self - talk
- Mind traps – habitual (repeatedly) ways of thinking that can affect your mood.
- Personality traits - characteristics that describe how a person thinks, feels, and behaves.

- Caffeine - a drug that stimulates (increases the activity of) your brain and nervous system.
- Lack of sleep
- Overloaded schedule

- believe that the worst will happen.
- Self criticism
- Over analysing

- Unrealistic expectations
- Taking things personally
- All or nothing thinking
- Exaggeration- Representation of something as more extreme.
- Rigid thinking

- Perfectionists
- Workaholics - work together as telemarketers from 9 to 5, and live together from 5 to 9.

- Negative stress
- Positive stress

It is a contributory factor in minor conditions, such as headaches, digestive problems, skin complaints, insomnia and ulcers.

Excessive, prolonged and unrelieved stress can have a harmful effect on mental, physical and spiritual health.

Stress can also have a positive effect, spurring motivation and awareness, providing the stimulation to cope with challenging situations.

Stress also provides the sense of urgency and alertness needed for survival when you are in confront and threatening situations.

- Physical symptoms
- Mental symptoms
- Behavioural symptoms
- Emotional symptoms

- Sleep pattern changes
- Fatigue
- Digestion changes
- Loss of sexual drive
- Headaches
- Aches and pains
- Infections
- Indigestion
- Dizziness (Giddiness)
- Fainting-loss of consciousness
- Sweating & trembling
- Tingling hands & feet
- Breathlessness
- Palpitations (Abnormal heat beat)
- Missed heartbeats

- Lack of concentration
- Memory lapses
- Difficulty in making decisions
- Confusion
- Disorientation
- Panic attacks

- Appetite changes - too much or too little
- Eating disorders - anorexia, bulimia
- Increased intake of alcohol & other drugs
- Increased smoking
- Restlessness
- Fidgeting - small movements with your body – shaking of fingers and legs.
- Nail biting
- Hypochondria- a chronic mental illness

- Bouts of depression - period of depression that can last for at least two weeks.
- Impatience
- Tearfulness
- Deterioration of personal hygiene and appearance

Stress is not the same as ill-health, but has been related to such illnesses as;

- Cardiovascular disease
- Immune system disease
- Asthma
- Diabetes

- Digestive disorders
- Ulcers
- Skin complaints - psoriasis
- Headaches and migraines
- Pre-menstrual syndrome
- Depression

80% of all modern diseases have their origins in stress.

In the UK, 40 million working days per year are lost directly from stress - related illness.

Costs in absenteeism to British industry is estimated at £1.5 billion pounds per year.

- Meditation and Yoga
- Dance
- Aerobic exercise
- Deep sleeping
- Laughing
- Deep breathing
- Healthy diet

- https://www.youtube.com/watch?v=Nyi4GckebGA

Those who are crossing the age

- Diabetic test- FBS- Normally less than100 mg/dL
  PPBS- Normally less than140 mg/Dl
  HbA1c - Between 4% and 5.5%
- Lipid profile test
- ECG
- LFT

Dr.C.Prabhu-Stress Managment

MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 8/11/23

NAME OF PRESENTER: Dr. C. Prabhu.

TITLE: Stress Management & Effect of Stress.

DURATION: 11.45 Am to 12.30 Noon **TIME:** 45 Minute

S.NO.	NAME OF FACULTY	DESIGN./DEPT.	SIGNATURE
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3.	Dr. T. AKILA	ASP & Head/IT	[signature]
4	R. Sujitha	AP/CSE	[signature]
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20	Mr Ayyanar	AP/Physics	
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8/11/23

Signature of presenter

IQAC Co-ordinator

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Hearty Welcome you all to "STEM"

தொட்டனைத் தூறும் மணற்கேணி மாந்தர
்க்குக்
கற்றனைத் தூறும் அறிவு .

Behind and Beyond 5G

Presented by
Dr.P.N.Palanisamy
AP/ECE

Generation of Networks

- **0th Generation:** radio telephones @ cars
- **1st Generation:** First-time calling was introduced in mobile systems-analog signals.
- It used an FDD- Frequency Division Duplexing scheme and typically allocated a bandwidth of 25 Mhz.
- Speed:- 2.4 Kbps.

Cont..

- **2nd Generation:** Shifted from analog to digital & it supports voice and SMS.
- Speed:- 64 Kbps.
- **2.5G- GPRS, 2.75 G (EDGE)- Enhanced Data rate of GSM Evolution**

Cont..

- **3rd Generation:** The Internet system was improved- high speed.
- The connection used was UMTS- Universal Mobile Telecommunications System and WCMA.
- Speed:- 2Mbps.

4G

- **4th Generation:** IP-based protocols.
- LTE (Long term evaluation) was mainly for the internet.
- Vo-LTE (Voice over LTE) is for both voice and the internet.
- Freedom and flexibility to select any desired service with reasonable QoS.
- Supports multimedia service at a low transmission cost with HD Quality streaming.
- Speed:-100Mbps.

Cont..

- A 4G connection works via an antenna that transmits over radio frequencies, which lets mobile devices connect to mobile networks.

Need of 5G

- To meet the growing demand for faster, more reliable, and more connected experiences.
- Massive growth of IoT.
- Digital shift

Features of 5G

- Though it is yet to come in many countries but here are some notable points about 5G.
- Higher data rates 20 Gbps.
- Connectivity will be more fast and more secure,
- Data Latency will be reduced to a great level.
- Massive network capacity.
- It is 30 times faster than 4G.
- There would be more flexibility in the network.

How 5G works?

5G Architecture

- Standards bodies defining 5G architecture include the Third Generation Partnership Project, ITU, and 5G Infrastructure Public Private Partnership.
- 5G networks will have more base stations closer together, which will lessen the demand on any single base station.
- 5G networks will be highly virtualized, using SDN and network functions virtualization to enable backhaul to cloud edge deployments so traffic is spending less time on the network infrastructure.

Radio Access Network

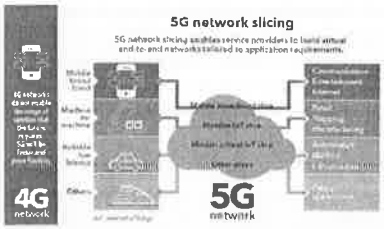
Small Cells and **Macro Cells-** The 5G Small Cells are located in big clusters because the millimeter wave spectrum can only travel over short distances. These Small Cells complement the Macro Cells that are used to provide more wide-area coverage.

MIMO- (Multiple Inputs, Multiple Outputs) antennas which have multiple connections to send and receive large amounts of data simultaneously. This means that more users can connect to the network simultaneously.

Core Network

- The Core Network manages all the data and internet connections for the 5G Wireless Technology.
- A big advantage of the 5G Core Network is that it can integrate with the internet much more efficiently and it also provides additional services like *cloud-based services, distributed servers* that improve response times, etc.
- Another advanced feature of the Core Network is *Network Slicing*.

Cont..



Network Slicing

- Mobile operators will be able to create multiple virtual networks using a single physical 5G network.
- So in this futuristic scenario, if you are inside a self-driving car, then a virtual network with an extremely fast, low-latency connections would be required because obviously the car needs to navigate in real-time.

Network Functions Virtualization

- Network Functions Virtualization (NFV) is the decoupling of network functions from proprietary hardware appliances and running them as software in Virtual machines (VMs).
- The different functions — such as firewalls, traffic control, and virtual routing — are called virtual network functions (VNFs)

Software Defined Networking

- Software-defined networking (SDN) is the separation of the control functions from the forwarding functions, which enables greater automation and programmability in the network.
- It is often paired with network function virtualization (NFV), which separates network functions from hardware in the form of virtualized network functions (VNFs).

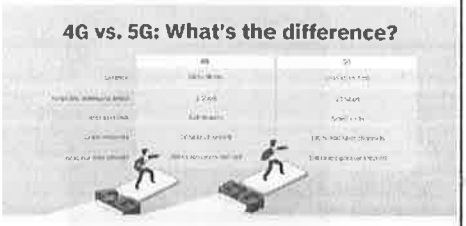
Cont..

- 5G also introduces another new standard called 5G New Radio (5G NR) that aims to replace LTE.
- 5G NR builds off LTE's best capabilities and brings new benefits, such as increased energy savings for connected devices and enhanced connectivity.

Cont..

- 5G can also operate on a new high-frequency spectrum -- millimeter wave (mm Wave) -- which operates on wavelengths between 30 GHz and 300 GHz, compared to 4G LTE's wavelengths of under 6 GHz.
- Due to the mm wave spectrum, 5G requires new small cell base stations to operate and function.

Key difference



Base stations

- The key difference between 4G and 5G is the base station required to transmit signals. Like its predecessors, 4G transmits signals from cell towers.
- However, 5G uses small cell technology, due to its faster speeds and mmWave frequency bands, carriers are deploying high-band 5G in small cells about the size of pizza boxes in multiple locations.
- 5G still uses cell towers for its lower-frequency spectrums as well.

OFDM

- OFDM splits different wireless signals into separate channels to avoid interference, which also provides greater bandwidth.
- OFDM encodes data on different frequencies, this can bolster 4G and 5G download speeds, as these networks would have their own signal channels rather than a shared one between them.
- 4G uses up to 20 MHz channels, while 5G uses 100 MHz to 800 MHz channels.

Cell density

- Small cell technology enables 5G to provide more cell density and enhance network capacity.
- 5G networks have increased density, which means they have more capacity to support more users and connected devices, leading to increased mobile device and connection capacity.

Applications of 5G

- Wearable devices with AI
- Global Networks
- Independent Handover
- Voice over IP enabled devices

Beyond 5G

6G

- 6G networks will be able to use higher frequencies than 5G networks and provide substantially higher capacity and much lower latency.
- The 6G technology market is expected to facilitate large improvements in the areas of imaging, presence technology and location awareness. Working in conjunction with artificial intelligence (AI), the 6G computational infrastructure will be able to identify the best place for computing to occur; this includes decisions about data storage, processing and sharing.

- 6G networks will operate by using signals at the higher end of the radio spectrum.
- With 6G, access points will be able to serve multiple clients simultaneously via orthogonal frequency-division multiple access.
- The use of sub-mm waves -- wavelengths less than 1 millimeter -- and frequency selectivity to determine relative electromagnetic absorption rates is expected to advance the development of wireless sensing technology.

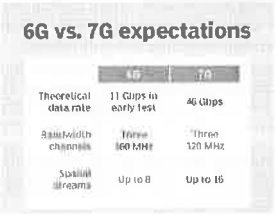
- Mobile Edge Computing will be built into all 6G networks, whereas it must be added to existing 5G networks.
- Edge and core computing will be more integrated as part of a combined communications and computation infrastructure framework by the time 6G networks are deployed.

- Technology makes greater use of the distributed Radio Access Network (RAN) and the Terahertz (THz) spectrum to increase capacity, lower latency and improve spectrum sharing.

7G

- 7G technology will represent a quantum leap in bandwidth to support ultradense workloads.
- For example, 7G has the potential to enable continuous global wireless connectivity via integration in satellite networks for earth imaging, telecom and navigation.
- Enterprises could implement 7G to automate manufacturing processes and support applications that require high availability, predictable latency or guaranteed quality of service.

6G vs 7G



- Deliver data up to 46 Gbps -- more than four times the rate of 6G projection;
- Double the size of the channel to 320 MHz
- Afford 16 spatial streams, compared to eight in 6G.

"There is no wealth like knowledge, no poverty like ignorance".

QUERIES


Dr.P.N.Palanisamy
GPS Map Camera

MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 29.11.23

NAME OF PRESENTER: Dr. P.N. Palanisamy

TITLE : Behind and Beyond 5G

DURATION: 11.45 AM to 12-00 N **TIME:** 45 Minutes

S.NO.	NAME OF FACULTY	DESIGN./DEPT.	SIGNATURE
1	K. Priyadharshini	AP/IT	K. Priya
2	M. SATHYA	AP/IT	M Sathya
3	M. Gayathri	AP/CSE	
4	Dr. D. VIDHYA	AP/MATHEMATICS	
5	R. Swaminathan	AP/PHY	
6	Dr. R. KARTHIKEYAN	AP/CHEM	R. Karthikeyan
7	S. Thangapandiyan	AP/EEE	
8	J. Helan Margret Joy	AP/Che	
9	P. HARIHARASUDHAN	AP/MECH	P Hari
10	V. Rajakumaran	AP/mech	Raja
11	P. RAJAN	AP/English	
12	Dr. A.T. Priyeshkumar	HOD/BME	A.T. Priyeshkumar
13	Dr. T. AKILA	ASP & Head/IT	
14	H. Kale	AP/BME	
15	G. Shyamala	AP/BME	

16	S. Kiruthika	AP/IT	S. Kiruthika
17	Dr. M. Saravanan	ASP/EEE	M.S.
18	T. GAJALAKSHMI	AP/IT	T. Gajalakshmi
19	A. Naren Baa	AP/English	
20	Dr. M. SUGANTHI	Prof & HOD/ECE	
21	DR. T. RAJA	AP/Maths	T. Raja
22	A. Anjali	AP/CSE	
23	A. POOJAA	AP/ECE	
24	T. RAMESH	AP/CSE	
25	Dr A. Rabby	ASP/Phy	
26	Dr. R. REKA	ASP & Head/AI & DS	
27	S. Manoj Kumar	AP/ECE	
28	R Sujitha	AP/CSE	

P. N. Palanisamy 29/11/23

Signature of presenter

IQAC Co-ordinator

principal

PRINCIPAL
Mahendra College of Engineering
Mahendra Salem Campus,
Minnampalli, SALEM-638 106.

Effective Communicative Skills for Classroom

by
Dr.B.Balaji

"One Child, One Teacher, One Pen and One Book can Change the world" – Malala Yousafzai

Two kinds of teachers

1. Gurus – one who teach the subject
2. Sub-Gurus – *one who teach the subject, as well as*
one who Teach the life, character of the students. One who mould the students make them all rounder.

Effective Classroom Communication

1. Language Skills
2. Body Language
3. Teaching Skills
4. Interaction Skills
5. Teach Effectively

Language Skills

1. Use Good Language
2. Rich in Vocabulary
3. Fluent in language
4. Pronunciation is important
5. Use interesting & Variety of language in teaching

Language Skills

Teacher should be clear in their Language.
Avoid ambiguity in words or ambiguity in sentence in the classroom teaching.

Language Skills

Example for Ambiguity

Language Skills

In English language – even the punctuation makes a vital role.

Language Skills

Hang him not leave him.

Language Skills

Hang him not, leave him.

Language Skills

Hang him, not leave him.

- I am going to sell my property along with my wife.
- நான் என் சொத்தை விற்கப் போகிறேன் என் மனைவியுடன் சேர்ந்து.
- I am going to sell my property, along with my wife

சொத்தை விற்கப் போகிறேன், என் மனைவியுடன்.

Body Language

1. *Posture*
2. *Gestures*
3. *Facial expression*
4. **Eye contact**
5. **Active movement**
6. **Physical distance**

Effective Teaching Skills

1. ***Draw & hold attention***
2. ***Express ideas clearly***

Teach Effectively

1. *Motivate the students*
2. *Speak slowly and clearly*
3. *Appreciate the students*
4. *Make things simple for the students*
5. *Involve all the students*
6. *Accept individual differences*

Teach Effectively

7. *Focus on Average or Below Average students*
8. *Teach with Affection*
9. *Revision – yesterday's Class*
10. *Patience*
11. *Remove the fear of the student*

Displacement - defense mechanism

Teacher should not use defense Mechanism like

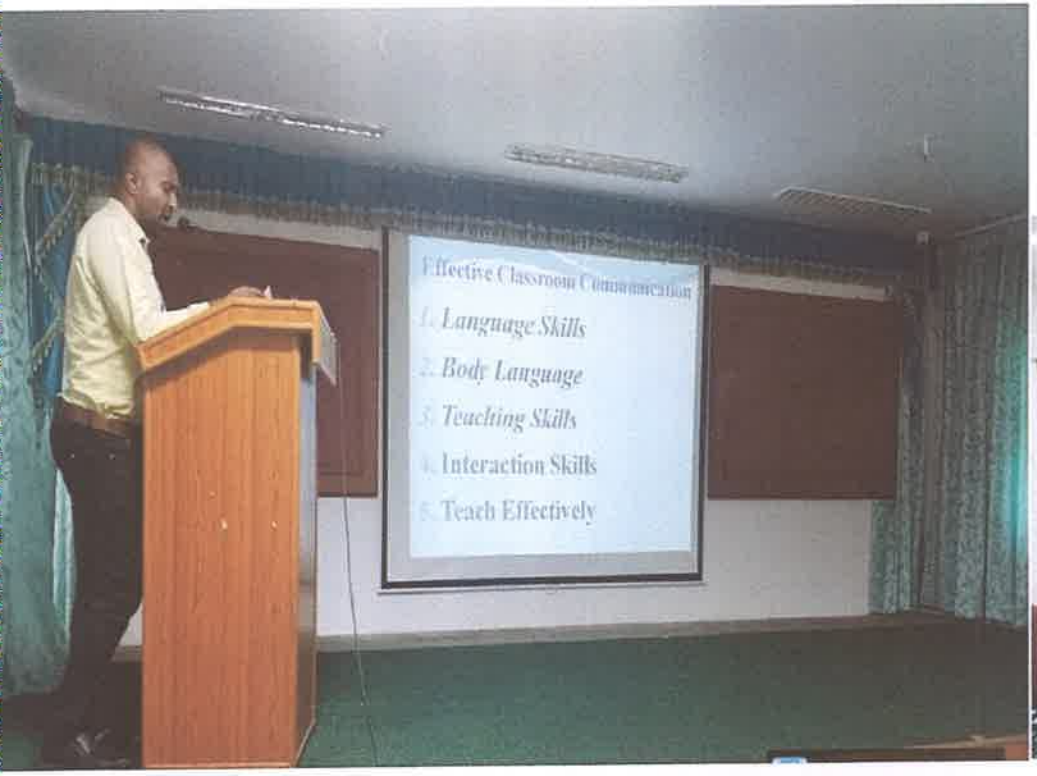
DISPLACEMENT

in their class room teaching

Know your student / study your student mind

Be a best human
Be a best person
Be a best teacher / professor

Thank you all



Dr.B.Balaji,AP/ENGLISH

Effective Communicative Skills for Class room

MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 6/12/23

NAME OF PRESENTER: Dr. B. Balaji

TITLE : Effective Communicative skills for class room.

DURATION: 11.45 AM to 12.05 pm **TIME:** 50 Minutes

S.NO.	NAME OF FACULTY	DESIGN./DEPT.	SIGNATURE
1	T. GAJALAKSHMI	AP/IT	
2	Dr. M. SUGANTHI	Prof & HOD/ECE	
3	A. Anjath	AP/CSE	
4	R. Sivaraman	Dean/Phys	
5	V. Rajakumaran	AP/mech	
6	Dr. R. KARTHIKEYAN	AP/CHEMISTRY	
7	S. Thangapandiya	AP/ECE	
8	Dr. R. REICA	ASP & Head/AI & DS	
9	Dr. T. ARCHANA	ASP & Head/IT	
10	H. Kala	AP/BME	
11	R. Sujitha	AP/CSE	
12	P. HARIHARASUDHAN	AP/mech	
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22	Dr.D.VIDHYA	AP/MATHEMATICS	
23	G.Shyamala	AP/BME	
24	S. Kiruthika	AP/IT	
25	A. POOJAA	AP/ECE	
26	Dr.T.RAJA	AP/Maths	
27	J.HELAN MARGRET JOY	HOD/CHEM	
28	M. Azhagarsar	AP/Physics	

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TAMIL NADU.

SESSION ON TECHNOLOGY ENGINEERING AND MATHEMATICS

SOLUTIONS FOR THE ADVERSE EFFECTS OF ALLOPATHIC MEDICINES AND TREATMENTS

Mrs.S.K.Deepa
Assistant Professor
Department of Biomedical Engineering
Mahendra College of Engineering

Contents

Introduction

- Allopathic medicine-Western Medicine
- 19th century-German physician - Christian Friedrich Samuel Hahnemann coined the term allopathy.
- India- Calcutta (Medical College)
- The allopathic medicine as a method of treating disease with remedies (such as surgery or drugs) that produce different effects from those caused by the disease.

Allopathic Medicines

- Infectious Diseases
- Chronic Diseases
- Mental Health Disorders
- Autoimmune Diseases
- Cancer
- Pain Management
- Gastrointestinal Disorders
- Respiratory Diseases
- Neurological Disorders
- Hormonal Disorders

Allopathic Treatments

- Pharmaceutical Treatments (Medications)
- Surgical Treatments
- Radiation Therapy
- Immunotherapy
- Mental Health Treatments
- Emergency Medicine
- Chronic Disease Management
- Rehabilitation

- Hormonal and Endocrine Treatments
- Preventive Treatments
- Physical and Occupational Therapy
- Miscellaneous Interventions

Adverse effects of allopathic medicines and treatments

- Medication Side Effects
- Surgical Risks
- Adverse Reactions to Vaccines
- Chemotherapy and Radiation Therapy
- Long-term Use of Prescription Drugs
- Immunosuppressive Therapy
- Radiological Imaging
- Non-surgical Interventions

Complementary treatments

- Complementary treatments to Allopathy refer to alternative or holistic therapies that can be used alongside conventional medical treatments
- These therapies are often aimed at improving overall well-being, managing symptoms, or reducing side effects of allopathic treatments.

- Siddha
- Ayurveda
- Homeopathy
- Naturopathy
- Acupuncture
- Yoga and Meditation
- Reiki and Energy Healing

Comparison of allopathic and complementary treatments

- **Skin diseases**

Eczema

Psoriasis

Lupus

Treatment methods

- **Allopathy**

Steriods- Eg: Betamethazone

Side effects: Burning sensation, bulging eyes, chest pain etc

- **Herbal medicine**

Neem leaf+Turmeric+ Kuppaimeni leaves+ rock salt

Permanent relief when taken continuously for certain periods

Side effects: No side effects

Headache and Fever

- **Allopathy**

Paracetamol, Dolo 650 etc..

Side effects : liver and kidney damage, Low blood pressure

- **Siddha and Ayurveda Medicine**

Nee[illegible] tablets

Side effects : No

Common Cold and Running nose

- **Allopathy**

Ascoril, Cherycof Syrup+ antiblotic tablets

Side effects: Diarrhea, Nausea and vomiting.

- **Siddha medicine**

Betel leaf+ Tulsi+turmeric+ cumin seeds

Side effects: No side effects

Respiratory Diseases- Asthma , COPD

- **Allopathy**

1. Nebulizer, Inhalers
2. **Side effects:** Dizziness, Chest pain , shaking
3. Voice change, Pneumonia

- **Siddha and Ayurvedha**

Side effects : No Side effects

Heart Diseases

- **Allopathy**

1. Aspirin
2. Antiplatelet drug
3. Anticoagulants

Side effects:

1. 1. Blood in urine, indigestion
2. 2.Asthma,

- **Siddha medicine**

Side effects: No proven side effects

Liver Diseases – Hepatitis A, Fatty liver

- **Allopathy**

Livcare, Liv 52 etc

Side effects : Dizziness, allergic reaction, rectal bleeding, weight gain.

- **Siddha and natural medicine**
- Side effects : No side effects

Thyroid

- **Allopathy**

Thyroxin

Side effects : Menstrual irregularities, Hair loss ,Weight gain

- **Herbal medicine**

Side effects : No side effects

Renal Disorders-Kidney stones

Allopathy

- Insulin
- Metformin

Side effects: Low blood sugar feeling hungry trembling or shaking sweating

Mookirattai Keerai

Side effects: No side effects

PCOD,PCOS

- **Allopathy**
  - Progestin
  - Clomid
- **Siddha medicine**
  - Shatavari , Tripala choornam

Side effects:
- Menstrual cycle changes, mood swings, weight gain

Side effects:
No side effects

Cancer Treatments

Allopathy
- Biopsy
- Chemotherapy
- Radiation Therapy
- Surgery

Natural medicine

Siddha medicine

Side effects :
Hair loss, Anemia, Infection risk

Side effects
No Side effects

Yoga and Meditations

Advantages of Complementary medicines

Advantages	Percentage
Advantages	
Natural and no side effect	30.0
Complete cure	25.0
Easy availability	17.0
More efficacious	14.0
Rapid symptomatic relief for mild ailments like cough, constipation	10.0

Disadvantages	
Useful for few diseases	21.0
Symptomatic relief only	12.0
Costlier	12.0
Food restriction	10.0
Side effects	4.0

CAM = Complementary and alternative medicine

Food and Healthy Lifestyle

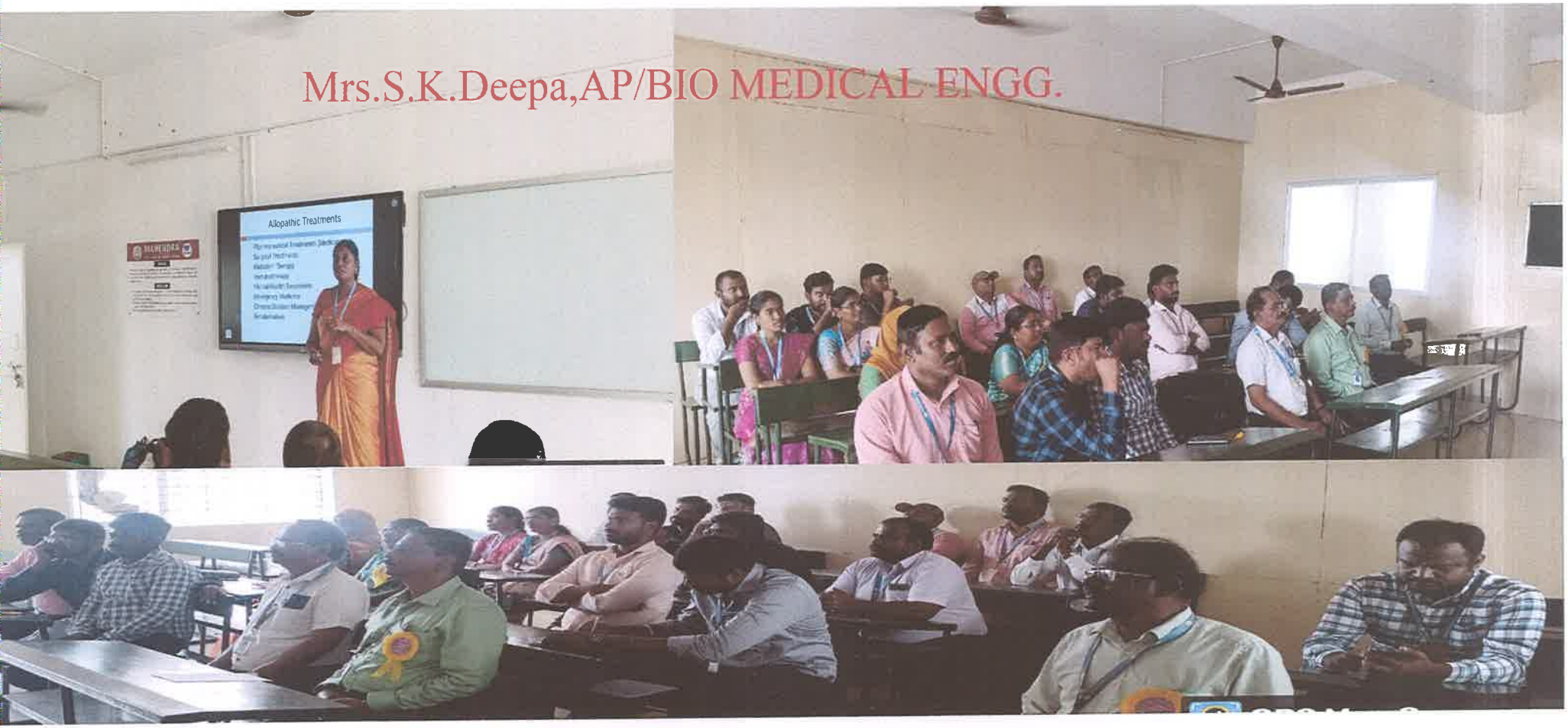
- Balanced Nutrition
- Regular Physical Activity
- Adequate Sleep
- Stress Management
- Mental Well-being

Conclusion

- By integrating complementary therapies, enhancing patient education, and promoting personalized medicine, healthcare providers can help minimize side effects and improve patient outcomes.
- Moving forward, the goal should be a balanced approach that combines the efficacy of allopathic treatments with strategies to mitigate their side effects, thus promoting a holistic and safer path to health and wellness.

- The use of complementary medicines offers a valuable approach to enhancing health and well-being when integrated responsibly with conventional treatments
- A collaborative approach between patients and healthcare providers is essential to ensuring safety and efficacy

THANK YOU



Mrs.S.K.Deepa,AP/BIO MEDICAL ENGG.

MAHENDRA COLLEGE OF ENGINEERING

ATTENDANCE FOR STEM PROGRAMME **DATE:** 13.12.23

NAME OF PRESENTER: Mrs. S.K. Deepa

TITLE : Solution for the adverse effect of allopathic medicine and treatment

DURATION: 11.45 Am to 12.10 pm **TIME:** 55 Minutes

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02.	A. Anjalin	AP/CSE	[signature]
03	A. Naseeth Banu	AP/English	[signature]
04	D.M.S. Saravanan	ASP/EEE	[signature]
05	H. Kala	AP/BME	[signature]
06	R. Surendiran	AP/PHY	[signature]
07	Dr. R. REKA	ASP & Head/AI & DS	[signature]
08.	Dr T AKILA	ASP & Head/IT	[signature]
09	T. GAJALAKSHMI	AP/IT	[signature]
10	S. Thangapandiyan	AP/EEE	[signature]
11	V. Rajakumaran	AP/mech	[signature]
12	R. Sujitha	AP/CSE	[signature]
13	T. RAMESH	AP/EEE	[signature]
14	Dr. A.T. Priyeshkumar	HOD/BME	[signature]
15	Dr. T. RAJA	AP/maths	[signature]

	P. HARIHARASUDHAN	AP / Maths	
16	S. Manoj Kumar	AP / ECE	
17	P. RADHA	AP / English	
18	Dr. D. VIDHYA	AP/MATHS	
19	M. SATHYA	AP / IT	
20	M. Azzanar	AP/Physics	
21	Dr. M. Surgaultu	Prof & HOD / ECE	
22	Dr. R. KARTHIKEYAN	AP/Chem	
23	K. Priyadharshini	AP/IT	
24	S. Kiruthika	AP/IT	
25	G. Shyamala	AP/BME	
26	Dr. A. Prabhu	AP/Phy	
27	A. POOJAA	AP/ECE	
28	J. HELAN MARGRET	HOD/CHE	

13/12/23
Signature of presenter

13/12/23
IQAC Co-ordinator

principal

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