



**P. R. Pote Patil Edu. & Welf. Trust's, Group of Institutions,
College of Engineering & Management, Amravati**

(Recognized by AICTE, New Delhi, Approved by Govt. of Maharashtra & Affiliated to SGBAU, Amravati)

Institute Code : 1107



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Report of Title: EMF webinar for students

1	Title of Workshop	EMF webinar for students
2	Date of Workshop	15/06/2020 to 16/06/2020
3	Venue of Workshop	Online Zoom platform
4	Resource Person	Dr. P. R. Gandhi
5	Target of Students/Participants	First Year Engineering Students and FY Staff
6	Number of Students/Participants	105
7	Schedule of Program	15/06/2020 to 16/06/2020
8	Topics Covered /Objective	Fundamentals of Electromagnetic field and coordinate system/ Participants will be able to understand the basics of Vector algebra, Electromagnetic theory.
9	Mode Assessment	Question and answering
10	Outcome of workshop/FDP/Seminar /webinar	Participants should be able to understand the basics of Vector algebra, Electromagnetic theory



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College of E

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Group of Institutions
College of Engg. & Management
Kathora Road, AMRAVATI



Sant Gajanan Maharaj Prasanna
P. R. Pote (Patil) Education & Welfare Trust, Group of Institutions,
College of Engineering & Management, Amravati
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Date: - 13/06/2020

To,
Dr. P. R. Gandhi
Professor, Ramdeo Baba College of Engineering, Nagpur.

Subject: Invitation as key speaker

Respected Sir,

The department of first year engineering of P. R. Pote (Patil) College of Engg. & Management, Amravati conduct various workshops, STTP, guest lectures, etc. for overall development of students. We are pleased to invite you as key speaker on 15th and 16th June 2020. We genuinely hope that you honor us with your presence and guide our students regarding topic Electro Magnetic Theory.

Please communicate your consent /query if any to Prof. S. A. Patil on 9371271031.

I do very much hope that you will accept this invitation. Thanking You.

Looking forward to your presence.

Thanking You!!!

H.S.D.

Dept of First Year Engineering
P.R. Pote (Patil) Edu. & Welfare Trust
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HOD

First Year Dept

Principal

P. R. Pote (Patil)
College of Engineering & Management

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Notice

14/06/2020

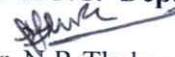
All the students of the first year engineering department are hereby informed that our Department is going to organize an online webinar on EMF for students from 15th June to 05th June 2020. so, All students should attain the program sharply at 4.00 pm.



Faculty Coordinators

Dr. S. A. Patil

Head of F.Y. Department


Dr. N.R. Thakare

H.O.D.

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Sant Gadge Baba Amravati University, Amravati (M.S.)

**Department of First Year Engineering
Organize Online Webinar on "EMF" For students**

From 15/06/2020 to 16/06/2020

Convener

Dr.N.R.Thakare

9960616448

Email: nileshthakarey@rediffmail.com

Mode:Zoom platform

Time :4.00 pm


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**P. R. Pote (Patil) College of Engineering and
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REPORT

On

EMF Webinar

By

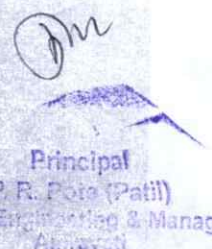
Dr. P. R. Gandhi

Dated

15th & 16th June 2020


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**Principal
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Invitation letter to speaker



**P. R. Pote College of Engineering and
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Amravati**



TITLE OF THE EVENT	EMF Webinar (2020-2021)
PLATFORM	ZOOM MEETING
DATE OF EVENT & TIMING	15th & 16th June 2020 4:00 pm to 5:30pm
NO. OF PARTICIPANTS	105
GUEST SPEAKER	Dr. P. R. Gandhi, Professor Ramdeo Baba College of Engineering, Nagpur
Briefing of the Program	A webinar was conducted by Department of Applied Sciences and Humanities on "Fundamentals of Electromagnetic field and co-ordinate system". At the outset the organizer of the webinar, Dr. N. R. Thakare welcomed the guest speaker, all the dignitaries, the faculty members and students. Prof. A. V. Dahat gave a brief introduction of the honorable guest. On the first day, Dr. P. R. Gandhi explained the Vector Calculus, Vector Algebra and different co-ordinate system in a lucid way. On the other day he briefly introduced the basic terms regarding Electromagnetic theory, then interpreted some of the important formulae and gave detail

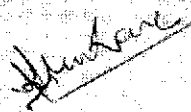
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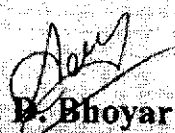
explanation about transmission lines and working of Antenna. His thorough knowledge and deep insight into the subject helped the listeners to clearly visualize some of the difficult terms in electro-magnetics and thus develop interest in it.

After the interactive session of question & answers the vote of thanks was proposed by Dr. S. A. Patil.

FEEDBACK	We have collected feedback from the student. The feedback was found to be positive.
COMMITTEE MEMBERS	• Co-ordinator : Dr. N. R. Thakare • Anchors : Dr. N. R. Thakare, Dr. S. A. Patil Prof. A. V. Dahat • Report by : Dr. S. A. Patil
PHOTO GALARY	Enclosed


Dr. N. R. Thakare
 (Webinar Co-ordinator)


Dr. N. R. Thakare
 (HOD of A group)


Dr. A. D. Bhoyar
 (HOD of B group)

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 P. R. Pote (Patil)
 College of Eng.

Zoom

Applying Maxwell's equations to the case of wave equations.

$$\nabla \times (\nabla \times \mathbf{E}) = \nabla (\nabla \cdot \mathbf{E}) - \nabla^2 \mathbf{E} = \frac{1}{c^2} \frac{d^2 \mathbf{E}}{dt^2}$$

The second term in above equation has following significance.

- 1. It shows that the electric field is not only due to the charges but also due to the changing magnetic field.
- 2. It shows that the magnetic field is not only due to the charges but also due to the changing electric field.

The integral in the 2nd term is not a real energy density in the electric and magnetic fields. The partial derivative with time gives the rate of increase of energy stored in the fields.

Unmute Start Video Share Participants More

$\nabla \times \mathbf{E} = -\mu_0 \frac{d\mathbf{H}}{dt}$ for free space

b) Ampere's Circuital Law for time varying field

$$\nabla \times \mathbf{H} = \mathbf{J}_c + \mathbf{J}_d \quad \left(\begin{array}{l} \text{Conduction} \\ \text{Current} \end{array} + \begin{array}{l} \text{Displacement} \\ \text{Current} \end{array} \right)$$

$$\nabla \times \mathbf{H} = \mathbf{J}_c + \frac{d\mathbf{D}}{dt} \quad \text{where } \mathbf{J}_c = \sigma \mathbf{E}$$

$$\mathbf{J}_d = \frac{d\mathbf{D}}{dt}$$

c) $\int_V (\nabla \times \mathbf{H}) \cdot d\mathbf{S} = \int_V \mathbf{J}_c \cdot d\mathbf{S} + \int_V \frac{d\mathbf{D}}{dt} \cdot d\mathbf{S}$

$$= \mathbf{I} + \mathbf{I}_d = \mathbf{I} + \int_V \frac{d\mathbf{D}}{dt} \cdot d\mathbf{S}$$

e) Electromagnetic wave Equation for homogeneous conducting medium

f) For electric field

$$\nabla^2 \mathbf{E} = \mu_0 \frac{d^2 \mathbf{E}}{dt^2} + \mu \epsilon \frac{d^2 \mathbf{E}}{dt^2}$$

Online session with presentation by
Dr. P. R. Gandhi

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Zoom

$$\oint_{Vol} \vec{E} \cdot d\vec{s} = \int_{Vol} \vec{E} \cdot d\vec{v} + \frac{d}{dt} \int_{Vol} \left(\frac{\epsilon E^2}{2} + \frac{\mu H^2}{2} \right) d\vec{v}$$

Applying Divergence theorem to LHS of above equation -

$$\oint_{Vol} (\vec{E} \cdot d\vec{s}) = \int_{Vol} \vec{E} \cdot d\vec{v} + \frac{d}{dt} \int_{Vol} \left(\frac{\epsilon E^2}{2} + \frac{\mu H^2}{2} \right) d\vec{v}$$

Various terms in above equation has following meaning -
 There are no sources within the volume, then
 Integral of RHS is the total instantaneous change
 of distributed within the volume.

If electric dielectric, ϵ
 Power stored in the $\vec{E}$
 $P_e = \frac{1}{2} \epsilon E^2$
 For perfect dielectric
 $\epsilon_r = \epsilon_0 \epsilon_r$
 $\mu_r = \frac{\mu}{\mu_0}$

Start Video Share

Online session with presentation by
Dr. P. R. Gandhi

(Signature)

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Amravati

List of students attended
Feedback Report

P.R.Pote College of Engineering & Management, Amravati

Attendance & Feedback of "EMF Webinar"
Department Of Applied Sciences & Humanities

Session by Dr. P. R. Gandhi				Date :- 15 & 16/06/2020	
	Completely (5)	Moderately Satisfy (4)	Satisfy (3)		
1. The experience of the session was	323	6	1		1642
2. How was the Content delivered ?	327	2	1		1646
3. How was the event Structure ?	321	5	4		1637
4. Overall experience of the session	329	1	0		1649
Feedback in Percentage	99.60606061				1643.5

Webinar Coordinator
Dr. N.R. Thakare

HOD
Dr. N.R. Thakare

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P.R.POTE COLLEGE OF ENGINEERING & MANAGEMENT, AMRAVATI

ATTENDANCE ON EMF WEBINAR

ON DATE 15TH AND 16TH JUNE 2020

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Vaibhav Nandkishor Mete	Nagpur	8237797990
Abhishek sharad umbarkar	Amravati	8459763082
A.ARUNA	SALEM	8220560156
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Nikunj Ruhatiya	Risod	9423611600
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Shraddha Subhashrao Ingole	Amravati	7768952360
Anup P. Bhat	Nagpur	8007703353
Anand Tale	Amr3	9960593094
Amit Vijay Mehare	Akot	9130341853
B.Padmadevi	Chengalpet	9597131676
Madhuri.P. Tarhekar	CHANDURBAZAR	7020735287
Vishakha Prabhakar Mohod	Achalpur	7821081863
Amit Chakradhar Thekar	Akola	9370076106
Shilvant Devendra Hatole	Amravati	9075430973
Ku. Sejal Vijay Kurhade	Warwat Bakal	9767591047
Rutuja Satao	Khamgaon	9011763220
Aniket Kuralkar	Karajgaon	7757821212
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Bhavana sanjay mule	Amravati	7083427048
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Ujwal Devanand Patond	Amravati	9834306807
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