ANNAI MATHAMMAL SHEELA ENGINEERING COLLEGE
COURSE DELIVERY PLAN

Name of the Department: EEE **Name of the Staff:**

Sub Code & Name: EE6302 & Electromagnetic Theory **Year / Sem: II / IV**

UNIT I ELECTROSTATICS – I

Lect. no	Date Planned	Topics to be covered	Time required (periods)	Teaching Methods	Teaching Aids	Books/Journals Referred
1	22.06.15	Sources and effects of electromagnetic fields	1	L	CB	1,2
2	23.06.15	Coordinate Systems	1	L	CB	1,2
3	24.06.15	Vector fields	1	L	CB,PP	1,2
4	24.06.15	Gradient, Divergence, Curl	1	L	CB	1,2
5	25.06.15	Theorems and applications	1	L	CB	1,2
6	25.06.15	Coulomb's Law	1	L	CB	1,2
7	27.06.15	Electric field intensity	1	L	CB	1,2
8	27.06.15	Field due to discrete and continuous charges	1	L,TT	CB,VF	1,2
9	30.06.15	Gauss's law and applications.	1	L	CB,PP	1,2

UNIT II ELECTROSTATICS – II

Lect. no	Date Planned	Topics to be covered	Time required (periods)	Teaching Methods	Teaching Aids	Books/Journals Referred
1	01.07.15	Electric potential	1	L,TT	CB	1,3
2	01.07.15	Electric field and equipotential plots,	1	L	CB	1,3
3	02.07.15	Uniform and Non-Uniform field	1	L,TT	CB,PP	1,3
4	02.07.15	Utilization factor – Electric field in free space	1	L,TT	CB	1,3

5	04.07.15	Conductor,dielectric	1	L,TT	CB,PP	1,3
6	04.07.15	Dielectric polarization -	1	L,TT	CB	1,3
7	07.07.15	Dielectric strength - Electric field in multiple dielectrics –	1	L,TT	CB	1,3
8	08.07.15	Boundary conditions, Poisson's and Laplace's equations,	1	L	CB	1,3
9	08.07.15	Capacitance, Energy density, Applications.	1	L,TT	CB	1,3

UNIT III MAGNETOSTATICS

Lect. no	Date Planned	Topics to be covered	Time required (periods)	Teaching Methods	Teaching Aids	Books/Journals Referred
1	09.07.15	Lorentz force, magnetic field intensity (H)	1	L,TT	CB	1,2
2	09.07.15	Biot–Savart's Law - Ampere's Circuit Law	1	L	CB	1,2
3	11.07.15	Circular loop, infinite sheet of current	1	L,TT	CB,PP	1,2
4	11.07.15	Magnetic flux density (B) – B in free space, conductor, magnetic materials	1	L,TT	CB	1,2
5	15.07.15	Magnetization, Magnetic field in multiple media	1	L,TT	CB,PP	1,2
6	16.07.15	Boundary conditions	1	L,TT	CB	1,2
7	16.07.15	Scalar and vector potential, Poisson's Equation	1	L,TT	CB	1,2
8	16.07.15	Magnetic force, Torque, Inductance	1	L	CB	1,2
9	20.07.15	Energy density, Applications.	1	L	CB	1,2

UNIT IV ELECTRODYNAMIC FIELDS

Lect. no	Date Planned	Topics to be covered	Time required (periods)	Teaching Methods	Teaching Aids	Books/Journals Referred
1	22.07.15	Magnetic Circuits	1	L	CB	3,5
2	22.07.15	Faraday's law	1	L	CB	3,5
3	23.07.15	Transformer and motional EMF	1	L	CB	3,5
4	23.07.15	Displacement current	1	L	CB	3,5
5	25.07.15	Maxwell's equations (differential and integral form)	2	L,TT	CB,PP	3,5
6	28.07.15	Relation between field theory and circuit theory	2	L,TT	CB	3,5
7	29.07.15	Applications	1	L,TT	CB	3,5

UNIT V ELECTROMAGNETIC WAVES

Lect. no	Date Planned	Topics to be covered	Time required (periods)	Teaching Methods	Teaching Aids	Books/Journals Referred
1	30.07.15	Electromagnetic wave generation and equations	1	L	CB	1,6
2,3	30.07.15 & 01.08.15	Wave parameters; velocity, intrinsic impedance	2	L	CB	1,6
4	01.08.15	Propagation constant	1	L	CB	1,6
5	04.08.15	Waves in free space, lossy	1	L,TT	CB	1,6
6	05.08.15	Lossless dielectrics,	1	L,TT	CB,PP	1,6
7	05.08.15	Conductors- skin depth - Poynting vector	1	L,TT	CB	1,6
8	06.08.15	Plane wave reflection and refraction	1	L,TT	CB	1,6
9	06.08.15	Standing Wave – Applications.	1	L,TT	CB	1,6

Teaching Aids : Video Film (VF), Power Point Presentation (PP), Demo (D) , Models (M) , Over Head Project (OHP), Chalk Board (CB).

Teaching Methods: Lecture (L), Group Discussion (GD) , Quiz (Q), Seminar (S), Team Teaching (TT) , Lab Visit (LV) ,Industrial Visit.

TEXT BOOKS:

A. Mathew N. O. Sadiku, 'Principles of Electromagnetics', 4 th Edition ,Oxford University Press Inc.First India edition, 2009.
B. Ashutosh Pramanik, 'Electromagnetism – Theory and Applications', PHI Learning Private Limited, New Delhi, Second Edition-2009.
C. K.A. Gangadhar, P.M. Ramanthan ' Electromagnetic Field Theory (including Antennaes and wave propagation', 16th Edition, Khanna Publications, 2007.

REFERENCES:

D. Joseph. A.Edminister, 'Schaum's Outline of Electromagnetics, Third Edition (Schaum's Outline Series), Tata McGraw Hill, 2010
E. William H. Hayt and John A. Buck, 'Engineering Electromagnetics', Tata McGraw Hill 8th Revised edition, 2011.
F. Kraus and Fleish, 'Electromagnetics with Applications', McGraw Hill International Editions, Fifth Edition, 2010.
G. Bhag Singh Guru and Hüseyin R. Hiziroglu "Electromagnetic field theory Fundamentals", Cambridge University Press; Second Revised Edition, 2009.

OTHER BOOKS:

Dr.P.Dananjayan,ELECTROMAGNETIC THEORY

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Staff Signature **HOD** **Principal**