

Smt Sindhutai Jadhao Arts and Science Mahavidyalaya, Mehkar
B.Sc. II SEMESTAR III
PHYSICS

Topic	Link for Material
Unit I : Mathematical background and Electrostatics	
Gradient, divergence and curl of a vector fields and their physical significance	https://www.youtube.com/watch?v=TYOYID9gJxM
Physical significance of divergence	https://www.youtube.com/watch?v=6_AyWZ9PMY0
Physical significance of curl	https://www.youtube.com/watch?v=MQP2KZdV00Y
line surface and volume integral	https://www.youtube.com/watch?v=NyG0vRn5FfU
Gauss divergence theorem	https://www.youtube.com/watch?v=_PNsPatRNVa
Stocks theorem	https://www.youtube.com/watch?v=cxpydyG98N8
Work done on charge in electrostatic field	https://www.youtube.com/watch?v=Qjqdr5VT-Jo
flux of electric field	https://www.youtube.com/watch?v=MnvqHrvPq_s
force on moving charge	https://www.youtube.com/watch?v=22aHHqfJWe0
Lorentz force equation and definition of B	https://www.youtube.com/watch?v=97eR35EDNRY
Amperes force law	https://www.youtube.com/watch?v=kQ4DhNtfxII
Amperes Law and its applications.	https://www.youtube.com/watch?v=EINsa2xc_Qk
Unit II : Magnetostatics and Maxwell's Equations	
Faradays Law	https://www.youtube.com/watch?v=7u-S6aVSGbI
Integral and differential form of faradays law,	https://www.youtube.com/watch?v=z0TF0EF5258
displacement current	https://www.youtube.com/watch?v=GT590AhLD0k
Maxwells Equation	https://www.youtube.com/watch?v=6WjEt8VRntY
wave Equation satisfied by E and B	https://www.youtube.com/watch?v=OWMlIPjF6w0
Plane electromagnetic wave in vacuum	https://www.youtube.com/watch?v=KtWq4OHngtg
Poynting vector and Poynting theorem	https://www.youtube.com/watch?v=boXnHBVdWLk
Unit-III : Solid State Electronics Devices-I –	
Introduction to semiconductors	https://www.youtube.com/watch?v=8fOAXnUuG3k
Charge carriers & electrical conduction through semiconductors	https://www.youtube.com/watch?v=5IcgpqQy-9o
Doping , extrinsic semiconductors	https://www.youtube.com/watch?v=DvYfs6rXKuE
Fermi level & energy level diagrams	https://www.youtube.com/watch?v=Z-f5bQk4lvc
Drift current in semiconductor	https://www.youtube.com/watch?v=LJjyKVFzDiw
mobility, conductivity	https://www.youtube.com/watch?v=VonSQe0nVYc
Hall effect,Hall coefficient	https://www.youtube.com/watch?v=mY-KtVUM1bc
Semiconductor diode & its biasing	https://www.youtube.com/watch?v=hKGJoW_u6wo

LED	https://www.youtube.com/watch?v=cRhAUx6w4Cg
Varactor diode	https://www.youtube.com/watch?v=ngvJ0Wv8cFo
Unit-IV : Solid State Electronics Devices-II –	
Introduction to BJT	https://www.youtube.com/watch?v=-VwPSDQmdjM
working of BJT	https://www.youtube.com/watch?v=-VwPSDQmdjM&t=611s
modes of operation	https://www.youtube.com/watch?v=kspQI4LEQf0
Current gains alpha and beta	https://www.youtube.com/watch?v=4AgynmNJ6xQ
CB & CE characteristics	https://www.youtube.com/watch?v=KynKHr2cXgk
JFET- construction & working	https://www.youtube.com/watch?v=2I_8YNVgbEw
characteristics of FET	https://www.youtube.com/watch?v=h9WIHNvHZ84
Basic concept of Difference amplifier	https://www.youtube.com/watch?v=ltVspUteuuI
IC-OP AMP	https://www.youtube.com/watch?v=kiiA6WTCQn0
electrical parameters of OP AMP	https://www.youtube.com/watch?v=i_z6ikX80fk
inverting & noninverting modes	https://www.youtube.com/watch?v=AuZ00cQ0UrE
non inverting amplifier	https://www.youtube.com/watch?v=uyOfonR_rEw
OP AMP as adder	https://www.youtube.com/watch?v=jsKSfaFQ4d4
Op-Amp as subtractor	https://www.youtube.com/watch?v=ltVspUteuuI&t=16s
Op-Amp as Differentiator	https://www.youtube.com/watch?v=aU24RWIgjVs
Op-Amp as Integrator	https://www.youtube.com/watch?v=OPvs7A554Rw
Unit: V : Special Theory of Relativity	
Postulates of Special Theory of Relativity	https://www.youtube.com/watch?v=b6vw-ceqvgA
Lorentz transformations	https://www.youtube.com/watch?v=gFU-p94oAuA
Length contraction	https://www.youtube.com/watch?v=p6hhFkSXpRY
Time dilation	https://www.youtube.com/watch?v=d1sxag038IU
relativistic addition of velocities	https://www.youtube.com/watch?v=Hb44MQxjWbo
relativity of mass	https://www.youtube.com/watch?v=ELhk_Qr7xKE
Einstein's Mass - energy relation	https://www.youtube.com/watch?v=Yywsn3w9BY
Unit: VI : Atmosphere and Geophysics	
Structure of earth The crust, mantle, core.	https://www.youtube.com/watch?v=09Pu9cEbFk0
Part of the earth As a planet	https://www.youtube.com/watch?v=3dLZCU-J4KU
The Atmosphere	https://www.youtube.com/watch?v=6LkmD6B2ncs
The lithosphere	https://www.youtube.com/watch?v=ho3Egww1aTE
The Hydrosphere Composition of Atmosphere	https://www.youtube.com/watch?v=w-YKCNM2XAM
Earthquakes Causes	https://www.youtube.com/watch?v=uA_OLKfQpYA
terminologies associated with earthquakes	https://www.youtube.com/watch?v=-y3zt7opkvY&pbjreload=101
Type of earthquakes scale of intensity	https://www.youtube.com/watch?v=sCVE3kNRiac
recording of earthquakes	https://www.youtube.com/watch?v=NaNw9LHq9dc
Radiation in the atmosphere	https://www.youtube.com/watch?v=95ofx9p7IyI
Intensity of radiation	https://www.youtube.com/watch?v=10i7QGJu-hM
Scattering, absorption and reflection of solar radiation by the atmosphere	https://www.youtube.com/watch?v=kbTfWntVj50

Moisture and clouds:	https://www.youtube.com/watch?v=JglHGU9_Cjo
mechanism that produces clouds	https://www.youtube.com/watch?v=TdWa6UtMQ6g
Cloud produced by mixing and by cooling	https://www.youtube.com/watch?v=v2-Kvw9kgms