2nd January 2025 (Thursday) →

⊗ NothingtoAnKi

We will be dealing with Classical Electrodynamics.

Syllabus → (official, he disapproves apparently)

- ☐ Intro to electrostat
- ☐ Boundary value problem in electrostat
- ☐ Neumann and Dirichlet problems
- ☐ Formal solution (Green's function)
- ☐ Multipole expansion
- ☐ Electrostat of macroscopic media
- ☐ Dielectrics
- ☐ Review of magneto statics
- ☐ Maxwell's equations
- ☐ Macroscopic electromagnetism
- ☐ Electrodynamics
- ☐ Conservation Laws
- ☐ Poynting Theorem
- ☐ Plane EM wave
- ☐ Wave propagation
- ☐ Polarization, reflection, transmission, TIR
- ☐ waves in conducting media
- ☐ TEM(?) waves
- ☐ waveguides
- ☐ Scalar, vector potential - Coulomb, Lorentz gauge
- ☐ Retarded potential
- ☐ Something - something potential
- ☐ Time-dependent Green's function
- ☐ Radiation
- ☐ Radiation by moving charge.
- ☒ STR + Dynamics of relativistic particles + EM
- ☒ Electrodynamics in tensor notation.

References: Classical Electrodynamics — Jackson
Griffiths
Arf Ken Weber
Sommerfeld — PDEs in Physics, Electrodynamics

Evaluation :- Best 2/3 CT = 20%
Midsems = 10%
Endsem = 40%
Tutorial + HW = 30%
} → Min attendance required = 60%

CT Dates :-
① → Wed, 29 Jan, 12 Noon
② → Wed, 26 March, 12 Noon
③ → Wed, 16 April, 12 Noon.

(*) Once every 2 weeks, there will be ungraded assignments.