Classical Electrodynamics II PHY 614

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Time Table: DOAA

Course Syllabus: Refer to DOAA Website Courses page. The syllabus is a tentative list of topics. Choice of topics and extent of coverage is left for the Instructor.

Evaluation: (Surprise) Quiz 15 + 15=30 , Mid Sem 20 MCQ + 40 =60, End Sem 30 MCQ + 60=90, Attendance 20, Total 200. *Quiz, MS, ES Make Up Exams as per Senate Rules.*

Texts and References: Goldstein (Special Relativity Chapter) , Landau Lifshitz (Classical Theory of Fields) and J D Jackson (Classical Electrodynamics).

Tips : Attend all lectures and tutorials and solve the problem sheets. *Attendance will be strictly enforced and extended absentees without a valid reason will be de-registered from the course as per Senate guidelines.* Course and evaluation will be geared towards the Lectures. All Quiz, Exams are Open Notes.

Consultation or Discussion: Please make appointment by email to sengupta@iitk.ac.in For emergency only, call my mobile number given on my website **http://home.iitk.ac.in/ sengupta**

Fail Grade: Lack of regular attendance and less than minimum required marks in the *relative grading scheme.* Note that the course is conceptually and technically hard. It will need sincerity effort and hard work.

Lecture Plan Total 40 Lectures. No Tutorials for this course

1. STR, 4 vectors and tensors: 3 L
2. Relativistic Kinematics and Dynamics, Lagrangian: 6 L
3. Charged Particle in EM Fields: 3 L
4. Maxwell Equations and Covariant ED: 6 L
5. Classical Field Theory: 6 L
6. LW Potentials : 3 L
7. Radiation Theory: 9 L
8. Dispersion and Scattering: 3 L