Class Schedule of "Introduction to Metamaterials and Plasmonics" (Fall, 2013)

Faster, Smaller, Stronger!! Welcome to 10210MS 536300 to learn what the revolutionary *Metamaterials and Plasmonics* have achieved in the past and promise in the near future. Recently, *Metamaterials and Plasmonics* have been attracting increasingly attention because they enable rare and even unprecedented properties stemming from strong light-matter interaction. In this class we will introduce the basic concepts about *Metamaterials and Plasmonics* within five parts: 1. Light-matter interaction, 2. Metamaterials, 3. Plasmonics, 4. Numerical tools, and 5. Term projects. As for the detail content and the class schedule, please refer to the following table.

Location: B1-02, Bldg., Delta
Date: M6M7M8

Week	Date	Content (English-based)	
1	9/16	**I. Light-matter interaction**	syllabus
2	9/23		Maxwell equations (from intergral form to differential form), wave equation
3	9/30		bondary conditions, dispersion in metals (Drude and Lorentz models)
4	10/7		response in dielectrics (microscopic & macroscopic properties), light-matter interaction (scattering)
5	10/14	**II. Metamaterials**	split-ring resonantors, plasmonic wires, NRIM,
6	10/21		fishnet strucutres, two-handed MMs, hypermedia
7	10/28		dielectric metmaterials, slow light, transformation optics
8	11/4		perfect absorber, other kinds of MMs (accoustic MMs, transmission lines)
9	11/11	**Midterm**	midterm
10	11/18	**III. Plasmonics**	surface plasmon polariton, magnetic surface polariton
11	11/25		localized surface plasmonic resonances, 4 interrogations & applications
12	12/2		SPASER, plasmonic circuits
13	12/9	**IV. Numerical tools**	FDTD, FEM
14	12/16		genetic algorithm
15	12/23	**V. Final (term projects)**	techinical communication
16	12/30		term projects
17	1/6		term projects
18	1/13		my feedback

This schedule is subject to being adjusted upon actual intruction progess and students' feedback.

Grading policy: midterm (40%), final (60%, including both oral & report)

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