



Department of Physics and Astronomy

Instructor:

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**Course description:** Wave behavior in disordered media is a subject of broad interest. The topics covered in this course are generally on effective medium theory, wave diffusion, wave localization, and intensity fluctuations and correlations. The techniques developed in the course are interesting for different lines of research, such as light propagation in random media (including tissue and brain in optogenetics), and other classical and quantum wave systems. The Green's function techniques somewhat resemble those used in a quantum field theory course, so theory/mathematical physics students may be interested.

Time and place: Tuesdays and Thursdays, 2:00PM–3:15PM , PANDA room 1131

**Textbook:** Introduction to Wave Scattering, Localization, and Mesoscopic Phenomena, by Ping Sheng, Academic Press

**Class participation:** Class participation counts as 5% of the final grade.

**Homework, exam, and grade:** Problem sets are assigned on a regular basis throughout the semester. The final exam will be based on the problems that are worked out throughout the semester. The grade will be assigned 20% based on the participation and homework and 80% based on the final exam performance.

**Student Code of Conduct:**

I encourage you to check out the UNM Student Code of Conduct.

<http://pathfinder.unm.edu/code-of-conduct.html>

**Course Outline** This will be a fast-paced course. Students are expected to contribute by reading the material before the class and I will teach the key highlights. My goal is to cover at least the first 6 chapters of the textbook.

**The book Table of Contents and sample pages are attached!**