

ECE 929C: Geometrical Theory of Diffraction: Fall 2019**Instructor:** Prof. Shanker Balasubramaniam (email: bshanker@egr.msu.edu)**Classes:** 1:00-12:20; TuTh; 004 Urban Plan & Land Arch Bldg;**Shanker Office Hrs:** TuTh 11:00-12:00pm, 3242 EB**Class Website:** D2L**Final Exam:** Before finals week**Required Text:**

1. Geometrical Theory of Diffraction for Electromagnetic Waves, G.L. James, IET Press

Notes

1. Written notes that will be, more or less, followed have been posted

Class Policies:**1. Grade Distribution**

- (a) Homework: 25%
- (b) Presentation: 25%
- (c) Final: 50%

Review of complex variables	Notes
Two-dimensional field equations	2.1
Fourier transform solutions to the Helmholtz equation	Notes
Canonical problem 1: planar dielectric interface	3.1
Canonical problem 2: the half plane	3.2
Canonical problem 3: the wedge	3.3
Canonical problem 4: the cylinder	3.4
Principles of Geometrical Optics	4
Diffraction by straight edges and surfaces	5
Diffraction by curved edges and surfaces	6

Table 1: Tentative list of topics; the instructor reserves the ability to add/subtract topics from this list