

EE 8390-Photonic BandGap Crystals: Theory and Applications

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Office hours : TTh 10:00 - 1230 or by appointment

Catalog Course Description

This course will cover the fundamentals of photonic bandgap crystals and their applications to advanced optical sensing architectures. The class will initially introduce the fundamental theory governing pbc operations, then investigate the latest advancements in their utilization as sensors. Computational modeling techniques used in studying pbcs will be covered as well.

Textbook and Other Related Material

Textbook

Photonic Crystals: Molding the Flow of Light, John D. Joannopoulos, Steven G. Johnson, Joshua N. Winn, and Robert D. Meade, 2008 Princeton University Press

References

MIT Photonic-Bands: http://j dj.mit.edu/wiki/index.php/MIT_Photonic_Bands

Prerequisites

EE 3330- Electromagnetic Fields and Waves (Grade of C- or better)

Corequisites

None

Class Schedule

MW 2:00-3:30

Caruth Hall, Room 161

Grade Breakdown

Homework: 25%

Midterm Exam: 25%

Final Report: 50%

Grading Policy:

All documents MUST be submitted electronically. I accept Microsoft Word documents, Open Office Writer documents, html web pages, pdf files or even text documents. The computers in the Junkins Lab all have both Word and Writer, if you do not have them yourself. Open Office is also available for free download, if you so choose.

All grades are non-negotiable one week after the grade is posted. Please don't disturb the instructor after the final grades have been posted with a hard-luck story.

Cheating Policy:

Students are required to work alone during test sessions. Students may consult with each other, TAs, or Professors, but they must do independent work. Consulting means "seeking opinions or advice" not getting working programs or designs, understanding them, and then modifying them to make them their own. **In other words, verbatim copying or simple paraphrasing of other's solutions is not an acceptable form of cooperative study.** The latter constitutes cheating.

Academic Honesty:

Academic dishonesty may be defined broadly as a student's misrepresentation of his or her academic work or of the circumstances under which the work is done. This includes plagiarism in all papers, projects, take-home exams, or any other assignments in which the student represents work as being his or her own. It also includes cheating on examinations, unauthorized access to test materials, and aiding another student to cheat or participate in an act of academic dishonesty. Failure to prevent cheating by another may be considered as participation in the dishonest act. I am not forgiving of cheating. I take this matter very seriously, so don't push me on it.

The Honor Code of Southern Methodist University (from SMU student handbook):

Intellectual integrity and academic honesty are fundamental to the processes of learning and evaluating academic performance; maintaining them is the responsibility of all members of an educational institution. The inculcation of personal standards of honesty and integrity is a goal of education in all the disciplines of the University. The faculty has the responsibility of encouraging and maintaining an atmosphere of academic honesty by being certain that students are aware of the value of it, that they understand the regulations defining it, and that they know the penalties for departing from it. The faculty should, as far as is reasonably possible, assist students in avoiding the temptation to cheat. Faculty must be aware that permitting dishonesty is not open to personal choice. A professor or instructor who is unwilling to act upon offenses is an accessory with the student offender in deteriorating the integrity of the University. Students must share the responsibility for creating and maintaining an atmosphere of honesty and integrity. Students should be aware that personal experience in completing assigned work is essential to learning. Permitting others to prepare their work, using published or unpublished summaries as a substitute for studying required materials, or giving or receiving unauthorized assistance in the preparation of work to be submitted are directly contrary to the honest process of learning. Students who are aware that others in a course are cheating or otherwise acting dishonestly have the responsibility to inform the professor and/or bring an accusation to the Honor Council.

Students and faculty must mutually share the knowledge that any dishonest practices permitted will make it more difficult for the honest students to be evaluated and graded fairly,

and will damage the integrity of the whole University. Students should recognize that their own interest, and their integrity as individuals, suffers if they condone dishonesty in others.

Disability Accommodations:

If you need academic accommodations for a disability, you must first contact Disability Accommodations & Success Strategies (DASS) at 214-768-1470 or www.smu.edu/alec/dass.asp to verify the disability and to establish eligibility for accommodations. Then you must schedule an appointment with the professor to make appropriate arrangements.