

Spring 2020

OPSE 410-002: Advanced Optics and Biophysics Applications

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Advance Optics and Biophysics Applications

Optical Science and Engineering (OPSE 410) Spring 2020
Professor Benjamin Thomas, Department of Physics

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Office: 483 Tiernan Hall

Office hours: Monday and Wednesday, 2:30 pm to 3:30 pm.

Synopsis of this course: A quantitative view of life in terms of selected optical concepts of biophysics. The course will give you a chance to measure and analyze real materials related to life. Extinction, optical absorption spectroscopy, differential optical absorption spectroscopy and other optical methodologies will be used to probe material related to biology.

Text (optional): "Physics in Biology and Medicine," Paul Davidovits (3rd Edition, paperback and e-book, ISBN-13: **978-0123694119**).

Assessment Plan:

Final grade on the basis of the following assignments and weighting:

Average of 5 (max) reports	70 %
1 oral presentation	10 %
Final exam	20 %

Translate % values into letter grades with the standard physics department scale as follows: F: <40; D: 40-50; C: 50-60; C+: 62-69; B: 69-75; B+: 75-82; A: >82

Outcomes plan: Students will be able to

1. Formulate and test hypotheses and predictions about optical biophysics.
2. Present in verbal and written form a mathematical and statistical analysis of these measurements.

Academic integrity and honesty are important to both students and professors. The NJIT Student Council and the faculty strongly support fairness for all students. To help ensure this equity the NJIT Administration requires that every professor bring cheating to the attention of the Dean of Students.

The instructors will follow the following grading policies:

1. Reduce the max score for late reports by 4 points per day
2. Require all reports from each student for passing grade.
3. Grade each student on his/her own report. Require that you identify in your report students that work on the project with you.
4. Give credit when you use books, articles or internet for motivation and theoretical information. Failure to cite a source is plagiarism.