Physics 308
Syllabus, Spring 2014
St. Lawrence University
Daniel W. Koon, Instructor
Last updated: 1-18-14

TEXT:
   Introduction to Electrodynamics, (4th Ed.) David J. Griffiths. (Ebay, Amazon)
OTHER FINE TEXTS:
   Electricity and Magnetism, Edward M. Purcell & David J. Morin.
   Electromagnetic Fields and Waves, Lorrain, Corson, and Lorrain.
EXAM FILES: list of old exam questions (with some solutions) {See Sakai site}
"YSBATs" (*You Should Be Able To…***)**: Exam preparation material {Sakai}
HOMEWORK SCHEDULE: *Please see Sakai for current version.*

GRADING POLICY: Your final average will be calculated from the following:

Homework	40%
Dailies	12%
Three semester exams	36%
Final Exam	12%

Grades will be posted at Sakai, in the "PostEm" folder.

ATTENDANCE POLICY: The instructor reserves the right to subtract one-half of a letter grade for each absence beyond the first three. I do not expect you to learn all of your physics from my magnificent lectures, just as I would not expect you to learn it all simply from reading every sentence of the text, or by doing every homework problem. However, each one of these items you miss diminishes the understanding you are likely to gain of the course material.

EXAMS: There will be three exams during regular class time during the semester, Tuesday, February 11, Tuesday, March 4, and Tuesday, April 8, plus a Final Exam Tuesday, May 6, from 1:30 to 4:30am.

THE LECTURES: (Chapters refer to Griffiths' *Introduction to Electrodynamics*, unless otherwise stated. The pre-lecture notes are available on Sakai.)

TUESDAY	THURSDAY
1/21: "Advertisement" + Ch. 2.1: Intro, Coulomb, Superposition	1/23: Ch. 2.1.3-4: E-field, integrating continuous charge distributions
1/28: Ch. 2.2.1-3: Field lines & Flux, Gauss' Law, applications	1/30: Ch. 1.2, 2.2.1-4: Del, Gauss's Theorem, Stokes' Theorem & work
2/4: Ch. 2.3.1-3: Electric Potential, Poisson's Equation	2/6: Ch. 2.3-4: Summary, Work and energy in electrostatics
2/11: **EXAM I**	2/13: Ch. 2.5: Conductors and capacitors
2/18: Ch. 2.5.4, 3.1.1-5: Energy of a capacitor, Poisson's Equation: Relaxation	2/20: These notes, Ch. 3.2: Poisson's Equation: Relaxation & Images Art: 1, 2, 3, Relaxation
2/25: Ch. 3.3.2, 3.4.1: Poisson: Separation of variables, Multipole expansion, (Images handout)	2/27: Ch. 3.4.2-4: Multipoles, esp. dipole fields
3/4: **EXAM II**	3/6: These notes, plus Skim Ch. 4: Dielectrics
3/11: *Spring break*	3/13: *Spring break*
3/18: Ch. 5.1: Lorentz force, Current, Right hand rules	3/20: Ch. 5.2: Right hand rules, Magnetism, Biot & Savart
3/25: Ch. 7.1.1-2: Ch. 5.3, 5.1.3: Ampère's Law, current density, monopoles	3/27: Emf, Ohm's law, drift velocity
4/1: Handouts, these notes, *poem*: Rowland, resistivity, Hall effect	4/3: Ch. 7.1.3-7.2.2: Motional Emf, Faraday's Law
4/8: **EXAM III**	4/10: Ch. 7.3: Ch. 7.2.3-4: Lenz' Law, Inductance, Magnetic energy
4/15: Maxwell's Equations, symmetry	4/17: 9.2: Solutions to Maxwell's Equations, electromagnetic waves
4/22: 9.3, handout: Waves in matter, Snell's law, Fresnel's Eqs.	4/24: Ch. 11.1.2 & handout: Dipole radiation, Rayleigh scattering
4/29: Ch. 12.3.2, Purcell Ch. 5: E-fields of moving particles	5/1: Ch. 12.3.1, Purcell Ch. 5: Electrostatics + relativity = magnetostatics

FINAL EXAM: Tuesday, May 6, from 1:30 to 4:30am.

ACADEMIC HONESTY: SELECTIONS FROM THE SLU STUDENT HANDBOOK

All students at St. Lawrence University are bound by honor to maintain the highest level of academic integrity. By virtue of membership in the St. Lawrence community, every student accepts the responsibility to know the rules of academic honesty, to abide by them at all times, and to encourage all others to do the same.

Responsibility for avoiding behavior or situations from which academic dishonesty may be inferred rests entirely with the students. Claims of ignorance, unintentional error, and academic or personal pressure are not excuses for academic

dishonesty. Students should be sure to learn from faculty what is expected as their own work and how the work of other people should be acknowledged. Instructors are expected to maintain conditions which promote academic honesty.

Instructors have the duty to investigate any instance involving possible academic dishonesty and must present evidence of academic dishonesty to the Academic Honor Council rather than make private arrangements with the student involved. Violations of the St. Lawrence University Code of Academic Honor are administered under the constitution of the Academic Honor Council [See Student Handbook for the Constitution].

Academic Honesty

The primary objective of the University is the promotion of knowledge. This objective can be furthered only if there is strict adherence to scrupulous standards of honesty. At St. Lawrence, all members of the University community have a responsibility to see that standards of honesty and integrity are maintained.
Students who respect academic honesty and who are orderly and meticulous in their treatment of both their own work and the work of others should anticipate no difficulty with cheating, plagiarism, or other forms of academic dishonesty. Borrowing ideas or language from others is acceptable scholarly practice and in many instances actively to be encouraged.

Academic dishonesty generally arises from one of two sources: either a student has knowingly cheated or plagiarized or he/she has been careless or slipshod in discriminating between his/her own work and that of others or in acknowledging sources accurately. These latter difficulties are easily circumvented. Any standard handbook on English usage or term paper writing manual will furnish a methodology as well as appropriate internal reference, endnote, or bibliographical forms (cf., for example, the *Harbrace Handbook, A Guide to MLA Documentation, or Writers Inc.*).

A major objective of the University is the pursuit of knowledge which can be achieved only by strict adherence to standards of honesty. At St. Lawrence, all members of the community have a responsibility to see that these standards are maintained.

Academic Dishonesty
1. It is assumed that all work submitted for credit is done by the student unless the instructor gives specific permission for collaboration.
2. Cheating on examinations and tests consists of knowingly giving or using or attempting to use unauthorized assistance during examinations or tests.
3. Dishonesty in work outside of examinations and tests consists of handing in for credit as original work that which is not original, where originality is required.

The following constitute examples of academic dishonesty:
a. Plagiarism: Presenting as one's own work the work of another person - words, ideas, data, evidence, thoughts, information, organizing principles, or style of presentation-without proper attribution. Plagiarism includes paraphrasing or summarizing without acknowledgment by quotation marks, footnotes, endnotes, or other indices of reference (cf. Joseph F. Trimmer, A Guide to MLA Documentation).
b. Handing in false reports on any experiment.
c. Handing in a book report on a book one has not read.
d. Falsification of attendance records of a laboratory or other class meeting.
e. Supplying information to another student knowing that such information will be used in a dishonest way.
f. Submission of work (papers, journal abstracts, etc.) which has received credit in a previous course to satisfy the requirement(s) of a second course without the knowledge and permission of the instructor of the second course.

Claims of ignorance and academic or personal pressure are unacceptable as excuses for academic dishonesty. Students must learn what constitutes one's own work and how the work of others must be acknowledged.

St. Lawrence students are required to sign the following statement prior to registration for classes:

"I hereby acknowledge that I have read the above document and I understand my responsibility in maintaining the standards of academic honesty at St. Lawrence University."

Return to Koon's homepage