Course Syllabus

PHYS 3411.001 Theoretical Physics Fall 2014

Professor Contact Information

Instructor: Paul Mac Alevey
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Phone: extension 4634
E-mail: paulmac@utdallas.edu I will send e-mail to UTD e-mail addresses only. Regulations prevent me from sending some information to any other e-mail address.
Mailbox: in PHY 1.506

The class meets 43 times (inclusive of midterm tests but exclusive of the final) on Mondays, Wednesdays & Fridays at 1:00 – 2:15 in PHY 1.202. The final is scheduled by the University and hasn't arranged it yet…

Office hours

Instructor: MWF 2:45 to 3:45 or by appointment. (If there is nobody at my office at 2:45, I'll wait until 3:10 before I leave.)

I do not use office hours *primarily* for the purposes of distributing hints to homework problems. If I am asked about a homework problem then my response will be to ask you what you have done. Please be ready to write something. I don't intend to do your homework for you. After talking to me, I intend that you'll be on-the-right-track to solve the problem yourself! On the other hand, many students from previous semesters should have gone to office hours but didn't. Don't expect that you can 'get-by' with minimal effort. What you get out of this class largely depends on your own efforts.

TA: Ji Yao jxy131230@utdallas.edu Hours; TBA

Course Pre-requisites, Co-requisites, and/or Other Restrictions

You need to have done:

MATH 2415 (Calculus of Several Variables) or MATH 2419 (Calculus II),
PHYS 2326 (Electromagnetism and Waves) or PHYS 2422 (Honors Physics II.)
MATH 2418 (Linear Algebra) or equivalent

You need to be doing:

MATH 2420 (Differential Equations with Applications) or equivalent.

PHYS 3411 is a pre-requisite for many other physics courses and needs to be thoroughly understood for success in the physics classes that follow it.

Course Description

PHYS 3411 Theoretical Physics (4 semester hours) Complex numbers; Vector spaces and linear operators; Line integrals; surface & volume integrals; Gradient, divergence & curl; vector integral theorems; Fourier series; Product solutions of PDEs

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Student Learning Objectives/Outcomes

- Given a physical model (that involves a partial differential equation and boundary conditions), students will find a solution of the equation that fits the boundary conditions.
- Students will choose an appropriate technique of 'index notation' (Cartesian only) to generate a proof of a given vector or matrix identity
- Students will Fourier-analyze functions into Fourier series. Given a function (of one variable), students will find the infinite sets of Fourier coefficients.

Required Textbooks and Materials

We will use the book **"Mathematical Methods in the Physical Sciences"** by Mary L. Boas **3rd Edition**, ISBN: 0-471-19826-9. (You can get it at the campus bookstore, off-campus books, Amazon.com etc…. I don't mind if you buy it new or used but I think that it is worth keeping the book if you will be doing more Physics courses.)

I will be assigning homework from the book and assume that you have access to it.

Suggested Course Materials

You should have writing equipment at all meetings of the class. (You only need a 'scientific' calculator.)

Assignments & Academic Calendar

This class is not intended to be the same as other Physics classes. PHYS 3411 is a class of mathematical methods. The practical application of those methods will often appear in other Physics classes. The techniques developed in this course have been chosen by other members of the faculty who intend to use them in their courses.

I'll begin with Complex Numbers (Chapter two). It is a straight-forward chapter about the algebra of complex numbers and you may have seen some of it already.

One of the prerequisites is a course in linear algebra so I'll assume that you know much of the linear algebra in chapter three. This assumption isn't true about Index notation. While index notation is a topic in linear algebra, it is rarely done in most linear algebra courses. However,

you need it in your physics courses so I'll spend time doing the topic. It appears in the book but isn't very thoroughly developed there. ***I'll give you a couple of 'handouts' that I expect you to use***. (Versions from last semester are on the eLearning site but I'll update them and give you hard-copies as the semester progresses.) This notation turns out to be a powerful tool that is useful in vector analysis. There aren't many textbook-references to this topic so you'll need to be sure to think about it yourself and ask me questions that arise.

I'll skip chapter four because the topics in this chapter have already been done in calculus II (MATH 2419) and/or calculus of several variables (MATH 2415). We'll study chapter five this semester. This will allow us to find volumes of 3-D regions, areas of 2-D regions and flux integrals of the sort that appear in Maxwell's equations.

We will spend time on 'Classical Vector Analysis' (chapter six) and the vector integral theorems (also in chapter six). You'll constantly be meeting grad, div and curl in other Physics courses and I'll continue to use index notation to get identities that involve these operators as well as other vector identities. Index notation will appear again in connection with identities that involve grad, div and curl. I have another handout to give you then. (It might also help if you read the article from the American Journal of Physics by A. Evett. I'll post it on eLearning). I want to do the sections about eigenvectors & eigenvalues at this stage.

Expansion of functions in series is an important idea in Physics. Not all physically interesting functions are 'well-behaved' (such as being continuous and differentiable everywhere). Expansion of functions as power series assumes that that they are. An important topic is the representation of physically interesting functions that aren't so well behaved. Surprisingly, this can often be done by writing a function as the sum of a series of *sines* and *cosines* – a Fourier Series. We'll see how to do this in Chapter seven.

Many physical phenomena involve solutions of a Partial Differential Equation (PDEs are in chapter 13). If the PDE governing the phenomenon is known then it is of immediate interest to solve the PDE. We look at a technique that separates a PDE in *N* variables into *N* ODEs. Finding the solution to a PDE thus involves finding the solutions to the *N* ODEs. We will use this technique in Cartesian coordinates in the first sections of Chapter 13. In sections following 13.4, PDEs have to be solved in cylindrical and spherical (or circular) regions. While you are quite familiar with some ODEs, less familiar ODEs (Legendre's & Bessel's ODEs) arise in connection with separation of variables in these other regions. Chapter 12 is necessary to examine these ODEs and their solutions before we can continue with Chapter 13. If we are lucky then you'll know enough from your course in differential equations to make this possible. (If not, I'll review some things that might be helpful.) Some familiarity with Legendre polynomials and Bessel functions will be useful to you by the time we reach section 13.5.

A **tentative** schedule for the course is as follows;

	Date	Meeting	Aims
Monday	Aug 25	1	Introduction
Wednesday	Aug 27	2	2.1 – 2.2, 2.3, 2.4, 2.5
Friday	Aug 29	3	2.9 (Euler's relation for e^{iy} where $y \in \mathbb{R}$) 2.6 (Series), 2.7(more series)
Monday	Sept 1		*LaborDay – no class*
Wednesday	Sept 3	4	integral of complex quantities - 2.11, 2.12 (??) 2.8 (Defining e^z where $z \in \mathbb{C}$), 2.12 (Hyperbolic functions)
Friday	Sept 5	5	Handout 1: Beginning Index notation Two kinds of indices & the Summation Convention
Monday	Sept 8	6	3.9* Kronecker delta, Levi-Civita symbol from section 10.5, Cross Product [for now, there is no need to work beyond example 2!], Vector identities – handout 2
Wednesday	Sept 10	7	Matrices and index notation from section 3.2, Handout 3 on "more useful theorems" 3.11 Eigenvectors
Friday	Sept 12	8	5.1, 5.2
Monday	Sept 15	9	5.3 Moments of inertia
Wednesday	Sept 17	10	5.4 transforming integrals from one coordinate system to another with Jacobians
Friday	Sept 19	11	6.4 Unit vectors in polar coordinates
Monday	Sept 22	12	**First Midterm**
Wednesday	Sept 24	13	6.9 Green's theorem (in the plane), 6.11 Stokes' theorem,
Friday	Sept 26	14	6.8 Potential Potential continued (finding a potential given a [conservative] force), 6.10 Divergence theorem
Monday	Sept 29	15	6.10 Divergence theorem continued More 3.11; Rotation matrices and matrices that represent deformations/physical transformations. 3.12 Application of Diagonalization (just examples 1 & 2 about conic sections), [maybe; 3.6 similarity and unitary transformations]
Wednesday	Oct 1	16	6.7 Del Operator; handout 4 [Work through the small part of section 10.5 about curl. It is after example 2 and before the subsection on dual tensors.]
Friday	Oct 3	17	Worksheet on identities
Monday	Oct 6	18	Review of worksheet on vector identities
Wednesday	Oct 8	19	Review of worksheet on vector identities
Friday	Oct 10	20	#5 on sheet
Monday	Oct 13	21	7.1 Fourier Series,
Wednesday	Oct 15	22	7.4 Average Value of a function 7.5 Coefficients in Fourier Expansions
Friday	Oct 17	23	7.6 Dirichlet's theorem, Beginning of section 7.9; Fourier coefficients of odd & even functions in $[-\pi, \pi]$. 7.8 Fourier Series in $(-l, l)$

* In section 3.9 Boas writes A_{ik}^T when she means the ik^{th} element of the matrix A^T. At first might appear that she is trying to transpose a number but this doesn't make sense and isn't what she means. By A_{ik}^T, she means $(A^T)_{ik}$; the 'ik' element of matrix A^T . I'll always ask you to include the extra pair of brackets so that vector & matrix notation is never confused with index notation.

Monday	Oct 20	24	7.8 Fourier Series in $(-l, l)$, End of 7.9: Fourier coefficients of odd & even functions in $[-l, l]$.
Wednesday	Oct 22	25	7.10 decomposition of a sound signal
Friday	Oct 24	26	7.11 Parseval's equality – for sine/cosine series, Example of Parseval's equality 7.7 Complex Fourier Series as an expansion on $\{e^{inx}\}_{n=0}^{\infty}$ & example
Monday	Oct 27	27	Parseval for the complex exponential form of Fourier Series, [maybe: 7.12 Fourier Integral, Parseval's theorem for Fourier Transforms]
Wednesday	Oct 29	28	**Second Midterm**
Friday	Oct 31	29	Another perspective on complex Fourier Series
Monday	Nov 3	30	13.2 finite plate - solving PDEs by separating variables
Wednesday	Nov 5	31	13.2 finite plate continued , handout of steps for solving PDEs
Friday	Nov 7	32	Worksheet on 13.2
Monday	Nov 10	33	Review worksheet on 13.2 Using superposition to generate solutions of PDEs
Wednesday	Nov 12	34	Heat equation in a slab 13.3, Worksheet on 13.3
Friday	Nov 14	35	Series solutions of linear ODEs (12.1 & 12.11)
Monday	Nov 17	36	12.2 Convergent solutions of Legendre's equation - Legendre Polynomials
Wednesday	Nov 19	37	12.12 First solution of Bessel's equation - $J_p(x)$ 12.13 Second solution of Bessel's equation - $N_p(x)$ (Neumann functions) [brief!]
Friday	Nov 21	38	Handout on 13.7 (Separation of variables in spherical coordinates)Return to radial ODE in 13.7 Last BC in 13.7 to get to 12.9 Legendre series
Monday	Nov 24		*Fall break*
Wednesday	Nov 26		*Fall break*
Friday	Nov 28		*Fall break*
Monday	Dec 1	39	13.5 Separation in cylindrical coordinates
Wednesday	Dec 3	40	13.6 Worksheet on drumhead
Friday	Dec 5	41	More 13.6 Worksheet on drumhead
Monday	Dec 8	42	Review drumhead problem
Wednesday	Dec 10	43	Orthogonality of Legendre 12.7
	TBA	**Final (comprehensive)**	

The University arranges the time for the final exam. Please check the UTD web page to check the scheduled time just before this exam.
http://www.utdallas.edu/student/registrar/finals/

I want to assign on Wednesdays with **due** dates **on Friday at the <u>beginning of class 9 days later</u>. I'll send an email to you but (with a few exceptions) will draw homework questions from the following list.**

Section	Question Numbers (Maximum points in parentheses)
2.5	9 (3), 20 (9), 27 (3), 47 (18)
2.6	11 (9)
2.7	10 (6)
2.8	2 (6)
2.9	37 (4) make sure that you use polar form as in the instructions for the question!
2.11	12 (12), 18 (12)
2.12	31 (9)
3.2	1 (6)
3.9	7 (6), 13 [Use matrix notation] (9), 14 [Use matrix notation] (6), 18 [Use index notation] (12)
3.11	4(12), 21 (24), [**Write** the following check on your calculations; Check that the sum of the eigenvalues equals the trace of the original matrix, and that the product of the eigenvalues equals the determinant of the original matrix. ANS. $\lambda = -1, -2, 2$] 34(6) Extra Credit: 33 (24) This one is long. Don't spend much time with it unless you have done everything else
3.12	6 (12)
5.2	3 (4), 9 (6), 25 (6), 29 (6)
5.3	2 (9), 5 (12), 6 (18), Extra credit 31 (9)
5.4	2 (9) parts a, b and c, 7 (18), 13 (9), 20 [Give a diagram of the region of integration in the *x & y* coordinates and another in the *r & s* coordinates. I found her hints much more useful than problem 19] (18)
6.4	4 (4)
6.7	8 (6), 15 (6), 17 [**You must** use index notation to do the following parts] b (9), d (12), g (12), h (9), i (12), j (12) {The identities only need to be shown in rectangular coordinates. Use of section 9 from chapter 10 is not necessary. In part (j), think of the right-hand-side as involving two pairs of terms; the first and second terms and the third and fourth terms.}
6.8	5 (12), 15 (12), 17 (12)
6.9	3 (6), 9 (18) {The centroid of a 2-D object is at coordinates $(\tilde{x}, \tilde{y})$ where $\bar{x} = \frac{\iint x dA}{\iint dA}$ and $\bar{y} = \frac{\iint y dA}{\iint dA}$}, 12 (18) (The curve given is not closed. [But if you think about it, you can find a way to use Green's theorem if you want.])
6.10	5 (12), 6 (6) Divergence thm.
6.11	7 (9), 9 (6), 11 (9), 16 (12)
7.4	2 (18), 7 (12)
7.5	2 (12), 7 (12)
7.6	2 (6)
7.7	2 (12)
7.8	12 (24)

7.9	1 [Simplify your answer] (6), 13 (12), 21 (24)
7.10	2 (9), 8 (12)
7.11	5 (8), 7 (12)
7.12	8 (9)
12.1	8 (18) [Check your 'series' by substitution of your solution back into the ODE.]
12.2	2 (6)
12.11	2 (18), 10 (24) I'
13.1	3 (6)
13.2	2 (12), 14 (18)
13.3	2 (18) [The bar is thin so it has only one dimension. It lies along the x-axis and only the curved surface is insulated. (The faces of the bar aren't insulated.) The response of the rod is not instantaneous so the temperature of both ends at t = 0 is still 100.] 8 (18) [The bar is thin and a superposition of solutions is useful.]
13.4	1 (18) [You can use the result $\int x \sin ax dx = \frac{1}{a^2}\sin ax - \frac{x}{a}\cos ax$,] 2 (9)

If time allows then I might also assign the following:

12.3	6 (24). The question is really; "Show that $D^n(uv) = \sum_{j=0}^{n} \binom{n}{j} [D^{n-j}u][D^j v]$ where $\binom{n}{j} \equiv \frac{n!}{j!(n-j)!}$ and where u and v are differentiable functions"
12.4	4 (15)
12.5	11 (6)
12.6	1 (6)
12.7	3 (8)
12.12	1 (9)

I intend to post solutions on the eLearning site after the due date. **In general, late homework is not given credit**. (*Homework is late if it submitted after the beginning of the class in which it is due*.)

To use eLearning, you have to have a login ID and password. The eLearning server is at https://elearning.utdallas.edu/webapps/portal/frameset.jsp The solutions are protected with a password. (It is the word ***methods.***) The intent of this password is to keep the solutions private to members of this class this semester. ***If you have any hard-copy solutions to problems in Boas' book, then I require that you destroy them (or give them to me) now.*** Copying solutions as a substitute for doing a problem yourself ***almost guarantees poor performance on exams***. The solutions can be opened with Acrobat 5 or later http://www.adobe.com/products/acrobat/readstep2.html. It is intended that the solutions get you started so that you can produce a complete solution later.

You will also need to **check the preferences used by your browser** from the 'check browser' link on the first page that you get after log-into eLearning. (eLearning uses pop-ups intensively. Use your internet options to make the site a 'trusted site'.)

- I do not intend to cover all sections in the text
- I do not intend to follow the order in which the material is presented in the text
- I intend to present some material in the text in a slightly different fashion from the text. Please take good notes!
- **Test** dates won't change. Content of tests may change but will not include material in chapters/sections that have not been treated in class.

Grading Policy:

I intend to use a grade scale as follows. If x is a score then,

$x \geq 95$	A+
$95 > x \geq 90$	A
$90 > x \geq 85$	A-
$85 > x \geq 75$	B+
$75 > x \geq 65$	B
$65 > x \geq 60$	B-
$60 > x \geq 55$	C+
$55 > x \geq 50$	C
$50 > x \geq 45$	C-
$45 > x \geq 40$	D+
$40 > x \geq 35$	D
$35 > x \geq 30$	D-
$30 > x$	F

Grades of **D+, D or D-** are not indications that the student should do further courses in the Physics department in the following semester. Such **course grades indicate that this course should be repeated.** (A grade of C doesn't indicate that all is well either.)

Weighting:	Homework	15%
	Midterm tests	25% each
	comprehensive Final Exam	35%

I do not intend to use a curve in my grading of individual tests. A grade of X (incomplete) is awarded if an unforeseen, non-academic emergency prevents a student from completing the work in a course. If an incomplete is given, the course must be completed within eight weeks of the first class day of the next long semester.

In general my tests are 'closed book' and 'closed notes'. ***I tend to embed reference material and some long equations in my tests***. I have found that the main difficulty with tests is not with remembering equations (though remembering helps!) but in knowing how to use them. **All books, notes, backpacks, cell phones, etc. are to be placed by the sides of the room during a test**. (By the way, *don't spend too long erasing mistakes when writing answers to* ***test***

questions. Begin again and **label the correct version** so that I can find it. Partial answers may tell me something.)

Use of ***scientific*** calculators is ***allowed on tests***. However, ***graphing and programmable calculators*** are ***not allowed***. None of the test questions that I ask will involve lots of number crunching. **Valid UT-D student cards must be available if requested during tests**. (You can get one made at the info depot in the student union building; SU 2.204.)

Missed tests can only be made up in the case of documented, extenuating circumstances. Such circumstances include medical emergencies and work-related travel that cannot be re-scheduled.

If a student wants to discontinue the course because a poor grade is expected, it is more appropriate for the student to withdraw from the course and re-register in another semester.

Course & Instructor Policies

Boas gives a bibliography at the end of her book. If you want more information about any of the topics that she covers then I suggest looking for these references in the library.

Homework in this class takes the form of doing sets of questions. I intend to send you an e-mail (on eLearning) on either Wednesday evening (or Thursday morning). Solutions are **due at the beginning of class** on the **Friday of the following week.** However, you don't have to wait for me to formally assign homework before you begin on the questions. ***As soon as we finish section 2.5, consider problem 2.5.9 to have been assigned etc***. (You will usually be right!).

Begin your homework as soon as you can because some problems are too difficult for a last-minute effort. Work out homework roughly before writing out a 'clean' version for submission as homework. ***The final version should explain what you are doing and not just contain calculations***. When grading your work, the grader will be trying to understand your reasoning. Help him/her by saying what you are trying to do! ***Homework with no comments or partly scratched out answers gets less credit***. (On the 'plus' side, taking the time to do this will give you a useful resource for exam review.) It should be written on paper with neat edges (rather than being on pages that are torn out of a spiral notebook. **Scratched out answers, partial erasing etc. is unacceptable**. **If your work can't be read then you should expect that your work will be returned with a request that you produce a neater version that the TA can read**. (Expect a 20% penalty if you are asked to rewrite your work.)

Please **staple** your homework together. Loose pages get lost among a pile of papers. Paperclips have their uses but they don't stay attached when in a pile of papers.

Feel free to form study groups etc but it is important to **hand in work that is your own**. ***At any point during the semester, I will feel free to ask any member of the class to explain any aspect of a homework problem to me.***

In addition to the homework problems that are handed in for grading, I suggest that you work problems other than homework problems. Get a notebook to be used for extra questions that you try that are not part of assigned homework. (Everyone should do more questions than the ones assigned for homework. (You'll want to know which questions to try. You can answer this

by simply trying the question. If you can finish it then you have your answer! If you can't do the question then ask me. It may involve a topic in the book that 3411 doesn't include. But it might be very relevant but is just asked in a way that you don't expect.

Study methods:

Perhaps these suggestions are familiar to you already. At any rate, here they are.

Many people don't figure out how to study until late in their academic careers. One question to sort out is at what time you study best. Some prefer mornings before they get too busy with other things. Others prefer afternoon or evening. Find out which time suits you best and use that time!

Some people are under the impression that, to do much work, a long session of study is needed. While a few minutes are not enough for a study session, study in 30-minute sessions is useful. Despite the best of intentions, studying the same topic for several hours can involve lots of wasted time. The lack of an imminent deadline allows you to lose focus. People tend to be most productive at the beginning of a session (when they are still fresh) and near the end (as the deadline approaches). It is important to realize that you can still 'spend a few hours studying'. Just change topic when you get to the end of your 30-minute study period.

Before you begin studying, assemble all the materials (books, pens etc.) that you will need. Tightly scheduled 30-minute study periods don't include time to look for books, sharpen pencils and borrow calculators etc! Few of us work well when we are tired. Do feel free to schedule breaks in your study. Just make sure that the 'breaks' don't get too long!

Make a (written) plan before you start to study. Your plan should sketch out what you want to accomplish. Unless you do, lots of time can be spent vaguely thinking about what to do next.) Make this plan as specific as possible: the more precise you are in your goals, the better you know if you reach them. Please be realistic about your aims for a study session. Rather than have a single goal of 'getting an *A* in a certain course', we often do better by establishing lots of minor goals that involve understanding certain sections of a text or doing certain problems. Modest goals are reached more often than overly ambitious ones and achieving them gives you the feeling of getting things accomplished. The plan does not have to be carefully written. You just don't want to spend a study period 'drifting' along and achieving nothing. Planning the topics to be studied in a study session is not 'studying' and is not part of your 30-minute study period! Just spend a few minutes before you begin studying in deciding what you need to get done.

In addition to the above, I would suggest a very simple strategy that worked very well for me. Review your lecture notes before a day has passed since the lecture (and certainly before the next one in that series of lectures). The aim is to review the lecture before you have time to forget what happened! There are several reasons for doing this. One is that you can't have written everything down (and I don't expect you to.) Some things may have been said but not written on the markerboard. There might have been some connection that you noticed to another topic or another class. While there might not have been enough time to note it down, I don't want you to forget any insight that you had. It will come to you again as you review your notes soon after writing them in the lecture. Another reason for reviewing notes soon after

writing them is that after hearing and following along line-by-line during the lecture, the review gives you time to ask yourself about where the topic is going and how it fits into the series of lectures being presented.

The next step is to re-write your lecture notes. Instead of writing them verbatim, include any insights or connections that you have spotted. Also, be on the lookout for anything that doesn't make sense. Maybe a line of algebra has been skipped or maybe there is simply an error…. In any event, make the addition to your notes. (If something question emerges, do ask me! I have office hours quite often and **I don't get nearly enough questions about lecture material**. Lectures do take quite a while to prepare and it is good to know that someone notices links to other topics.)

Finally, summarize your reviewed notes. You will want condensed summaries for study before a test. Generate the summary that makes most sense to you. Notice that most of my comments are on the time-scale of a lecture or two. I have not referred to doing tests. However, doing tests becomes much easier if you truly stay 'on top of things' as I have suggested.

Dishonesty:

I would like to emphasize a point about the use of secondary sources etc. I do not object to people discussing problems that they have already attempted**. I do not object to the use of any other textbooks that you come across.** I object strongly to any verbatim, unacknowledged work done by anyone other than you that is presented as part of your work. **(This includes any passages from textbooks, any solutions that you come across in hard copy or on eLearning etc. It also includes work produced by any member of the class [past or present]). Every student in the course agrees to this limitation. Further, all students agree to tell me the source of any solution to any problem assigned in PHYS 3411 that they know about. No materials posted on the eLearning site become the property of the student. At the conclusion of the course, all students undertake to keep all course materials** (posted solutions, graded homework etc.) **for their exclusive use. Any distribution of course materials to third parties constitutes academic dishonesty and will be reported to the Dean of Students.**

In order to further the objective of eliminating scholastic dishonesty, the University has a policy on scholastic dishonesty. This policy is clearly articulated in Subchapter F section 49.36 of the policy on student discipline & conduct adopted by the University and used in this course. A link to chapter 49 is at http://www.utdallas.edu/deanofstudents/titlev/ . Students enrolling in the course are bound by this policy and are encouraged to read it. Any questions about this policy can be asked of the Dean of Students. **Any suspected cases of scholastic dishonesty will be passed along to the Dean of Students**.

Students are welcome to ask questions of my TA or me about homework problems. However, I do not authorize these students to communicate such discussions to other students. These other students are welcome to ask me questions too.

The eLearning site contains postings exclusively for the use of the person with the privilege accessing the site. Materials on this site form another secondary source that is intended to help students in my class during the semester that the posting is made. No materials posted on the eLearning site become the property of a student. **Students acknowledge that distribution/transmission of any posting made on the eLearning site**

constitutes scholastic dishonesty. (See parts (d) 1 and (d) 5 of section 49.36 of the policy on student discipline & conduct.)

The question about eLearning can be extended. I will treat in the same way any pre-existing solution to a problem assigned as homework in a previous semester, a solution to a problem asked on a test, or any problem from the book. **As soon as any student in this course comes across any kind of pre-existing solution, that student must inform me of its existence and source. To do otherwise is to aid copying. (See part d (1) of section 49.36.)** In order to maintain privacy, I can be contacted by e-mail if desired.

A note about missing classes

First of all, please try not to! **If something arises that prevents you from attending class, please inform me as to why by e-mail**. Not everything that we do in class is covered in any single textbook. By missing class, you will miss either something not covered by the book that you are reading, or you will miss 'intermediate steps' in an author's argument that will help you follow along. You also pass up the opportunity to ask questions of your own and miss out on hearing the questions of others. (This latter point is significant. Other students may ask questions that haven't occurred to you yet and hence develop your understanding of the subject.)

If you **have** to miss class for some reason then it is your responsibility to get class notes or handouts given in class. Please do this quickly after your absence. (I'm not keeping tabs on your attendance and leave some of the responsibility to you.) In order to understand the next lecture, you will need to have obtained and worked through any notes etc. from the previous lecture. I give lectures from my own 'outline notes' that are probably not what you need. If you miss a lecture then your best source of class notes is another student who wrote down exactly what we actually did.

I tend to return graded homework and tests in class. Again, you'll miss this if you are absent from class. After I have tried to return the graded work to you a class from which you were absent, the responsibility for getting it from me becomes yours.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the deal will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:
The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.