Course Syllabus

PHYS 5401.501 Mathematical Methods in Physics Fall 2008

Professor Contact Information

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The 30 meetings of the class (inclusive of midterm tests) will be on Tuesdays and Thursdays in CBW 1.105 from 7:00 PM to 8:45 PM.

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

There are no formal pre- or co-requisites for this class **but I assume that anyone enrolling in PHYS 5401 has taken calculus of one and many (real) variables and a course differential equations**. **An important pre-requisite** is not a course but **is <u>your time</u>! You have to be willing to spend time with the material**. If you take it seriously, this course may be one of the more challenging in which you have enrolled. I also hope that it proves to be a rewarding course irrespective of your particular area of research. This course develops many mathematical techniques that you will come across while doing other physics courses or while doing research.

Office hours: Tuesday and Thursday 2:00-3:00 or by appointment.

I am quite happy to see you at these times. However, I do not use office hours just 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. (Vague answers won't do. Expect me to ask you to write something.) I don't intend to do your homework for you. I expect that we will arrive at something to try. After talking to me, I expect that you have enough to go about solving the problem yourself!

TA:	Bob Haaser; office ECSN 2.808	Robert.haaser@student.utdallas.edu Rah054000@utdallas.edu
	Hours;	TBA

Course Description:

Ch 1 **Vector Analysis (Index notation – Cartesian tensors)**

This chapter will bring us from the simplest definitions of vector analysis through the vector integral theorems to Dirac's delta 'function'.

You have seen vector notation for years but I'll define a Cartesian vector in a way that can be generalized into a treatment of tensors (that is in Math Methods II). We'll also see that our definition of a vector allows us to prove vector identities.

Ch 2 **Curved Coordinates and Tensors**

We just do a small part of this chapter. I just want to mention different kinds of components. (Tensor algebra will wait to math methods II.)

Ch 9 **Differential Equations**

We'll begin with section 9.2 on first order differential equations. Section 9.3 looks at separation of variables in PDE's. In separating PDEs in N variables, we produce N ODEs. Some of these ODEs are already familiar but some are new (and solutions of some of these ODEs are the 'special functions' in chapters 11 to 13). Section 9.5 introduces Frobenius' method. This is a very widely applicable method of trying to find a solution to an ODE. (Section 9.4 is brief and concerns singularities of ODEs.) Section 9.6 looks at finding a second linearly independent solution to an ODE.

Green Functions allow solutions of differential equations to be written as an integral. (Green Functions for differential operators L where $Ly \equiv \left(p(x)y'\right)' + q(x)y$ have especially nice properties. I will use section 10.5 to introduce these functions and continue them with section 9.7.

Ch 10 **Sturm-Liouville Theory**

This is an important chapter. Solutions of $Ly + \lambda w(x)y = 0$ are orthogonal if L can be made to satisfy a certain condition. (If this condition is satisfied, the operator is called 'Hermitian '.) Changing the eigenvalue λ can give us an infinite set of orthogonal functions. We can use the basis of these functions to expand more interesting functions. (You have done this in a couple of cases; $f(x) = \sum_{n=0}^{\infty} a_n x^n$ and $g(x) = \sum_{n=0}^{\infty} c_n e^{inx}$.) The infinite sets in those cases are $\{x^n\}_{n=0}^{\infty}$ and $\{e^{inx}\}_{n=0}^{\infty}$ but chapters 11, 12, 13 and 14 can be thought of as examples of expanding functions on a basis.

Ch 13 **Special Functions**

The first example(s) of finding a basis of functions is in this chapter. I aim to discuss Hermite and Laguerre functions. Notice that if the operator is specified (and it is if we have a particular physical problem in mind), we don't have a choice of the particular basis of functions to be used. However, a couple of sets of functions arise quite frequently.

Ch 12 **Legendre Functions**

This system is a bit more involved than either the Hermite or Laguerre functions. We will focus on the earlier sections that define the functions, find recurrence relations, examine their orthogonality and look at other definitions that you might see.

Ch 11 **Bessel Functions**

Found by F.W. Bessel in an application in astronomy, these functions arise naturally in discussions of many physical phenomena (vibrations of a drum, some modes in wave-guides etc). They are more complicated than Legendre functions. The first sections of this chapter show that Bessel functions arise in two kinds and look at the orthogonality of sets either kind. Section 11.4 introduces linear combinations of the independent solutions that have interesting asymptotic properties. Bessel functions are modified in section 11.5. I don't propose to look at asymptotic expansions but will treat Spherical Bessel Functions in 11.7.

Ch 15 **Integral Transforms**

I will focus on four sections of this chapter: 15.3, 15.4, 15.5 and 15.7. These look at Fourier transforms and the convolution of functions.

Student Learning Objectives/Outcomes:

- Students will choose an appropriate technique of tensor algebra (Cartesian only) to generate a proof of a given vector or matrix identity
- Given a differential equation and sufficient initial data, students will construct a Green function with which to solve the differential equation
- Given a generating function for Legendre polynomials, Hermite polynomials or Bessel functions, students will find recurrence relations for the special functions.
- Choose appropriate intervals over which certain functions are orthogonal.

More broadly, I hope that students will;

- increase their familiarity with a variety of mathematical techniques
- increase in confidence in setting-up a problem so that it can be solved mathematically

It is worth remembering that you will stop taking classes at some stage and focus all of you energies on research. By then, you will need to be able to suggest questions to yourself as the subject of your work. This is only one class but nevertheless, it is worth remembering where you are headed. I don't expect you to come up with research questions during this course! I do expect that you begin to ask questions about the topic as you review/rewrite your lecture notes.[1] You might want to ask yourself some of the 'big picture' questions such as how a certain topic fits in with other things that you know; how the topic might be approached differently etc. You might want to ask me about such questions but I expect you to begin answering them yourself. In this spirit, we might add another aim of the course;

- Ability to consider open-ended questions.

I intend to present some material in the text in a slightly different fashion to the text and intend to include material that is not in the text when I think it relevant. (This extra material may be included in lectures, in hard-copy 'handouts' to the class or in postings to the WebCT site.) **It is your responsibility to use these sources in addition to the textbook**.

Required Textbooks and Materials:

This course uses questions adapted from *Mathematical Methods for Physicists* (6th edition; 2005) by G. Arfken and H. Weber. (The good collection of problems is often cited as the best feature of the book.) **The adapted questions will be posted on WebCT and are the version of the questions to be done as homework**. The 'Additional Readings' at the end of every chapter are useful bibliographies. This book is a fairly good textbook and reference book.

In my undergraduate class, I use *Mathematical Methods in the Physical Sciences* by Mary L Boas. She covers much of the same ground that Arfken & Weber cover. While it is not (nominally) a graduate textbook, it is an excellent book to have. (By the way, the third edition came out in July 2005. That should mean that there are cheap second editions to be had…)

I also mention *Vector Analysis* M. R. Spiegel and *Linear Algebra* by S. Lipschutz and M. Lipson. (These are both Schaum Outlines and shouldn't cost too much.)

Some students that have done this course liked *Mathematical Physics* by Sadri Hassani. I am less familiar with *Mathematical Methods of Physics* by J. Matthews and R. L. Walker but this book was used for courses like 5401. *Modern Mathematical Methods for Physicists and Engineers* by C.D. Cantrell looks to be a very nice book.

Personally, I think that you should use as many useful sources as you can get your hands on. I do. There is always something right/wrong with every textbook. There is always

[1] I hope that the reference to 'reviewing/rewriting your notes didn't surprise you. By 'reviewing' I don't mean just checking that you actually have notes, handouts etc. I mean working through the algebra (pencil in hand) and following up on any questions that either I mention or that you think are worth considering.

some emphasis that you like/don't like. However, it is imperative that you **identify something that you can use** (at least for now) **and get down to work quickly**.

Suggested Course Materials:

You should have a calculator, pencil and pen at all meetings of the class and at all tests. (The calculator need only be a 'scientific' one.)

Assignments & Academic Calendar:

Homework in this class takes the form of doing sets of questions. Most of the question numbers below are from Arfken's book though a couple of questions are my own. I intend to send you an e-mail (on WebCT) on Tuesday evenings. This will have the numbers of questions whose answers are **due at the beginning of class** on the **Thursday nine days later.** However, please don't wait for me to formally assign homework before you begin on the questions. As soon as we finish section 1.5, consider problem 1.5.13 to have been assigned etc. (You will usually be right!). The homework questions are already on the WebCT site.

Sometimes I attach Word files to my e-mails. To get equations to display you need to install the Equation Editor from the MS Office disk. [Unfortunately, it is not part of the 'typical installation'.] To get the fonts for all symbols that I use, you need to install MathType. Their free, trial version is enough and is at http://www.mathtype.com/en/products/mathtype/trial.asp.

The questions that are assigned for homework are those posted on WebCT. Several changes from questions in the book have been made.

The numbers of the homework questions are:

Section	Question
1.5	13
1.6	5
1.7	2, 6
1.8	5, 9
1.9	8, 13
1.10	5
1.11	3, 10
1.12	4, 10
1.13	10
1.14	4
1.15	1.14.3, 8
2.1	6
2.4	5, 9, 14
2.5	19
9.2	5, 9
9.3	5
9.4	1
9.5	10, 16
9.6	7, 13

9.7	2
10.1	3, 9, 16, 17
10.2	5
10.3	7
10.4	10
10.5	12
11.1	4
11.2	2
12.1	7
12.2	2
12.3	3
12.4	2
12.5	11
12.6	1, 9.7.8
12.10	Legendre At Zero
13.1	8, 15
13.2	1, 6
15.3	
15.4	9.7.16

The TA will collect the homework that is due and return graded homework not less than one week later. I intend to post solutions on the WebCT site after the due date. Late homework is not accepted after solutions to questions have been posted on the WebCT site.

To use WebCT, you have to have a login ID/WebCT ID and password. The WebCT server is at http://webct6utdallas.edu. The solutions are protected with a password and can be opened with Acrobat 5 or later http://www.adobe.com/products/acrobat/readstep2.html. The password is **methods**. It is intended that the solutions get you 'on the right track' tat you will follow to produce a complete solution. If you have any hard-copy solutions to problems in Arfken's book, then I suggest that you destroy them. Using solutions as a substitute for doing a problem yourself almost guarantees poor performance on exams.

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 WebCT. (WebCT uses pop-ups intensively. Use your internet options to make the site a 'trusted site'.)

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

Date	Tentative schedule	Meeting
Aug 21	Vectors, Rigid Rotations in $\mathbb{R}^2$	1
Aug 26	Scalar Product	2
Aug 28	1.5 Vector Product, Triple Product	3
Sept 2	1.6, 1.7	4
Sept 4	1.8, brief mention of 1.9, 1.10 1.11	5
Sept 9	1.14,1.15, 1.12	6
Sept 11	1.13, 2.1 Physical components	7
Sept 16	2.4, 2.5 Cylindrical & Spherical coordinates	8
Sept 18	9.2 Differential Equations, 9.1	9
Sept 23	9.3, 9.5 (Except sections on singularities and Fuchs' Theorem.)	10
Sept 25	9.4 (in addition to sections on singularities and Fuchs' Theorem from section 9.5).	11
Sept 30	Variation of parameters, One Dimensional Green Functions (in section 10.5, pages 663 – 670), 9.7	12
Oct 2	Introduction to chapter 10.0	13
Oct 7	10.4, an example from 1.15(!), 10.5	14
Oct 9 (Thursday)	**Midterm I**	15
Oct 14	Self-Adjointness, Condition for Orthogonality (10.1 – 10.2), 10.3 Condition that an Operator be Hermitian	16
Oct 16	13.1 Hermite Polynomials	17
Oct 21	13.1 continued.	18
Oct 23	13.2 Laguerre	19
Oct 28	12.1, 12.2 Legendre	20
Oct 30	Rodrigues formula in 12.4, Bounds (in 12.2),12.3	21
Nov 4	12.10 Second Solution of Legendre's Equation	22
Nov 6	12.5 Orthogonality of Associated Legendre Functions	23
Nov 11	12.5 Normalization Integral for Associated Legendre Functions, 12.6	24
Nov 13	11.1 Bessel Functions of the First kind	25
Nov 18	11.2 Orthogonality of Bessel Functions	26
Nov 20	**Midterm II**	27
Nov 25	15.3, 15.4	28
Nov 27	*University closed. Happy Thanksgiving!*	
Dec 2	15.5	29
Dec 4	15.7 Transfer function	30

The University arranges the final exam. (It is on Tuesday Dec 16 at 7:00). Please check the UTD web page to check the scheduled time just before this exam.
http://www.utdallas.edu/student/registrar/finals/

- 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!
- **Expect that <u>my</u> 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:

The university calculates a GPA for graduate students based on the grades A, B, C, F, etc. However, the Physics department calculates a GPA based on grades A+, A, A-, B+, B, B-, etc. (If you are a PhD student in the Physics dept. and want to make a research proposal, then you need a GPA that corresponds to B+ in your courses at UTD.) Ask Margie for more details. 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-
$45 > x$	F

Weighting:	Homework	30%
	Midterm tests	20% each
	Final Exam	30%

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 a student wants to discontinue the course because a poor grade is expected, it is nearly always more appropriate for the student to withdraw from the course and re-register in another semester. 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 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. Versions that you can't get to work 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 and stamped/validated 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.

Course & Instructor Policies

Doing homework is an important part of the learning process. **Feel free to form study groups etc**. However, it is important to **hand in work that is your own**. When writing an answer to a question, it is important to write comments that explain both what you are trying to do and how you are trying to achieve it. In addition to the homework problems that are handed in for grading, I may suggest that you work problems other than homework problems. These are worth looking at as they improve your ability to solve problems.

In addition to helping you become familiar with the material, the homework will include problems that have longer solutions than problems on a test. Begin your homework when it is assigned; many problems are too difficult for a last-minute effort. 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 don't help you show this. For grading, present neat versions of your solutions to the TA. Answers that are indecipherable will not attract much credit. If needed, **I may ask any student to explain their work to me.**

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 and presented as part of your work**. (This includes any passages from textbooks, any solutions that you come across in hard copy or on WebCT etc. It also includes work produced by any other 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 problem assigned in PHYS 5401 that they know about. No materials posted on the WebCT site become the property of the student. At the conclusion of the course, all students undertake to keep all course materials 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/judicialaffairs/UTDJudicialAffairs-HOPV.html 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 WebCT 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 WebCT site become the property of a student. **Students acknowledge that distribution/transmission of any posting made on the WebCT 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 WebCT 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 PHYS 3312 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.

At the conclusion of the course, all students undertake to keep **all** course materials (posted solutions, graded homework etc.) for their exclusive use.

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. If there were an ideal textbook for us then there would be little or no need for classes. An ideal textbook does not exist. 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. (I'm not keeping tabs on your attendance and leave some of the responsibility to you.) Please do this quickly after your absence. In order to understand the next lecture given, you will need to have obtained and worked through any notes etc. from the previous lecture. I give lectures from 'outline notes' that are probably not what you want to read. If you miss a lecture then your best source of class notes is another student who wrote down exactly what we actually did. I return graded homework and tests primarily 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.
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> 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.