Differential Equations (MATH 30613-010) in Fall 2012

Room	Time
WIN 145	MWF 9–9:50 AM
Instructor	**E-mail**
Loren Spice	`l.spice@tcu.edu`
Office	**Office hours**
	MTuW 10–10:50 AM
TUC 315	F 8–8:50 AM
	and by appointment

TCU Online

`tcuglobal.edu`

Textbook Blanchard, Devaney, and Hall, *Differential equations*, with printed `DETools` access card.

Attendance Attendance is required. You must sign the attendance sheet **each class**, or you may be marked absent. For each exam, if you have attended **all** classes since the previous exam, you will receive 1 bonus point. Official Absences are not counted against your attendance. One un-official absence will be excused per exam.

Grading Course components will be weighted as follows:

Homeworks	Midterms	Final
25%	15% each (45% total)	30%

You can see your current weighted percentage on the course web-page at any time. If you think that a grade has been mis-computed, you must talk to me within 1 week of its being recorded.

Your course grade will be determined as follows:

Min. %	Min. Grade	Min. %	Min. Grade	Min. %	Min. Grade
90%	A-	94%	A		
80%	B-	84%	B	87%	B+
70%	C-	74%	C	77%	C+
60%	D-	64%	D	67%	D+

If you have earned less than 60% of the course credit, then you may receive an F. Exam and course grades may be curved.

Course goals

- Understand why differential equations are an appropriate tool for modelling real-world problems.
- Create and understand mathematical models of physical phenomena.
- Develop tools and techniques for solving differential equations, and interpreting their solutions.

We will also explore the theoretical, mathematical underpinnings of the subject of differential equations.

We will try to cover most of Chapters 1–4, and 6. Specific highlights of these chapters include separation of variables; change of variables; integrating factors; systems of linear equations, including eigenvalues and eigenvectors; springs and forced oscillation; and Laplace transforms.

Academic Conduct You must comply with the University's academic-conduct policies at

`http://www.catalog.tcu.edu/current_year/undergraduate/1411.htm`,

from which the following partial quote is taken.

Any act that violates the spirit of the academic conduct policy is considered academic misconduct. Specific examples include, but are not limited to:

A. **Cheating**. Includes, but is not limited to:

1. Copying from another student's test paper, laboratory report, other report, or computer files and listings.
2. Using in any academic exercise or academic setting, material and/or devices not authorized by the person in charge of the test.
3. Collaborating with or seeking aid from another student during an academic exercise without the permission of the person in charge of the exercise.
4. Knowingly using, buying, selling, stealing, transporting or soliciting in its entirety or in part, the contents of a test or other assignment unauthorized for release.
5. Substituting for another student, or permitting another student to substitute for oneself, in a manner that leads to misrepresentation of either or both students work.

B. **Plagiarism**. The appropriation, theft, purchase or obtaining by any means another's work, and the unacknowledged submission or incorporation of that work as one's own offered for credit. Appropriation includes the quoting or paraphrasing of another's work without giving credit therefore.

C. **Collusion**. The unauthorized collaboration with another in preparing work offered for credit.

D. **Abuse of resource materials**. Mutilating, destroying, concealing or stealing such materials.

E. **Computer misuse**. Unauthorized or illegal use of computer software or hardware through the TCU Computer Center or through any programs; terminals; or freestanding computers owned, leased or operated by TCU or any of its academic units for the purpose of affecting the academic standing of a student.

F. **Fabrication and falsification**. Unauthorized alteration or invention of any information or citation in an academic exercise. Falsification involves altering information for use in any academic exercise. Fabrication involves inventing or counterfeiting information for use in any academic exercise.

G. **Multiple submission**. The submission by the same individual of substantial portions of the same academic work (including oral reports) for credit more than once in the same or another class without authorization.

H. **Complicity in academic misconduct**. Helping another to commit an act of academic misconduct.

I. **Bearing false witness**. Knowingly and falsely accusing another student of academic misconduct.

Calculators and technology A graphing, but not a symbolic, calculator is **required** for the class (although it may be **forbidden** for selected problems). For Texas Instruments calculators, the acceptable model numbers are TI-83, TI-84, and TI-85. TI-89 calculators are **not** allowed. Other, discontinued, calculators, and other models, may be accepted, but you **must** check with me first.

`DETools` is also **required** for the class. A printed access card should be included with your textbook.

Homeworks Homeworks will be posted on the course web-page. Homeworks must be handed in to me **in person**. If you are not able to do so, then you may have a friend hand it in, or e-mail me a scanned copy by the due time. If an Official Absence will interfere with a due date, please let me know **in advance** so that we can make an appropriate adjustment. **Late** homeworks will not be accepted.

You may work with classmates on the homeworks, but you must write up your own work **independently**. Homeworks are due by the **end** of office hours or the **beginning** of class, whichever is later, on the class after they are assigned. The lowest homework grade will be dropped.

You should budget about **10 hours** per week for reviewing notes and doing homework. You **cannot** earn better than a C, regardless of exam scores, without satisfactory homework and quiz grades.

Midterms Midterms will be held in class on Fridays: **September 21**; **October 19**; and **November 16**.

Re-scheduling of exams will be provided **only** in case of an Official Absence; or at my discretion, for extreme, documented reasons. In either case, you must tell me **one week** in advance, or as soon as is reasonably possible.

The final exam will be **Monday, December 10, 8–10:30 AM**, in a location to be announced. The time is set by the registrar, and **not** subject to change. **Travel plans** are not a sufficient reason to miss a final.

Disability policy This course complies with the University disability statement at
`http://www.ugradcouncil.tcu.edu/forms/DisabilitiesStatement.doc`,
quoted in full below.

> Texas Christian University complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 regarding students with disabilities. Eligible students seeking accommodations should contact the Coordinator of Student Disabilities Services in the Center for Academic Services located in Sadler Hall, 1010. Accommodations are not retroactive, therefore, students should contact the Coordinator as soon as possible in the term for which they are seeking accommodations. Further information can be obtained from the Center for Academic Services, TCU Box 297710, Fort Worth, TX 76129, or at (817) 257-6567.

> Adequate time must be allowed to arrange accommodations and accommodations are not retroactive; therefore, students should contact the Coordinator as soon as possible in the academic term for which they are seeking accommodations. Each eligible student is responsible for presenting relevant, verifiable, professional documentation and/or assessment reports to the Coordinator. Guidelines for documentation may be found at `http://www.acs.tcu.edu/disability_documentation.asp`.

> Students with emergency medical information or needing special arrangements in case a building must be evacuated should discuss this information with their instructor/professor as soon as possible.