

MATH 1005A-WINTER 2013

DIFFERENTIAL EQUATIONS & INFINITE SERIES FOR ENG.&PHY. STUDENTS

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Office Hours: Wed. 1:00 - 2:00 p.m. , or by appointment.

Lectures: Tues. and Thur. 4:05 - 5:25 in AT 301. Classes begin Jan.7th, 2013.

Tutorials: Thursdays 2:35- 3:25 . Tutorials will start Jan.17 , 2013.

Textbook: “Ordinary Differential Equations and Infinite Series”.

By Sam Melkonian

Prerequisites: MATH 1004 , or a C- or better in MATH 1007 and an OAC Algebra & Geometry; or permission of the School. If you need further clarification, please see the Mathematics Undergraduate Advisor, Ken Small , room 4304 Herzberg Building, or call him at 520-2600 ext. 2150.

Calculators: You may use a non-programmable calculator for the tests and the final exam. The Sharp EL-510RB, or the Casio FX-260, or any other approved non-programmable calculator is acceptable.

Students with challenges who require academic accommodations are encouraged to contact a coordinator at the Paul Menton Center (500 University Center, tel.: 520-6608) to complete the necessary *letters of accommodation*. After registering with the PMC, make an appointment with me to meet and discuss your needs at least a week prior to the first test in order that sufficient time exists to make the necessary arrangements.

The **tutorials** are mandatory, I highly recommend that you attend them in order to ask questions of your TA regarding the homework or related issues. In addition, each TA will have either an office hour or scheduled time in the **Math Tutorial Center (1160 tunnel level)** where you can see them for extra help. You will be responsible for certain problems assigned from the text .

Three 50-minute tests have been scheduled during the tutorial hours on the following dates: **Jan.31, Feb. 28, and Mar. 21**. You are expected to take all of the tests. There will be no make up, early, or delayed tests. You get to drop your lowest test mark of the four, so that **the best two out of three tests**, which counts for **30% of your final grade, tutorials 10%**.

A **three-hour final exam** will be scheduled during the official exam period (April.13-27) at the end of the term. It will be based upon all of the material covered during the course. Some of the questions will be similar to those on problem sets and tests....

EVALUATION

Your final grade will be calculated as the larger of (i) or(ii) below:

- (i) A:=Term Mark out of 40% + Final Examination Mark out of 60%;
OR,
(ii) B:= Final examination Mark out of 100% whichever is the highest.

TERM MARK : The term mark will be derived from:
3 term tests **BUT** we choose the best 2/3, for (30/40)
AND
10% for the attendance at tutorials.

NOTE: The “ best of A and B” rules allow you to miss some of the term events for any reason(medical or otherwise). In other words, under normal circumstances, if you miss a test for a medical or other reason, then we still chose the best 2 out of 3 tests you have written.

Only under highly exceptional circumstances will a test be postponed to a later date.

Academic Accommodations: You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. Please review the course outline promptly and write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

It takes time to review and consider each request individually, and to arrange for accommodations where appropriate. Please make sure you respect these timelines particularly for in-class tests, mid-terms and final exams, as well as any change in due dates for papers.

Review of Final Exams: If you wish to review your exam please email the instructor to set up a convenient time to review the exam. If the instructor is unavailable, contact the associate director to set up an appointment to review your exam. Exams are only available for 3 weeks after the exam has been written. If you wish to review your exam after the three weeks, you must formally request to view your exam from Registrars office.

List of Topics

- 1. First-Order Equations (1.1,2.1-2.5).**
- 2. Second –Order Equations(3.1-3.4, 4.1-4.2)**
- 3. Linear Systems. Homogeneous Linear Systems (5.1, 5.2).**
- 4. Sequences. Series and convergence. The integral test and p-Series. Comparisons of Series. The Ratio and Root tests. Taylor Polynomials and Approximations. Power Series. Representation**

of Functions by Power Series. Taylor and Maclaurin Series (6.1-7.2).

5. Fourier Series (8.1,8.2).