

# *MATH 225.001*

## *Linear Algebra and Differential Equations*

### *Summer 2013-14*

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**Office Hours** : **Tuesday 15:30-16:30** or **BY APPOINTMENT** (Please call or send an e-mail)

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**Course web page** : <http://www.fen.bilkent.edu.tr/~mugan/courses/math225/math225-Generic.htm>

**Text Books** : **Main Textbook:**  
 C.H. Edwards & D.E.Penney,  
*Differential Equations and Linear Algebra, The Latest Edition*  
 (Prentice Hall, 2005)  
**Supplementary Textbooks:**  
 W.E. Boyce & R.C.DiPrima  
*Elementary Differential Equations and Boundary Value Problems*, (Wiley 1992)  
 B.Kolman & D.R.Hill  
*Elementary Linear Algebra*, (Prentice Hall, 2001)

**Exams** : **Quizzes (15.0 %)** **NO MAKE-UP FOR QUIZES**  
**MatLab Homeworks (10.0 %)**  
**Midterm Exam # 1 (22.5 %)** : **June 26, 2013, Thursday, 13:30-15:30**  
**Midterm Exam # 2 (22.5 %)** : **July 15, 2014, Tuesday, 13:30-15:30**  
**Final Exam (30.0 %)** : **July 31-August 04, 2014**

**75 % ATTENDANCE IS OBLIGATORY**

There will be about 12 pop-up quizzes that will also serve for monitoring the attendance. Each quiz will be out of 10. If a student takes less than 75 % of all quizzes, his/her letter grade will be downgraded by one step (e.g. B+ will be reduced to B).  
 No FZ Grade, everybody may take the final exam.

Week	Subject	Exams
<b>1. June 9</b>	Introduction to Diff. Equations, General & Particular solutions, Direction Fields and Solution Curves, Separable D.E., Applications, Linear 1 <sup>st</sup> order O.D.E. Sec.: 1.1-1.5	
<b>2. June 16</b>	Substitution Methods, Exact D.E., Introduction to Linear Systems, Matrices, Gaussian Elimination. Sec.: 1.6, 3.1, 3.2	
<b>3. June 23</b>	Reduced-Row Echelon Matrices, Matrix Operations, Inverses of Matrices, Determinants. Sec.:3.3-3.6	<b>Midterm Ex.1</b>
<b>4. July 30</b>	General Vector Spaces.Vectors and Vector Spaces, Subspaces, Linear Combinations and Independence of Vectors. Sec.:4.7, 4.1-4.3.	
<b>5. July 7</b>	Bases and Dimensions for Vector Spaces, Row & Column Spaces, Orthogonal Vectors in $R^n$ , Sec.: 4.4-4.6	
<b>6. July 14</b>	Eigenvalues and Eigenvectors.Diagonalization of Matrices and Applications, Sec.:6.1, 6.2	<b>Midterm Ex.2</b>
<b>7. July 21</b>	Applications, Sec.:6.3	