

| Section | Course Number | Location | Days | Time |
|----------|---------------|----------|------|---------------|
| 2333.5U1 | 52046 | GR 3.420 | MW | 5:30pm-7:45pm |

Instructor Information

| Instructor | Phone | Office | E-Mail | Office Hours |
|----------------|--------------|-----------|-----------------------------|------------------|
| Mohammad Ahsan | 972-883-6336 | FO 2.410F | mohammad.ahsan@utdallas.edu | MW 3:15pm-5:15pm |

General Course Information

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|----------------------------------|---|
| Pre-requisite | Math 1314 or equivalent. |
| Course Description | <p>Students will learn concepts and elementary techniques of linear algebra related to systems of linear equations, matrices, determinants and vectors. They will use those techniques in solving appropriate applied problems.</p> <p>(i) Chapter one will include matrices and their connection with systems of simultaneous linear equations, Gauss-Jordan elimination, Euclidean vector spaces, subspaces of \mathbf{R}^n basis and dimension, some applications of the inner product for \mathbf{R}^n curve fitting.</p> <p>(ii) Chapter two will cover the arithmetic and algebra of matrices and computing the multiplicative inverse of a matrix.</p> <p>(iii) Chapter three will include determinants and their computation, the application of determinants to matrix inverse and the solution of systems of linear equations, eigenvalues and eigenvectors.</p> <p>(iv) Chapter four covers subspaces, spanning sets and linear independence, properties of bases, and rank.</p> <p>(v) Chapter seven covers Gaussian elimination and LU decomposition.</p> <p>(vi) Lastly, linear programming problems and methods of solution are introduced in chapter eight.</p> |
| Learning Objectives/ Outcomes | <p>(i) Students will apply Gauss-Jordan method to solve a system of linear equations or to determine such that a solution does not exist.</p> <p>(ii) Students will compute the determinant, inverse, and rank of a matrix, eigenvalues and eigenvectors as appropriate.</p> <p>(iii) Students will demonstrate their understanding of the properties of operations on vectors. In particular, given a set of vectors in a space, they will be able to determine if the set forms a basis for that space.</p> <p>(iv) Given a narrative description of a real-life problem, students will analyze the problem and relate it to relevant concepts from linear algebra and then use appropriate techniques to solve the original application problem.</p> |
| Recommended Texts | <p><i>Linear Algebra with Applications</i>, 8th Edition, Gareth Williams. (http://www.webassign.net/features/textbooks/willinalg8/details.html) Student Solutions Manual is recommended.</p> |
| Online Homework | Weekly online homework assignments will be posted in WebAssign. You need to purchase access to this online homework system. Instructions to access WebAssign is posted in eLearning. |
| Required Supplies | (i) Regular access to a printer. (ii) Regular access to a stapler. |
| eLearning | (i) You must check the eLearning course page regularly. (ii) Course assignments and the gradebook will be available through eLearning. |
| UTD E-mail | Your official UTD E-mail address will be used regularly to send you important course information. |
| Calculators | Students may use basic calculator but are not required to have a graphing calculator. No calculators with matrix and/or graphing features will be allowed during tests. |
| Additional Resources | The UTD Math Lab: (http://www.utdallas.edu/studentsuccess/mathlab/) |

Academic Calendar

Please refer to the the UTD academic calendar (<http://www.utdallas.edu/academiccalendar/>) for important dates, such as university closings and withdrawal deadlines.

Exam Information

| Exam | Date | Time | Location |
|--------|----------------------|---------------|----------|
| Exam 1 | Wednesday, June 15th | 5:40pm-7:10pm | GR 3.420 |
| Exam 2 | Wednesday, July 13th | 5:40pm-7:10pm | GR 3.420 |
| Exam 3 | Monday, August 8th | 5:30pm-7:45pm | GR 3.420 |

Tentative Weekly Schedule

| Week | Monday | Textbook Sections | Assignments | Wednesday | Textbook Sections | Assignments |
|------|--------|--------------------|---------------------|-----------|-------------------|-------------|
| 1 | 05/23 | 1.1, 1.2 | – | 05/25 | 1.3 | – |
| 2 | 05/30 | Memorial Day | HW1 | 06/01 | 1.4 | THQ1, QUIZ1 |
| 3 | 06/06 | 1.5, 1.6 | HW2, THQ2, QUIZ2 | 06/08 | 1.7 | – |
| 4 | 06/13 | 2.1, Exam 1 Review | HW3, THQ3, QUIZ3 | 06/15 | | EXAM 1 |
| 5 | 06/20 | 2.2, 2.3 | HW4, THQ4, QUIZ4 | 06/22 | 2.4 | – |
| 6 | 06/27 | 3.1, 3.2 | HW5, THQ5, QUIZ5 | 06/29 | 3.3 | – |
| 7 | 07/04 | Independence Day | HW6 | 07/06 | 3.4 | THQ6, QUIZ6 |
| 8 | 07/11 | 4.1, Exam 2 Review | HW7, THQ7, QUIZ7 | 07/13 | | EXAM 2 |
| 9 | 07/18 | 4.2, 4.3 | HW8, THQ8, QUIZ8 | 07/20 | 4.4 | – |
| 10 | 07/25 | 4.5, 7.1 | HW9, THQ9, QUIZ9 | 07/27 | 7.2 | – |
| 11 | 08/01 | 8.1 | HW10, THQ10, QUIZ10 | 08/03 | Exam 3 Review | – |
| 12 | 08/08 | | EXAM 3 | | | |

Grading Information

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|--------------|---|--|----------|----------------|---------|-------------|---------|
| THQs | Weekly THQs (Take-Home Quizzes) will be assigned. You must download, print-off, complete and staple the THQs. Each THQ will be posted Monday morning in eLearning and is due the following Monday in the beginning of class. You will receive a zero for a missed THQ. THQs will not be accepted if they are late, missing a staple or missing a name. Your THQ average will be obtained by dropping your lowest THQ score and averaging the rest. Your THQ average will count as 10% of your course grade. | | | | | | |
| Homework | Homework will be completed out of class using WebAssign. You will receive a zero for a missed homework. Each homework will be posted Monday morning and is due the following Monday at 5:30pm. Your homework average will be obtained by dropping your lowest homework score and averaging the rest. Your homework average will count as 10% of your course grade. | | | | | | |
| Quizzes | Weekly quizzes will be given on Mondays at the end of class. You will receive a zero for a missed quiz. Your quiz average will be obtained by dropping your lowest quiz score and averaging the rest. Your quiz average will count as 10% of your course grade. | | | | | | |
| Exams | There will be two midterm exams and one comprehensive final exam. You will receive a zero for a missed exam. The final exam cannot be skipped. Each midterm exam will count as 20% of your course grade. The final exam will count as 30% of your course grade. | | | | | | |
| Attendance | Attendance is mandatory and will be measured. Your attendance record may be considered when assigning your final course grade. | | | | | | |
| Grade Scale | A+ | [96.66, ∞) | A | [93.33, 96.66) | A– | [90, 93.33) | |
| | B+ | [86.66, 90) | B | [83.33, 86.66) | B– | [80, 83.33) | |
| | C+ | [76.66, 80) | C | [73.33, 76.66) | C– | [70, 73.33) | |
| | D+ | [66.66, 70) | D | [63.33, 66.66) | D– | [60, 63.33) | |
| | F | (–∞, 60) | | | | | |
| Example | | thq grade | hw grade | quiz grade | exam 01 | exam 02 | exam 03 |
| | Grade | 81 | 91 | 85 | 72 | 86 | 83 |
| | Weight | 0.10 | 0.10 | 0.10 | 0.20 | 0.20 | 0.30 |
| | Course Percent | 0.10 * 81 + 0.10 * 91 + 0.10 * 85 + 0.20 * 72 + 0.20 * 86 + 0.30 * 83 = 82.20% | | | | | |
| Course Grade | B– | | | | | | |

Make-Up Policy

Extensions and make-ups are available only in the case of university-approved circumstances, such as official UTD business and medical emergencies. When applicable, you must make arrangements with your instructor at least one week in advance.

Official UTD Policies

Further information about official UTD policy is available at the following link, and that information is considered to be part of this syllabus. <http://coursebook.utdallas.edu/syllabus-policies/>