MATH 230: LINEAR ALGEBRA  (3 units) – FALL 2012
CRN: 10462          Time: 11:30 – 1:15 pm  M/W
INSTRUCTOR: Jill Kitzmiller, Math Department
Office Hours:  MW 10:50 – 11:50 am and T/TH 8 – 8:30 am and 3 – 3:30 pm
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## TEXT & MATERIALS
<u>Linear Algebra and Its Applications</u>: Lay, 5th edition.  A scientific calculator is also required.

## CATALOG COURSE DESCRIPTION
A first course in linear algebra intended for students majoring in mathematics, the physical sciences, engineering or business. Topics included are: systems of linear equations, matrices and determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, and selected applications.

## PREREQUISITES
MATH 194 with a minimum grade of C or better

## STUDENT LEARNING OUTCOMES
Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:
1. Perform matrix operations, and compute determinants, eigenvalues,/vectors, and inverses.
2. Understand and apply the relationship between linear transformations, matrices and systems of equations.
3. Analyze, synthesize, and evaluate theorems in Linear Algebra.

## COURSE OBJECTIVES
Upon satisfactory completion of the course, students will be able to:
1. Solve systems of linear equations and inequalities using elimination methods
2. Apply the techniques of matrix algebra to the solution of systems of linear equations and inequalities.
3. Compute the determinant of a square matrix and apply determinants to matrix operations.
4. Perform vector operations in tow or more dimensions and determine vector linear relationships, matrix dimension and rank.
5. Find the projection of vectors on planes in space using matrices and the Gramm-Schmidt process.
6. Demonstrate the transformations of linear systems and find the kernel and range of such transformations.
7. Compute the scalar eigenvalue and eigenvector of a square matrix and diagonalize square matrices.
8. Choose appropriate techniques of linear algebra to solve application problems from different fields.

**CONTACTING INSTRUCTOR**
I will be available during office hours for personal discussion.  I endeavor to listen to voice-mail and look at email each day when I am on campus.  I DO NOT look at email on the weekends (Friday- Sunday) or on holidays.  I do not respond to email regarding absences, unless it is long term.  I do not discuss grades over email, this must be done in person.

**PACE OF COURSE & TIPS FOR SUCCESS**
This course moves rapidly.  For every hour spent in class, you are expected to spend 2 -3 hours outside of class reading the book, doing homework, and studying the material.  It is critical that you read ahead and ask questions.  Avoid falling behind in the material, reading and homework.  If you fall behind it will be difficult to catch up.

**<u>Homework is the single most important thing you must do to succeed in this class</u>**.
You cannot learn mathematics without doing the problems.  You cannot do well on the exams if you do not do well on the homework.  If you are having difficulty with the material, get help.  You can get help from me during office hours or in the math tutoring center.  **Work with others outside of class, form a study group if possible.**  You are responsible for all material in assigned chapters and all material covered in lecture, even if you are absent, so find someone in class to make you copies of the notes & materials if you can not be in class.

**BEHAVIOR**
IVC School policy states that no food or drink is allowed in the classroom.  Also no children are allowed in the classroom.  You will be asked to leave the class for one or two class meetings if you exhibit behavior that prohibits or impedes any member of this class from pursuing any class assignment, objective or learning opportunity within the classroom.  **Please be courteous of others, try to be on time, turn off your cell phone or other electronic devices, and avoid talking during lectures.  DO NOT TEXT. Texting during class is disruptive to your learning and students around you.**

 It is assumed that each student will do his/her own work.  If a student is caught cheating on a test, that student will receive a "0" grade on that exam and the score will not be dropped.  The student may also be referred to the college administration for disciplinary action.  Examples of cheating include, but are not limited to, copying or submitting someone else's work as your own and using unauthorized materials on the exams.

**ATTENDANCE**
IVC School policy states that students are expected to attend every session of class in which they are enrolled.  It is the **student's responsibility** to add, drop, or withdraw from this class before the appropriate deadlines.  You may be dropped by the instructor if you miss the first day of class or have more than 2 unexcused absences. Tardies count as half of an absence.  If you fail to withdraw from this course before the deadline, you will be assigned a final grade in the course (even if you stop coming).  Check the course catalogue for information on drop dates.  **Regular class attendance is necessary for success in this course.**

**ACADEMIC ACCOMMODATION**
Any student with a documented disability who may need academic accommodation should notify the instructor and the Disabled Student Services Programs and Services (DSP&S) office in room 2117 in the Health Science building as soon as possible. The DSP&S office phone number is (760) 355-6312.

**EVALUATION**
There will be three in class exams (100 points each) and one comprehensive final examination (125 points). Exams are closed book/closed note and each student must work independently. Plan now to be in class on the date of the exams. Any missing exam grade will be recorded as a "0".

Homework will be assigned for each chapter and collected on the day of each exam. Homework is for **your benefit** so is worth only 5 points per chapter based on completeness. There will also be some group work or extension projects which will be collected and graded. This will total 75 points.

**GRADING**
To receive a passing grade of "C" or better, you must have 350 points or more based on:

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| Homework / Projects | 75 points |
| Exams | 300 points |
| Final | 125 points |
| Total | 500 points |

Breakdown: 450 & up = A, 400 - 449 = B, 350 – 399 = C, 300 - 349 = D, below 300 = F.

Attendance, class participation and a subjective instructor's interpretation of work may be used in assigning a final grade to borderline cases.

**INCOMPLETE**
To receive a final grade of incomplete, you must be passing the class and be unable to take the final exam.