Instructors: Dr. Miriam Castillo-Gil – Carver 386 – (515) 294-8184 – miriamc@iastate.edu
Dr. Jyy-i (Joy) Hong – Carver 444 – hongji@iastate.edu

Office Hours:

• Dr. Miriam Castillo will be available as follows: M 10:00-10:50, T 14:10-15:00 and R 13:10-14:00; and by appointment.

• Dr. Joy Hong will be available as follows: T,R 12:10-1:00pm, W 11:00-11:50 and 2:10-3:00pm; and by appointment.

The purpose of the office hour is to go over problems you have trouble with, clarify concepts covered in class and discussing grades.

Lectures: will be on MWF @ 12:10-13:00 in Hoover 1213.

Course Webpage: All course information and materials will be posted in Blackboard Learn


More precise information about the chapters covered and the time allotted to each chapter can be found in the Departmental Syllabus Page for Math 207.

Learning Outcomes:

Systems of Linear Equations
- Recognize and set up a system of linear equations
- Perform row operations on a system of linear equations to obtain echelon and reduced echelon forms
- Interpret echelon forms to determine solution sets of systems of linear equations
- Apply systems of linear equations to problems in networking, balancing chemical equations, and other areas

Matrix Algebra and Determinants
- Perform matrix arithmetic operations

1This document is subject to adjustment by the instructors, with notice given to the students.
• Use determinants do determine if a matrix is invertible
• Use determinants to find the inverse of a matrix if it exists
• Apply augmented matrices to find the inverse of a matrix if it exists

Vector Spaces
• Identify subspaces of n dimensional real space
• Identify subspaces of abstract vector spaces
• Produce a basis for a given vector space
• Verify if a given set is linearly independent, spanning, or both
• Identity the standard subspaces NulA, ColA, and RowA for a given matrix A

Linear Transformations
• Give the standard matrix for a given linear transformation
• Interpret matrix multiplication as a composition of linear transformations
• Find change of base matrices and their relationship to a linear transformation
• Relate one to one and onto with NulA and ColA and invertibility

Inner Product Spaces
• Understand orthogonality and magnitude in n dimensional space
• Utilize inner products in abstract vector spaces
• Use an inner product to induce a norm
• Utilize matrices to solve least squares problems

Eigenvalues and Eigenvectors
• Understand the definition of eigenvalues and eigenvectors
• Verify if given scalars are eigenvalues
• Verify if given vectors are eigenvectors
• Use the characteristic polynomial to find all eigenvalues and eigenvectors
• Use the number of eigenvectors to determine if a matrix is diagonalizable
Calculators and Other Electronic Devices: You may use any calculator that does not have wireless communication features. Calculators are permitted on all quizzes and exams; however, the Instructors reserve the right to inspect calculators during quizzes and exams AND answers without procedure will result in considerable loss of points. Other electronic devices, such as laptops, and tablets, may be used during lecture for educational purposes only. Do not utilize any mobile device while in class, such as cell phone, iPod, or other mp3 players, etc, it tends to distract other students and shows an extreme lack of respect.

Homework: Homework will be done online with Enhanced Webassign, refer to the following document for instructions on how to enroll in WebAssign. (You may also find this document in course content in the Blackboard course.) Find instructions in: http://orion.math.iastate.edu/miriamc/Castillo-IaState-Math207.doc

Students should first attempt to complete the homework by themselves before seeking outside help, such as other students and the professor. There is, however, no penalty for students working together.

Exams: There will be 4 in-class exams. The best 3 scores of the in-class exams and midterm will comprise the 50% of your grade, the final exam is comprehensive and will count 25% of your grade (The final exam can not be dropped!)

The exams are closed books and closed notes.

Exams must be taken during the scheduled times. There will be NO makeup exams with the exception of medical emergencies or university approved absences, HOWEVER, the first exam missed for any reason will be a drop, and can not be made up.

Quizzes: There will be 4 Quizzes and the top 3 scores will be considered for a 7% of your grade. Quizzes will be fairly short as they don’t comprise a large percentage of the course grade. The first quiz you miss counts as a drop, if you should miss more than 1 quiz for a legitimate reason, a make up can be arranged, a request must be done with anticipation unless the reason to miss it is an emergency (such as illness, death in the family, accident, etc.). The dates of the quizzes will be announced during class, but each quiz shall take place well before the corresponding exam, that is, quiz 1 will happen before Exam 1, quiz 2 after Exam 1 and before Exam 2, and so on.

Grading Policy: Any issues about grading for the exams and quizzes must be addressed within two weeks of the test date. After that time no score changes will be allowed.

Your grade will be computed as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Homework (best 6 out of 7 assignments)</td>
<td>18%</td>
</tr>
<tr>
<td>Quizzes (best 3 out of 4)</td>
<td>7%</td>
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<tr>
<td>Exams (Best 3 out of a total of 4)</td>
<td>50%</td>
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<tr>
<td>Final Exam (Cumulative)</td>
<td>25%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
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An overall score of 90% or better guarantees at least an A-; 80% or better guarantees at least a B-; 70% or better guarantees at least a C-. These thresholds might be adjusted down at the end of the semester.
**Tentative Schedule:**  (Exams 1, 2 and 4 will be on a Friday, while Exam 3 will take place on Monday or Wednesday)

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Special Event</th>
<th>Sections Covered</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>8/25-8/29</td>
<td></td>
<td>1.1-1.3</td>
<td></td>
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<tr>
<td>W2</td>
<td>9/1-9/5</td>
<td>Labor Day</td>
<td>2.1-2.3</td>
<td>HW: Chapter 1</td>
</tr>
<tr>
<td>W3</td>
<td>9/8-9/12</td>
<td>Exam 1 (ch1&amp;2)</td>
<td>2.4-2.5</td>
<td>HW: Chapter 2</td>
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<tr>
<td>W4</td>
<td>9/15-9/19</td>
<td></td>
<td>3.1-3.3</td>
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<tr>
<td>W5</td>
<td>9/22-9/26</td>
<td></td>
<td>3.4-4.2</td>
<td>HW: Chapter 3</td>
</tr>
<tr>
<td>W6</td>
<td>9/29-10/3</td>
<td></td>
<td>4.3-4.5</td>
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<tr>
<td>W7</td>
<td>10/6-10/10</td>
<td>Exam 2 (ch 3 &amp;4)</td>
<td>4.6-4.7</td>
<td>HW: Chapter 4</td>
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<tr>
<td>W8</td>
<td>10/13-10/17</td>
<td></td>
<td>5.1-5.2</td>
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<tr>
<td>W9</td>
<td>10/20-10/24</td>
<td></td>
<td>5.3-5.4</td>
<td></td>
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<tr>
<td>W10</td>
<td>10/27-10/31</td>
<td>Quiz 3 (Friday)</td>
<td>5.3,5.4</td>
<td></td>
</tr>
<tr>
<td>W11</td>
<td>11/3-11/7</td>
<td>Exam 3 (ch 5)</td>
<td>6.1-6.3</td>
<td>HW: Chapter 5</td>
</tr>
<tr>
<td>W12</td>
<td>11/10-11/14</td>
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<td>6.4-6.5</td>
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<tr>
<td>W–</td>
<td>11/24-11/28</td>
<td>Thanksgiving Break</td>
<td>No Classes</td>
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<tr>
<td>W14</td>
<td>12/1-12/5</td>
<td>Exam 4 (ch 6 &amp; 7)</td>
<td>7.3</td>
<td>HW: Chapter 7</td>
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<tr>
<td>W15</td>
<td>12/8-12/12</td>
<td>Dead Week</td>
<td></td>
<td>Review</td>
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**Blackboard:** You will be able to follow your grades in Blackboard, as well as this syllabus, and any important announcements.

**SI:** Supplemental Instruction (SI) will be available for this course. This is one option to develop learning and is not meant to replace attending class, reading the book, or other course assignments. More information is available online: [http://apps.dso.iastate.edu/si/course.php?id=675](http://apps.dso.iastate.edu/si/course.php?id=675)

**Other Extra Help:** If you need extra help in any aspect of this course, you have several options. First and foremost, come to either instructor’s office hours regularly and ask questions. If you cannot make it to our office hours, send us an email and schedule an appointment. We will make every possible effort to find a time to help you. You can also send short questions via e-mail. The Math Help Room and other resources should be utilized as much as possible, you can link to their page from here [http://www.math.iastate.edu/Undergrad/Current.html](http://www.math.iastate.edu/Undergrad/Current.html)

**Accommodations:**
Please address any special needs or special accommodations with Dr. Castillo-Gil at the beginning of the semester or as soon as you become aware of your needs. Those seeking accommodations based on disabilities should obtain a Student Academic Accommodation Request (SAAR) form from the Disability Resources (DR) office (515-294-6624). DR is located on the main floor of the Student Services Building, Room 1076. *No retroactive accommodations will be provided in this class.*

**Conduct and Academic Dishonesty:**
We expect all students to behave in a respectful manner during lecture, and *you will be asked to leave the lecture if you are being inappropriate and/or disruptive.* For more information, including **make up policies**, see the *Class Policies* provided by the Department of Mathematics.
**Other Make up Policies:** The first exam/quiz missed for any reason is a drop. Students will **NOT** be given the opportunity to complete old assignments at the end of the semester to improve their grades.

**Extra Credit:** Occasionally there might be a possibility to earn extra credit on the exams and/or quizzes. Extra credit will not be assigned on an individual basis; and most importantly, no extra credit assignments will be available upon request at the end of the semester to improve grades.