CS 591 - Mathematical Modeling

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1 Preview

This course is primarily intended for a graduate audience in the CSEE, IMSE and B & E Departments, although undergraduate students with adequate preparation in linear algebra will also benefit from this course. It will serve as a thorough introduction to the fundamentals of Linear and Integer Programming from both a theoretical and a practical perspective.

2 Pre-requisites

Exposure to Linear Algebra.

3 Logistics

1. Class Times Tu - Th $8:00\ am - 9:15\ am$.
2. Location - 215 ESB.
3. Office Hours - By appointment.
4. Class URL:

4 Syllabus sketch

4.1 Mathematical Programming Models

4.2 Building Linear Programming Models

4.3 Structured Linear Programming Models

4.4 Applications and Special Types of Linear Programing Models

4.5 Interpreting and using the solution of a Linear Programming Model

4.6 Non-linear models

4.7 Integer Programming

4.8 Building Integer Programming Models

4.9 The Implementation of a Mathematical System of Planning

5 Material

This course is based on [**?**].

6 Assessment

1. Quizzes (2) - Two quizzes will be held; one on February 12 and the other on April 15. These quizzes will be in-class and closed book. Each quiz is worth 20% (for a total of 40%) of your grade.
2. Midterm - The midterm will be held on March 16. It is in-class, closed book and worth 30% of your grade.
3. Final - The final will be held on May 8, $15:00-17:00$. It is in-class, closed book and worth 30% of your grade. (Tentative)

A maximum of 5 points is reserved for class performance, which includes regular attendance and participating in class discussions.

7 Grade Boundaries

1. **A** - ≥ 90
2. **B** - $75-89$
3. **C** - $60-74$
4. **D** - $50-59$
5. **F** - $0-49$

8 Social Justice Statement

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment, based upon open communication, mutual respect and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religon, sexual orientation, color or national origin. Any suggestions to further such a positive and open environment in this class will be appreciated and given serious consideration. If you are a person with a disability and anticipate needing any

type of accommodation, in order to participate in this class, please advise me of the same and make appropriate arrangments with Disability Services $(293 - 6700)$.

If you feel that you are being treated inappropriately or unfairly in any way, please feel free to bring your concerns to my attention; rest assured that doing so will not prejudice the grading process. In return, I expect you to behave professionally and ethically.