Course Description: The book *Moneyball* by Michael Lewis ushered in an entirely new way to think about, and evaluate, sports. *Moneyball* introduced the general public to the idea of using analytics (basic math and statistics) to produce a more competitive sports team. Since *Moneyball* was published in 2003, fans, coaches and even players have been using analytics to come up with better strategies in every type of sport. This course will serve as an introduction to sports analytics for students of all backgrounds. We will use the ideas from *Moneyball*, and similar references on sports analytics, to examine questions such as: “Who is the best QB in the NFL? Is there such a thing as home field advantage? And if so, why? Should football coaches go for it more on 4th down? How much is Joey Votto worth to the Cincinnati Reds?” This course will use very simple math and an assortment of popular readings to demonstrate the power of analytics to analyze sports. Students will not need any advanced mathematics skills to understand the concepts in this course.

Understand the following:

- This is a course that is about sports. One doesn’t have to play sports but there must be an interest in sports and an appreciation of the language used in sports.
- This is a course that uses analytics. Analytics includes mathematics at a rudimentary level as well as an ability to access information on the web and create and use spreadsheets. Analytics today is used in all areas of our life:
  - Business
  - Healthcare
  - Politics
  - Sports
  - ….
- We will use analytics for in-game situations as well as evaluating players and teams.
- Analytics also includes dealing with data:
  - Importance of good data
How to retrieve data
What to do if data are missing
How to analyze the data

- We will be required to work in groups or teams
  - Teams are a reality in most professions in life (including sports)
  - You will learn from each other and perform better if teams are effective
  - Much of the grade will require team activity

- We will learn from experts. We will have visitors to class that do sports analytics as their profession. It is a great opportunity to learn how it is applied in the real world and also to learn about possible professions. There is an expectation that you will have proper class etiquette. We will thank them for coming; we will not be surfing but paying attention and when appropriate participate in class discussion.

Through this course you will:

- Improve your overall problem solving and critical thinking abilities.
- Gain an understanding of basic statistical concepts.
- Develop the ability to recognize, formulate, and analyze decision-making problems in sports.
- Show the power of websites to find data needed to make decisions
- Improve their ability to work effectively in teams

Text: Mathletics, by Wayne Winston is our text. I will be assigning chapters to read. Additional reading materials may be assigned and provided through Blackboard (Bb).

Grading: Student grades will be determined by class participation, analytics assignments (aa), tests, team-bracketology and a team project. Students will be expected to come to class prepared and to participate in class discussions. More on each below.

Course Project: Students will complete a course project for this class. These will be done in with your team. You will be asked to pick one specific record in sports to analyze. You will then use the quantitative methods and concepts discussed in class to analyze this question. Your choice of record must be submitted by March 5. Student-teams will present their analysis to the rest of the class and the instructor near the end of the semester. Student-teams will be graded based on their analysis, conclusions and clarity of presentation. (10% of total grade)

Class Participation: Classroom discussion is a critical component in the assimilation of concepts and all students are expected to have completed the assigned readings before the respective class meeting in order to be prepared to actively participate. All students are encouraged to ask questions and provide comments. Note that attendance is necessary for participation, but it is not sufficient for active participation.

Analytic Assignments (aa): There will be several assignments to be handed in using quantitative analysis. Students are required to work as a team and hand in assignments as a team. Some of these will be in class and some will be done as homework. (50%)
Tests: There will be 1 test at the end of the semester on the material covered in class. These are not done as a team! There will also be one in class quiz…tba(30%)

Course Communication: We will use Bb to communicate assignments, changes in schedule and other information in the class.

March Madness: In early March your team will participate in a bracketology exercise. You will choose brackets and see who does the best. Grading is on participation (10%) but there will be grand prizes 😎