## Course Description

This is an advanced course in analyzing sports data for decision making. Identifying the metrics, types of analyses and making sense of sports-related data from a managerial business perspective. Use of industry tools to gather, learn, make predictions and visualize large sports data sets.

## Class Time

This class is offered asynchronously online. While you control when you watch videos and work on assignments, be aware of course pacing and specific deadlines.

## Instructor Information

Dr. Robert P. Schumaker
Professor, Computer Science Dept.
rschumaker@uttyler.edu

## Office Hours

Virtual: Slack (preferred), Zoom, email
     If your inquiry is grade-related, please make a Zoom or in-office appointment
In-office (COB 315.05): Mondays and Thursdays 10am - 3pm (appointments preferred)

## Textbook Information

Analyzing Baseball Data with R (Marchi, Albert and Baumer)
ISBN: 978-0-81535-351-5

## Course Objective

This course is designed with the following goals:
- Identify a broad range of methods used in sports data acquisition, representation, analysis and reporting
- Demonstrate an understanding of statistics and their application to sport
- Develop an ability to recognize, formulate and analyze decision-making in sport
- Improve overall problem solving/analysis skills and critical thinking
- Conduct sports data acquisition, representation and prediction activities
- Assess current sports analytics trends and how they can apply to new areas

## Computer Account Access

Students will need a Patriot account and password for computer access. This information can be found at `https://www.uttyler.edu/ccs`

## Course Documents and Slides

This class will use Canvas for course documents, slides, quizzes and other class-related materials. Students are encouraged to check the website frequently during the course of the semester to keep up to date about course activity.

## Course Grading

Course evaluation will be based on the following:

| | |
|---|---|
| Fantasy Baseball Report | 100 |
| Total Points | 100 |

## Grading Scale

A  85.0 points or more
B  70.0 to 84.999 points
C  55.0 to 69.999 points
D  40.0 to 54.999 points
F  39.999 points or less

## Tentative Course Schedule and Assignments

| Date | Concept | Readings |
|---|---|---|
| Aug 25-31 | Introduction to Sports Data Mining | |
| | Introduction to Baseball | Ch 1-3 |
| Sep 1-7 | A Brief History of Baseball Statistics - Chadwick to StatCast | |
| | Batting Statistics | Ch 4 |
| Sep 8-14 | Modern Batting Metrics | |
| | States and Expected Values | Ch 5 |
| Sep 15-21 | Balls and Strikes | Ch 6 |
| | Pitching Statistics | |
| Sep 22-28 | Modern Pitching Metrics | Ch 7 |
| | Fielding Statistics | |
| Sep 29-Oct 5 | Park Statistics | Ch 11 |
| | Career Trajectories | Ch 8 |
| Oct 6-11 | Simulation | Ch 9 |
| | Streaky Performances | Ch 10 |