

The Predictability of Sporting Contests: Understanding Who Will Bite the Dust in More Ways Than One?

The Ohio State University
School of Physical Activity and Educational Services
Freshman Seminar Syllabus (2 credits)

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Course Rationale:

Forecasting the outcomes of contests between teams and individuals presents itself as an interesting tool for the teaching and motivating of students to learn statistics. Recent introductory texts geared toward specific groups like students repeatedly include sport stories, illustrations, and problems for these reasons. This class seeks to introduce statistics through sport examples. Predicting sporting contests/outcomes also persists as a fascinating topic because it provokes passionate debate about the appropriateness of activities such as gambling, fantasy leagues, and betting pools (e.g. NCAA Men's Basketball Tourney, College Football Bowls, and NBA, NFL, MLB action). This class intends to discuss these dangers with students. Next, several scholars and popular writers suggest identifying a seed and selecting teams for a tournament appears difficult due to limitations on the selection process/criteria. In order to illustrate this point, the course provides an overview of the selection procedures used to select teams for various types of tournaments/playoffs seeking to determine a champion. Overall, the purpose of this course will be to examine/introduce the following: a) probability and statistics; b) gambling; c) fantasy leagues; d) betting pools; e) home field advantage; f) types of tournaments; and g) seeding procedures/criteria for various types of tournaments. An additional purpose of this course seeks to introduce how researchers utilize the library databases to conduct research and provides input to students on how to work within a group setting.

Course Objectives:

1. To understand the debate/concerns persisting about fantasy leagues, gambling, and betting pools.
2. To present introductory statistical methods of analysis.
3. To recognize the value of using statistical methods in order to generate predictions.
4. To recognize the different methods utilized to determine a champion.
5. To acquire knowledge of the historical and contextual background of various ranking systems.
6. To understand how the University Libraries Database Site can be accessed and utilized for engaging in scholarly research expected of college students.
7. To learn how to conduct group work and realize the benefits it provides.
8. To appreciate the subtleties of creating and making proposal presentations and convincing the audience your product is best.
9. To understand a multiplicity of problems and issues face those attempting to find better solutions to any public issue.

Course Policies:

A. **Students with Disabilities:** This syllabus is available in alternative formats upon request. If you have a disability, please remember that you are responsible for making your needs known to me and seeking assistance in a timely manner. I will do my best to assist you in completing the course successfully.

B. **Attendance:** I expect you to attend class regularly, be on time, stay for the whole class, listen attentively, and show, through your behavior, you respect the fact others in the class are here to learn. Your presence is indicative of your professional attitude and is necessary to derive maximal benefits from the class. If you need to miss a class, arrangements should be made with me prior to the class. Any work missed during absences may not be made up, unless it falls under a university allowed absence. You are responsible for obtaining class notes and hand-outs on the days absent.

Excused Absences

There are three situations, which constitute an “excused absence” from the class meeting time. They are: 1) students who participate in a documented University sanctioned event, 2) students who have a documented death in the family, and 3) students who are observing a religious holiday. In accordance to Faculty Rule 3335-7-15, students who will be participating in University sanctioned events must provide the instructor with a copy of the scheduled events and those classes which will be missed. This documentation must be on University letterhead, signed by the coach/supervisor, and given to the instructor within the first two weeks of the quarter. Students who will be observing a religious holiday must provide date/event written notification to the instructor within the first two weeks of the quarter.

C. **Academic Misconduct:** Students are expected to do their own original work within the confines of the course objectives and evaluation procedures. Any deviation from these expectations is considered academic misconduct and Faculty Rule 3335-31-02 will be enforced. The Ohio State University’s Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: “Any activity that tends to compromise the academic integrity of the University, or subvert the educational process.” Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University’s Code of Student Conduct is never considered an “excuse” for academic misconduct, so it is strongly recommended that students review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

D. **Assignments:** I expect you to put effort into your work for the class and be truthful in your presentation of your work, that is, no plagiarism, cheating, or the like. Please see me if you have any questions about academic misconduct. Please note all assignments are due on time. For my part as the instructor of this course, I will (a) listen to your questions, comments, or concerns, (b) address issues that arise in regard to course assignments, (c) provide you with interesting material to work on, (d) return papers to you in a timely manner, and (e) generally do what is necessary so you can accomplish the objectives established for the course.

E. **Materials and Presentation Methods:** Power point lectures and out of class assignments can be obtained through the instructor.

F. **Technology:** Additional means of communication between the instructor and students are available through the use of email, you are responsible for any email sent to your OSU account, this will include but is not limited to schedule updates, articles, and forms needed for class.

G. Diversity: The curriculum and experience is designed, implemented, and evaluated in a manner that promotes the acquisition and application of knowledge, skills, and dispositions necessary to help *all* students learn.

H. Statement of Student Rights: “Any student with a documented disability who may require special accommodations should self-identify to the instructor as early in the quarter as possible to receive effective and timely accommodations.” Students with a disability should work through the Office of Disability Services to secure appropriate accommodations (292-3307).

Course Evaluation:

<u>Assignment</u>	<u>Points</u>
Class Participation	40
Group Proposal Paper	30
Presentation	20
<u>Peer Evaluation</u>	<u>10</u>
Total	100

Students must achieve a score of 70% or better to earn a Satisfactory (S) mark for this course. Those individuals scoring below 70% will received an Unsatisfactory (U) grade.

Class Participation: (40 points)

You are expected to make a quality, consistent, and balanced contribution to class discussions. This is especially important when discussing the in-class, written, and reading assignments. Both quantity and quality of your contributions are important. I expect you to summarize, interrelate, and apply the topics of discussion during each class period. In-class assignments may be given throughout the quarter. Any work missed during absences may not be made up. You are responsible for obtaining class notes and handouts on days absent.

Group Paper: (30 points)

For this assignment, I expect you to complete a proposal for selecting and seeding teams for the NCAA men or women’s basketball tournament (**Due Beginning of Class the 10th Week**). The paper must be typed, double-spaced, and be at least 15 pages. A cover page and headings must appear to distinctively mark each section. Pages must be numbered and references should be cited using A.P.A. (American Psychological Association, 5th Edition) style. The following serves as a guide for your preparation of the paper and areas you will be evaluated on:

- a. Overview/Statement of the Problem (**What Does the Public Discourse Reveal?**)
- b. Analysis of Ranking and Ratings System Utilized (**Don’t be afraid to exploit popular magazines and special issues on specific sports or activities**)
- c. Description of Your Proposal (**i.e. significant criteria employed in your evaluation and statistical methods utilized. Provide support for your proposal via library databases**)
- d. Compare Prediction Proposal(s) vs. Current Media/Coaching Experts (i.e. ESPN, CBS, Sports Illustrated, Coaches Polls, etc...)
- e. Compare Your Proposal to Other Methods of Selecting a Champion (i.e. series [3v.5v.7], round robin, ladder, challenge etc...) and Seeding a Playoff/Tournament
- e. Conclusion
- f. Grammar, sentence structure, spelling, A.P.A Style, etc...

Overall, the paper should present your prediction/selection/seeding criteria. Do you agree or disagree with the experts? What are the possible pros/cons of your prediction/selection/seeding system? Why do other governing bodies (MLB, NFL, NBA, WNBA, World Cup) utilize different systems to determine their champions? How are these methods better/worse than the current NCAA tournament set-up? Further information provided by the instructor in the form of a handout will reveal the evaluation criteria to help guide the writer(s).

Proposal Presentation: (20 points)

Each group will make a 20-minute presentation of their event/program during the last week of class. Each group should prepare appropriate slides (e.g., power point/overheads) and a handout briefly summarizing their proposal to facilitate a concise and cogent class presentation.

Event/Program Peer Project Evaluation: (10 points)

I expect you to contribute to all aspects of the project and presentation. Peer evaluations will be completed to assess each student's contribution to the project and presentation. You can earn a total of 10 points for your contribution. The scores assigned by your peers will be summed and the average will become your grade. If you disagree with your score, then you may discuss this situation with me. The evaluation must be turned in to me on **last day of classes Week 10.**

Tentative Schedule

Week 1	Introduction to Course, Home Field Advantage, and Determining a Champion (e.g. types of Playoffs/Tournaments)
Week 2	History of Sports Polls, Ratings, Rankings, Predictions and Probability Theory(s)
Week 3	The Dangers of Gambling Participation and Effectiveness of Gambling Systems <ul style="list-style-type: none">• Dave Hunt: Franklin County Sheriff's Office - Special Investigations Unit
Week 4	Fantasy Leagues Participation (Pros and Cons) and Drafting Systems/Strategies <ul style="list-style-type: none">• Discuss and bring fantasy sport literature/draft books/magazines
Week 5	Statistics Introduction and Searching for Literature on Sport Related Topics
Week 6	Statistical Methods/Criteria and Conducting Group Work
Week 7	Probability/Prediction Factors in Team Sports and Seeding Procedures/Criteria
Week 8	Probability/Prediction Factors for Individuals and Seeding Procedures/Criteria
Week 9	Group Preparation for Presentation
Week 10	Proposal Presentations

Schedule Subject to Change

Reading: Articles and Group Paper Resource List

- Barry, D. & Hartigan, J.A. (1993). Choice models for predicting divisional winners in Major League Baseball. *Journal of the American Statistical Association*, 88 (423), 766-774. Available on JSTOR.
- Berry, S.M., Reese, C.S., Larkey, P.D. (1999). Bridging different eras in sports. *Journal of the American Statistical Association*, 94 (447), 661-676. Available on JSTOR.
- Carlin, B. P. & Stern, H. S. (1999). Designing a College Football Playoff System. *Chance*, 12 (3), 21-26.
- Cassady, C.R., Maillart, L.M., & Salman, S. (2005). Ranking sports teams: A customizable quadratic assignment approach. *Interfaces*, 35 (6), 497-510.
- Coleman, B.J. (2005). Minimizing game score violations in college football rankings. *Interfaces*, 35 (6), 483-496.
- Coleman, B.J. & Lynch, A.K. (2001). Identifying the NCAA Tournament "Dance Card." *Interfaces*, 31 (3), 76-86.
- Cooper, H., DeNeve, K. M., & Mosteller, F. (1992). Predicting professional sports game outcomes from intermediate game scores. *Chance*, 5(3-4), 18-22.
- Denbigh-Starkley, J. (2005). Playing with the percentages when trailing by two touchdowns. *The Sport Journal*, 8 (4), at: <http://www.thesportjournal.org/2005Journal/Vol8-No4/starkey.asp>
- Dunnivant, K. (2003, November 27). Behind the revolt in college football. *Business Week Online*. Also available on Business Source Premier.
- Forrest, D. & Simmons, R. (2000). Making up the Results: The Work of the Football Pools Panel, 1963-1997. *The Statistician*, 49 (2), 253-260. Available on JSTOR.
- Halberstadt, J.B.; Levine, G.M. (1999). Effects of reasons analysis on the accuracy of predicting basketball games. *Journal of applied social psychology*, 29 (3), 517-530.
- Harville, D. (2003). The Selection or Seeding of College Basketball or Football Teams for Postseason Competition. *Journal of the American Statistical Association*, 98, 17-27.
- Hu, F. & Zidek, J.V. (200?). Forecasting NBA basketball playoff outcomes using weighted likelihood. Retrieved on February 3, 2006 at: <http://www.stat.ubc.ca/research/techreports/208.pdf>
- Ittenbach, R.F. & Esters, I.G. (1995). Utility of team indices for predicting end of season rankings in two national polls. *Journal of Sport Behavior*, 18 (3) 216-224.
- Ittenbach, R. F., Kloos, E. T., & Etheridge, J. D. (1992). Team performance and national polls: The 1990-1991 NCAA division 1 basketball season. *Perceptual and Motor Skills*, 74, 707-710.
- Layden, T. (2004, November 29). The BSC mess. *Sports Illustrated*, 101, 21 (52-55). Also available on Academic Search Alumni Edition.
- Lane, I.M., Damiano, P.L., & Sulsky, L.M. (1994). Determining decision-making effectiveness using NCAA basketball tournament results. *Journal of Sport Behavior*, 17 (2), 79-86. Available through Academic Search Premier.

- Lehman, J.L. (1998). Predicting the outcome of games or confrontations: Where to start. *Horary Practitioner*, 9 (24), at: http://www.leelehman.com/pages/Gaming_hp.html
- Leka, S.D. & Giakas, G. (200?). Predicting the results of the 2004 Olympic Games in selected track and field sports. Retrieved on February 3, 2006 at: Australian Track and Field Coaches Association <http://www.atfca.com.au/newpdfs/Prediction%20of%202004%20olympic%20results%203.6.pdf>
- Martinich, J. (2002). College football rankings: Do the computers know best? *Interfaces*, 32 (5), 85-94.
- Onwuegbuzie, A.J. (1999a). Defense or Offense? Which is the better predictor of success for professional football teams? *Perceptual and Motor Skills*, 89, 151-159.
- Pfizer, C.B. & Rishel, T.D. (2005). Do reliable predictors exist for the outcomes of NASCAR races? *The Sport Journal*, 8 (2), at: <http://www.thesportjournal.org/2005Journal/Vol8-No2/c-barry-pfizer.asp>
- Rothman, D. (2002). My contribution to the BCS: yes, Virginia, there is a social welfare function in college football. ASA Proceedings of the Joint Statistical Meetings, 2990-3002. Available at: <http://www.amstat.org/sections/srms/Proceedings/y2002/Files/JSM2002-000156.pdf>
- Schwartzman, N. C., McCready, T. A., & Howard, L. (1991). Probability models for the NCAA regional basketball tournaments. *The American Statistician*, 45(1), 35-38. Also at: <http://www.jstor.org/browse/00031305/di020609?frame=noframe&userID=80921686@ohio-state.edu/01cc9933411b09c10940115957&dpi=3&config=jstor>
- Stern, H.S. (2004) Statistics and the college football championship. *The American Statistician*, 58 (3), 179-185.
- Stern, H. S. (1997). How accurately can sports outcomes be predicted? *Chance* 10(No. 4):19-23.
- Stern, H.S. (1995). Who's Number 1 in College Football? And How Might We Decide? *Chance*, 8 (3), 7-14.
- Stern, H.S. (1994). A Brownian Motion Model for the progress of sports scores. *Journal of the American Statistical Association*, 89 (427), 1128-1134. Available on JSTOR.
- Stern, H.S. (1991). On the probability of winning a football game. *The American Statistician*, 45(3), 179-183. Also at: <http://www.jstor.org/browse/00031305/di020611?frame=noframe&dpi=3&userID=80921686@ohio-state.edu/01cc9933411b09c10940115957&config=jstor>
- Thompson, M. (1975). On any given Sunday: Fair competitor ordering with maximum likelihood methods. *Journal of the American Statistical Association*, 70 (351), 536-541. Also at: <http://www.jstor.org/browse/01621459/di985923?frame=noframe&userID=80921686@ohio-state.edu/01cc9933411b09c10940115957&dpi=3&config=jstor>
- Wasserman, E., Czech, D.R., Wilson, M.J., Joyner, A.B. (2005). An examination of the Moneyball Theory: A baseball statistical analysis. *The Sport Journal*, 8 (1) at: http://www.thesportjournal.org/2005Journal/Vol8-No1/daniel_czech.asp
- Wood, G. (1992). Predicting outcomes: Sports and stocks. *Journal of Gambling Studies*, 8(2), 201-222.

Website List

http://www.andersonsports.com/football/ACF_frnk.html
<http://www.cnnsi.com>
<http://www.collegeplayoffs.com/>
<http://www.colleyrankings.com/>
<http://www.cfr.com/html/searchof.htm>
<http://espn.go.com>
<http://www.harrisinteractive.com/news/bcspoll.asp>
<http://www.usatoday.com/sports/sagarin.htm>
<http://prwolfe.bol.ucla.edu/cfootball/ratings.htm>
<http://www.mratings.com/>
<http://www.robertrohde.com/rankings/>
<http://www.dolphinsim.com/ratings/info/predicting.html>
<http://www.sas.com/news/preleases/030205/news1.html>
<http://www.unf.edu/~jcoleman/dance.htm>
<http://www.rawbw.com/~deano/articles/kalman.html>

Instructor Biographies

Dr. Chad S. Seifried (seifried.5@osu.edu) taught sport studies and management courses at The Ohio State University since joining the institution as a doctoral student in 2002. Currently, Dr. Seifried teaches or supervises the following undergraduate and graduate classes: a) EDU PAES 245 Sport and Recreation Leadership; b) 545 Programming in Sport and Recreation; c) 607 Legal Aspects of Sport and Physical Activity; d) 835 Problems in Interscholastic and Intercollegiate Athletics; e) 837 Event and Facility Management for Sport Managers; and f) 889/989 Practicum and Internships in Sport Management. Dr. Seifried's interests embrace: 1) the study of indoor and outdoor sport facilities—specifically the evolution of sport facilities, perceptions and satisfaction of sport facilities, and the discovery of comparisons or other drawn meanings about sport facilities; 2) the study of ethical/moral issues in sport such as the decision-making process, sportsmanship vs. gamesmanship, and meaningfulness of sport terms; and 3) the identification of factors associated with student-athlete choice of institution and the development of strategies to better recruit student-athletes. Recently, Dr. Seifried also accepted invitations and/or completed presentations at national conferences such The Drake Conference (Indianapolis, IN), The 9th International Conference on Sport and Entertainment Business (Columbia, SC), and the North American Association of Sport Management (Atlanta, GA; Kansas City, MO). Finally, Dr. Seifried also published articles in the *Journal of Contemporary Athletics*, the *Journal of Physical Education, Recreation & Dance*, *Scholastic Coach* and *Athletic Director*, and *Strategies*.

Dr. Brian Turner (turner.409@osu.edu) taught sport management courses at The Ohio State University since joining the institution as an Assistant Professor in 2004. Currently, Dr. Turner teaches the following undergraduate and graduate classes: a) PAES 509 - Sport and Leisure Service Delivery and Promotion; b) PAES 809 - Sport Marketing; c) PAES 925.20 - Applied Research Methods & Statistics in Sport Management; d) PAES 952 - Organizational Behavior in Sport and Exercise; and e) 889/989 Practicum and Internships in Sport Management. Dr. Turner's research interests lie in the general area of Organizational Behavior. Right now, his primary interest and the topic of his dissertation is foci and bases of organizational commitment among athletic coaches. He also is focusing on the following: 1) individuals motivation to participate and maintain membership in athletics; 2) group dynamics among athletic teams; and 3) understanding coaches' reasons for committing rules violations at the high school and intercollegiate levels. Dr. Turner also recently published articles in the *Journal of Sport Management*, *International Journal of Sport Management*, *Applied Research in Coaching & Athletics*

Annual, Contemporary Athletics, Journal of Academic Ethics, Recreation Sports Journal, Quest, and Journal of Education for Business. Additionally, Dr. Turner serves on the editorial review board for *The Physical Educator and International Council for Health, Physical Education, Recreation, Sport and Dance* and acted as a section head for the *North American Association of Sport Management's* annual conference. Finally, Dr. Turner completed many scholarly presentations recently at prestigious conferences such as North American Association of Sport Management, National Intramural Recreational Sports Association, The Drake Group, Sport Marketing Association, and the American Alliance for Health, Physical Education, Recreation, and Dance.