SPORT ANALYTICS (SAL)

SAL 601 Introduction to Sport Analytics and Visualization (3 Credits)
David B. Falk College of Sport
This course covers a basic statistics review, visualization techniques in Tableau, a discussion of the Moneyball hypothesis, and an overview of the current state of player/team analytics in different sports.

SAL 602 Introduction to R for Sport Analytics (3 Credits)
David B. Falk College of Sport
This course serves as an introduction to R and covers basic coding, data frames, data cleaning and editing, visualization techniques, and basic modeling of data in R. These techniques are taught using sports data.
Prereq: SAL 601 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 603 Introduction to Databases and Python for Sport Analytics (3 Credits)
David B. Falk College of Sport
This course serves as an introduction to Python. Sports data are used in conjunction with NumPy, Pandas, management, cleaning, wrangling, and aggregation. Key strategies of effective use of Python for sports data are discussed.
Prereq: SAL 602 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 604 Linear Regression and Econometrics for Sport Analytics (3 Credits)
David B. Falk College of Sport
The course covers linear regression, modeling techniques, interpretation of regression results, diagnostic tests and corrections for econometric issues, logistic regression, and key sport economic insights.
Prereq: SAL 603 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 605 R for Sport Analytics II (3 Credits)
David B. Falk College of Sport
Continued training in coding, webscraping, creating interactive graphics, using dashboards, and combining databases and SQL with R for Sport Analytics. Techniques used include nearest neighbors, classification, trees, and cluster analysis.
Prereq: SAL 604 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 606 Applications of Machine Learning for Sport Analytics using Python (3 Credits)
David B. Falk College of Sport
Applications of machine learning for sport analytics using Python. Topics include supervised vs. unsupervised models, clustering, Bayesian networks, component analysis, and neural networks using sports data.
Prereq: SAL 605 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 607 Econometrics for Sport Analytics II (3 Credits)
David B. Falk College of Sport
Continued application of econometrics in Sport Analytics, including additional tests for violations of assumptions of CLRM. Other topics include nonlinear regression, qualitative response models, panel data, and simultaneous equation models and methods.
Prereq: SAL 606 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 608 Applications of Machine Learning for Sport Analytics Using R (3 Credits)
David B. Falk College of Sport
Applications of Machine Learning for Sport Analytics Using R. Elements of both supervised and unsupervised learning. Key topics include classifier models (KNN, Naïve Bayes), decision trees, clustering, cross validation, bagging, and neural networks.
Prereq: SAL 607 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 611 Sport Law and Analytics (3 Credits)
David B. Falk College of Sport
Legal issues facing the sports industry related to contracts, antitrust, arbitration, etc., and the various dilemmas they create are explored. Students will research and use analytics, offer analysis, and discuss possible resolutions to specific dilemmas.
Prereq: SAL 603 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 612 Baseball's Collective Bargaining Agreement Analytics Applications (3 Credits)
David B. Falk College of Sport
The sport of baseball and its Collective Bargaining Agreement (CBA), which describes the rules and regulations governing both the business behind and playing of the sport, are explored with analytics applications related to key concepts.
Prereq: SAL 611 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 613 Football Analytics Application (3 Credits)
David B. Falk College of Sport
The sport of football and its Collective Bargaining Agreement (CBA), which describes the rules and regulations governing both the business behind and playing of the sport, are explored with analytics applications related to key concepts.
Prereq: SAL 611 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 614 Basketball and Analytics Applications (3 Credits)
David B. Falk College of Sport
The sport of basketball and its Collective Bargaining Agreement (CBA), which describes the rules and regulations governing both the business behind and playing of the sport, are explored with analytics applications related to key concepts.
Prereq: SAL 611 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 615 Hockey and Analytics Applications (3 Credits)
David B. Falk College of Sport
The sport of hockey and its Collective Bargaining Agreement (CBA), which describes the rules and regulations governing both the business behind and playing of the sport, are explored with analytics applications related to key concepts.
Prereq: SAL 611 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 621 Sport Gambling and Analytics (3 Credits)
David B. Falk College of Sport
The theory and practice of the sports betting and daily fantasy marketplace are studied. Topics include market efficiency, risk assessment, line movements, portfolio analysis, and momentum trading. Analytical applications are presented and explored throughout.
Prereq: SAL 611 Please review Class Notes within Class Search Results - Class Section > View Details.

SAL 670 Experience Credit (1-6 Credits)
David B. Falk College of Sport
Participation in a discipline or subject related experience. Student must be evaluated by written or oral reports or an examination. Permission in advance with the consent of the department chairperson, instructor, and dean. Limited to those in good academic standing.

SAL 690 Independent Study (1-6 Credits)
David B. Falk College of Sport
Exploration of a problem, or problems, in depth. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor(s) and the department.
Repeatable 6 times for 6 credits maximum