



DSO 599 HR and People Analytics
Semester Year (Fall 2021 – 2nd Half)
3 hours per week (1.5 unit class)

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COURSE DESCRIPTION

This course provides students with an introduction to and practical applications in HR analytics also known as human capital analytics or people analytics. The course will educate on emerging practices and techniques used to acquire data, analyze, predict and finally solve questions and challenges confronting organizations of all sizes and sectors today. Students will learn about human capital measurement and metrics, predictive analytic tools and methods, human capital reporting standards, frequently used metrics, core analytic study methods to acquire, analyze, predict and create a data driven solution/business case with advanced visualization and storytelling. Students will use data to solve common business problems faced by real organizations, performing root cause analysis, creating and using simple and advanced predictive analytic models as well as learn to use basic financial modeling and costing techniques essential to quantify/capture return on investment (ROI). Students will use various software tools to enable data analysis, modeling and statistical as well as financial analysis in diagnosing and solving business problems.

The course will feature and use the case study method to facilitate learning and practical application in both lecture and exercise format. Case studies will include a wide variety of real-world industries and companies including Google, Starbucks, Jet Blue Airways, Public Storage, Union Bank, UPS, Target stores, Southern California Edison, Taco Bell and others.

This course serves to help students not only use advanced analytic techniques and technologies but to create a winning business cases and story using data that links to business financial impact and ROI.

COURSE OBJECTIVES

Upon successful completion of this course, students will be able to:

1. Develop problem solving skills using quantitative methods to analyze, segment and perform root cause analysis to answer complex business questions about human capital using HR, operational and financial data via case studies, group exercises and survey quizzes.
2. Understand emerging data and metric standards in HR and human capital as well their application, integration and impact upon financial and business outcomes with real-world HR and talent issues and available data in organizations today. (tested)
3. Learn when and how to segment, test, and apply simple and advanced metrics to transform data into intelligence for insight and prediction via case studies, group exercises and survey quizzes.

4. Work with visualization tools and data to build basic data models that deliver insight, solve questions and tell stories (case studies, group discussion, team project)
5. Work with both simple and advanced software tools to analyze, test and model HR and workforce data to quantify and improve business results using multiple variables
6. Use statistics together with financial modeling to show business impact and quantify ROI via case studies and group exercises
7. Build a business case with data that tells a compelling story that top management will approve

COURSE MATERIALS

The course materials will utilize the following:

Optional Textbook:

1. The ROI of Human Capital Chapters 1-8, by Jac Fitz-Enz 2009

Required Readings (free to download):

2. Article; Building a Business Case: A How-To Guide, Higgins, 2018
3. Letter: State Street Global Advisors – Proxy Letter to Investors, Jan 2019
4. Sample ESG Company Annual Reports : ‘Allianz’, ‘Deutsche Bank’, ‘UPS’, ‘JNJ’
5. White paper report: Valuing human capital, Deutsche Bank Investment Research, Feb, 2019
6. Global Standards Document: ISO #30414 Human Capital Reporting Guidelines for human capital reporting for internal and external stakeholders, 2018
7. Linking Human Capital to Business Performance, 2012

Required Tools and Online Resources;

8. **Microsoft Power BI** will be used for visualization, prediction and modeling as well as DAX formulas and machine learning. Microsoft PowerBI is free to download. Free updates provided by Microsoft. Students may also use **Tableau** if preferred.
9. **Microsoft Excel** will be used on a limited basis for analysis, modeling and visualization
10. **SQL, Microsoft Access, Excel or similar data tools** will be used for data manipulation, integration and testing to connect to analysis and visualization tools i.e. Power BI and Excel
11. **SOLVE™** human capital analytics software for select exercises and company case study data. Free for educational use.
12. **Blackboard** – selected readings and case studies
13. **Gaughan & Tiberti Library** – selected readings

Supplementary Materials;

14. Beyond HR, the New Science of Human Capital, Boudreau-Ramstad, 2007
15. The Signal and Noise by Nate Silver, 2013
16. Outliers by Malcom Gladwell, 2008
17. MoneyBall: The Art of Winning an Unfair Game, Michael Lewis, 2003
18. Show Me the Numbers, Designing Tables and Graphs, Stephen Few, 2004

GRADING

<u>Assignments</u>	<u>Points</u>	<u>% of Overall Grade</u>
Class Participation	15	5%
Quiz	15	5%
Homework	55	20%
Team Project	100	35%
Final Exam	100	35%
TOTAL	285	100%

CLASS PARTICIPATION

Contributing comments, thoughts, hypotheses, solutions, and good questions, presented in a professional manner consistent with the environment in large highly professional organizations today. Comments and input should be Relevant, Responsive, demonstrate analytical thinking and analysis, value-add and most importantly clarity and conciseness.

Students will be critiqued on ‘best practices’ in communication clarity, ‘as if’ they were presenting to organization top management in any given class sessions.

HOMEWORK

Homework will be assigned each week for required readings and at least 1 actual company case study for individuals and teams to evaluate and interpret as homework. Students will be asked to discuss and contribute in class as if presenting findings to management.

Students will also be asked starting in week 2 and future weeks to complete or build selected analytic worksheets, tools or templates, to answer specific questions in terms of statistical relationships, financial cost and ROI. Students will also be asked to identify key performance indicator metrics (KPIs) that the organization should utilize as well as the relevant business impact of changes in select KPIs to the organizations using case study and selected data from organizations.

TEAM PROJECT

Team projects will include 4-5 person teams conducting analysis of a real company human capital data using actual current/historical data to analyze, quantify and solve key human capital questions identified by company management. Teams will make a final presentation in class to management of mock CFO’s. Use of volunteer companies who provide data will be requested. Teams will be assigned by course instructor based on student background to diverse skills and capabilities.

Data and context for the team project will be provided by local area companies or by professor or may be provided by student teams if approved in advance by instructor.

FINAL EXAM

Exams are recommended to be open book at the end of the course with limited resource documents provided including a case study analysis as part of final exam. No internet access.

THE IMPORTANCE OF COURSE EVALUATIONS

The student course evaluations are valuable. This course is continuously improved, based on feedback from students and instructor observations.

EMERGENCY PREPAREDNESS

In case of a declared emergency if travel to campus is not feasible, the USC Emergency Information web site (<https://emergency.usc.edu/>) will provide safety and other information, including electronic means by which instructors will conduct class using a combination of USC’s Blackboard learning management system (blackboard.usc.edu), teleconferencing, and other technologies.

COURSE OUTLINE AND ASSIGNMENTS

	Topics/ Daily Activities	Readings and Homework	Deliverables with Due Dates
<i>Week 1</i>	<ul style="list-style-type: none"> - HR and human capital analytics defined, levels of analytics, - HR standards to measure and report workforce data - Basics for building a business case 	<i>#1(chapter 1-2)</i> #3, #4, #5, #6, #9, #11, #18, Scofield Financial Turnover case study(2005), Starbucks Coffee store level survey and analysis case study, -other assigned readings	class participation, review, case study interpretation, team case study analysis – in class -Project Team formation
<i>Week 2</i>	<ul style="list-style-type: none"> - Tools for analysis, what the world uses - The talent management life cycle - Metrics, Key Performance Indicators (KPIs) and Scorecards - Intro to Forecasting 	<i>#1(skim chapter 3, read 4)</i> #4, #8, #10, #11, HP Scorecard case study exercise, Southeast Asia Property Performance Scorecard case study, -PowerBI video's -other assigned readings	<i>-Homework, Excel worksheet simple analytic forecasting</i> <i>-HP Scorecard team whiteboard exercise</i> -Tool, SOLVE Metrics online handbook -Download PowerBI desktop version -Project Teams finalized
<i>Week 3</i>	<ul style="list-style-type: none"> - Using questions to create & show value with analytics - Building a business case, practical application, present a compelling story - Opportunity sizing, sensitivity analysis, variance analysis - Using advanced analytic tools to solve business issues 	<i>#1(skim chapter, 5 read 6)</i> #2, #10, #11, Service Corp. International ROI of sales training case study 2010, Public Storage turnover case study (2018), -PowerBI video's -other assigned readings	-Project team projects selected <i>-Business case homework team presentations</i> <i>-Metrics Quiz</i> -Play with PowerBI sample dataset -Tool SOLVE™ workforce intelligence system
<i>Week 4</i>	<ul style="list-style-type: none"> -Transforming data into business intelligence – segmentation, cohort analysis, outliers -Designing and populating dashboards, best practices -Presentation best practices -HR standards, A deeper dive 	<i>#1(chapter 7-8)</i> #3, #4, #6, #7, #8, #10, #11, #15, #16, National Cancer Institute case study (2016), UPS case study (2013), -PowerBI videos -other assigned readings	<i>-Quiz</i> <i>-PowerBI homework, simple metrics analysis</i> -PowerBI presentation practice
<i>Week 5</i>	<ul style="list-style-type: none"> -Interpreting analytic results, statistics vs financial modeling -When to use statistics, when to use financial modeling -Quantifying workforce productivity -Linking business strategy to key questions, metrics/KPIs 	<i>#1(chapter 6 Human Capital Value Index)</i> #5, #6, #7, #9, #10, #11, #13, BioTech workforce productivity case (2014) JetBlue employee NPS engagement (2012) case -PowerBI videos -other assigned readings	<i>-PowerBI homework, simple, vs. advanced analysis, examples of statistics vs financial modeling</i> -Intro to workforce productivity and What-If Modeling

<i>Week 6</i>	-Visualization, presentation, storytelling with data -Powerful visuals, impactful metrics, business intelligence (root cause, drivers, predictive, prescriptive) -Team project review, practice presentations	#2, #7, #8, #9, #10, #11, #14, #15, #18, Virgin Pulse study, ROI of wellbeing, (2019) Snohomish County workforce planning case study(2017), ABMed China forecasting labor cost case	Team project initial review. -Visualization tools homework (PowerBI recommended) -In class work, advanced modeling, prediction and optimization
<i>Week 7</i>	-Advanced modeling analysis and testing to optimize results -Team Analysis Project presentations	#6, #7, #8, #9, #10, #11, workforce productivity and case studies, Union Bank location talent optimization and expansion case	-Homework, advanced modeling, prediction and optimization -Team Project Presentation due
<i>Week 8</i>	Final Exam		Final Exam, TBD

STATEMENT ON ACADEMIC CONDUCT AND SUPPORT SYSTEMS

Academic Conduct:

Students are expected to make themselves aware of and abide by the University community's standards of behavior as articulated in the [Student Conduct Code](#). Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct at <http://policy.usc.edu/scientific-misconduct>.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | *Title IX* – (213) 821-8298
equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplcity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

uscsa.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Appendix I. MARSHALL GRADUATE PROGRAMS LEARNING GOALS

How DSO 599 Contributes to Marshall Graduate Program Learning Goals

Marshall Graduate Program Learning Goals	<u>DSO 599</u> Objectives that support this goal	Assessment Method*
<i>Learning Goal #1: Develop Personal Strengths.</i> Our graduates will develop a global and entrepreneurial mindset, lead with integrity, purpose and ethical perspective, and draw value from diversity and inclusion.		
1.1 Possess personal integrity and a commitment to an organization's purpose and core values.	#1,#2,#3,#4,#6	team project, peer evaluation
1.2 Expand awareness with a global and entrepreneurial mindset, drawing value from diversity and inclusion.	#1, #3	team project, peer evaluation, class participation
1.3 Exhibit awareness of ethical dimensions and professional standards in decision making.	#1,#3,#7	team project, peer evaluation
<i>Learning Goal #2: Gain Knowledge and Skills.</i> Our graduates will develop a deep understanding of the key functions of business enterprises and will be able to identify and take advantage of opportunities in a complex, uncertain and dynamic business environment using critical and analytical thinking skills.		
2.1 Gain knowledge of the key functions of business enterprises.	#1,#2,#3,#4,#5,#6,#7	homework, team project, exams
2.2 Acquire advanced skills to understand and analyze significant business opportunities, which can be complex, uncertain and dynamic.	#1,#2,#3,#4,#5,#6,#7	homework, team project, exams
2.3 Use critical and analytical thinking to identify viable options that can create short-term and long-term value for organizations and their stakeholders.	#1, #2, #3, #4	class participation, homework, team project, exams
<i>Learning Goal #3: Motivate and Build High Performing Teams.</i> Our graduates will achieve results by fostering collaboration, communication and adaptability on individual, team, and organization levels.		
3.1 Motivate and work with colleagues, partners, and other stakeholders to achieve organizational purposes.	#1,#3,#4,#6,#7	class participation, homework, team project,

3.2 Help build and sustain high-performing teams by infusing teams with a variety of perspectives, talents, and skills and aligning individual success with team success and with overall organizational success.	#1,#3,#4,#6,#7	class participation, homework, team project, exams
3.3 Foster collaboration, communication and adaptability in helping organizations excel in a changing business landscape.	#7	class participation, homework, team project,

Appendix II

SAMPLE PEER EVALUATION FORM

Please identify your team and team members for the ____ Project(s) that you worked on. Then rate all your team members, *including yourself*, based on the **contributions** of each team member for the selected assignment according to the criteria listed below. On a scale of 0 – 5 with 0 = does not meet expectations, 1 = somewhat meets expectations, 2 = mostly meets expectations, 3 = meets expectations, 4 = exceeds expectations, 5 far exceeds expectations. Rate each person on each of the five criteria. Lastly, add up the points for each person with the maximum number of points for each person being 25. In the box below, describe the exact contributions of each team member, including yourself.

Team Members/ Assessment Criteria of Team Contributions	Team Member 1	Team Member 2	Team Member 3	Yourself
1. Creativity, Insight, Role Performance				
2. Teamwork, Assists Team Members, Listening, Discussing				
3. Technical/Analytics Skills and Contribution				
4. Research and Information Sharing				
5. Project and Time Management				
Total				

Contribution details:

Appendix III

SAMPLE CLASS PARTICIPATION STATEMENTS

Class participation is an extremely important part of the learning experience in this course as the richness of the learning experience will be largely dependent upon the degree of preparation by *all* students prior to each class session.

A course that incorporates the frequent use of case analyses to illustrate the practical application of concepts and practices requires the student to diligently and thoroughly prepare cases and actively offer the results of the analyses and conclusions derived as well as recommendations during each class session. My expectation and that of your classmates are that you are prepared for *all* classes and will actively participate in and meaningfully contribute to class discussions.

In-class participation is also a critical part of this course's learning experience. Cold calling may take place to encourage active participation and to gain multiple perspectives and points of view, thus lending itself to the richness of the learning experience. In-class participation grading will be based on students' demonstrated willingness to participate and the quality of the comments expressed, rather than quantity. While some students are far more comfortable than others with class participation, *all* students should make an effort to contribute meaningfully.

Students will offer their opinions in group settings many times in their careers; thus, class participation serves to prepare students for this business experience.

The evaluating of in-class participation is based on the following:

- *Relevance* – Does the comment or question meaningfully bear on the subject at hand? Irrelevant or inappropriate comments can detract from the learning experience.
- *Responsiveness* – Does the comment or question connect to what someone else has said?
- *Analysis* – Is the reasoning employed consistent and logical? Has data from course materials, personal experience, or general knowledge been employed to support the assertions/findings?
- *Value* – Does the contribution further the understanding of the issues at hand?
- *Clarity* – Is the comment concise and understandable?

During class sessions, I frequently assume the role of a facilitator to encourage a discussion that includes perspectives from a variety of viewpoints and, secondly, to help pull together prevailing analyses and recommendations. The direction and quality of a discussion is the *collective responsibility of the class*.

For each in-class session two (2) points will be awarded to a student for relevant and meaningful participation, one (1) point for modest contributions to the class and zero (0) points for no participation or absence.

To underscore the importance of participation, 10 percent of the course grade or 10 of 100 points are allocated to class participation.

Class Participation—Behavioral Anchor Rating Scale:

Excellent Performance

- Initiates information relative to topics discussed
- Accurately exhibits knowledge of assignment content
- Clarifies points that others may not understand
- Shares personal experiences or opinions related to topic
- Offers relevant / succinct input to class
- Actively participates in class exercises
- Demonstrates ability to apply, analyze, evaluate & synthesize course material.
- Demonstrates willingness to attempt to answer unpopular questions
- Builds on other students' contributions

Average Performance

- Participates in group discussions when asked
- Demonstrates knowledge of course material
- Offers clear, concise, “good” information on class assignments
- Offers input, but tends to reiterate the intuitive
- Attends class regularly

Unacceptable Performance

- Fails to participate even when directly asked
- Gives no input to discussions
- Does not demonstrate knowledge of the readings
- Shows up to class: does nothing
- Distracts group / class
- Irrelevant discussion