

HR Analytics
Spring 2020
38:533:616:01

Instructor:	Hanbo Shim (hs612@rutgers.edu)
Class Time:	Thursday, 7:20-10:00 (Levin 103)
Office Hours	<ul style="list-style-type: none">• Tuesday 3:00-5:00 PM (Office: Levin 216i)• You can also make an appointment to meet with me. Please contact me by emails, preferably with 2 or 3 possible options (in order of preference, if any).
Textbook: (Required)	<i>Investing in People: Financial Impact of Human Resource Initiatives</i> Wayne F. Casio, John W. Boudreau, & Alexis A. Fink Pearson Education, Inc. 3 rd Edition (2019) ISBN: 978-1586446123 (I'd recommend purchasing the paperback)
Readings:	Readings should be accessible through the library system as well as the Canvas course webpage (https://tlt.rutgers.edu/canvas).

COURSE DESCRIPTION

This course is designed to introduce students to the fundamental logic, metrics, and methods necessary to conducting HR analytics. Organizations are increasingly relying on HR Analytics to improve decision-making in human resources, and ultimately contribute more effectively to organizational effectiveness. HR practitioners need to be skilled in understanding (1) the types of problems that can be addressed using HR analytics, (2) how to analyze and interpret human resource data, (3) how to evaluate the validity of those analyses, and (4) how to communicate analytical and statistical results in a way to influence decisions. The course is designed to teach basic HR analytics skills and critical thinking skills with respect to HR decision-making. The course will involve data analysis and statistics, but its emphasis is on application and real-world problem solving.

COURSE OBJECTIVES

Upon successfully completing this course, students should be capable of the following:

- Relating the importance of using data-based reasoning to support HR decision-making
- Engaging in critical thinking, translating how human resource issues and questions can be tested
- Performing basic data analyses to answer human resource questions
- Conducting summary statistics, correlation analysis, and regression analysis to answer human resource questions
- Communicate, in writing and orally, the meaning and implications of HR analytics

SMLR LEARNING OBJECTIVES

This course is designed to help students attain the following specific SMLR learning objectives:

I) Written & Oral Communication — Communicate effectively at a level and in modes appropriate to an entry level professional.

- Communicate complex ideas effectively, in standard written English
- Analyze and synthesize information and ideas from multiple sources to generate new insights
- Produce high quality executive summaries
- Make an argument using contemporary and/or historical evidence
- Present ideas and arguments in a logical and effective way

II) Quantitative, Qualitative, and Analytical Skills — Apply appropriate quantitative and qualitative methods for research workplace issues.

- Formulate, evaluate, and communicate conclusions and inferences from quantitative information
- Apply quantitative methods to analyze data for HR decision making including cost-benefit analyses, ROI, etc. (HRM)
- Apply qualitative methods appropriately, alone and in combination with quantitative methods

III) Research Skills — Demonstrate an ability to collect, analyze and synthesize information to make logical and informed decisions impacting the workplace. Use evidence to evaluate hypotheses, theories and approaches to workplace issues.

- Analyze and synthesize information and ideas from multiple sources to generate new insights
- Assess and critique relevant evidence and research findings
- Use evidence-based analysis to appraise the validity of various hypotheses, theories, and approaches to workplace issues

V) Understanding Context — Evaluate the context of workplace issues, public policies, and management decisions

- Analyze issues related to business strategies, organizational structures, and work systems

VI) Application — Demonstrate an understanding of how to apply knowledge necessary for effective work performance

- Apply concepts and substantive institutional knowledge, to understanding contemporary developments related to work
- Understand the legal, regulatory and ethical issues related to their field
- Understand the internal and external alignment and measurement of human resource practices (HRM)

VII) Professional Development — Demonstrate an ability to interact with and influence others in a professional manner, and to effectively present ideas and recommendations

- Develop effective presentation skills appropriate for different settings and audiences
- Work productively in teams, in social networks, and on an individual basis

GRADING

Material	Points (%)
Participation: Students are expected to come to class prepared, including having completed all the readings assigned for the day and corresponding homework assignments. As a high-level elective, your participation will be critical to the success of the class.	40 pts (10%)
Homework Assignments (10 pts each; Due at class each week): For most days, there will be a homework assignment, typically including a reading and an analysis.	120 pts (30%)
Short Presentation: Analytics Scorecard (April 30): Students are expected to briefly present their analytics scorecard on April 30 in class. Your presentation should be relatively roughly 5-10 minutes and include a PowerPoint (or comparable) presentation. In this presentation, you are in a situation to present a brief, scorecard-type summary of analytics results for one specific unit (or multiple units) of your choice. You will be expected to briefly present them to the unit manager(s) in a very concise manner. You need to briefly present what you found from analyzing the unit(s) data and provide actionable recommendations. You will also need to answer questions from both me and the class about what you examined and found.	40 pts (10%)
Analytics Workbook (50 pts each; Due at class every three weeks): Students will be expected to regularly work on workbook using data provided on a hypothetical company. Information about the company and the data will be provided in class. There are four modules due every three weeks in class (please refer to due dates in our course schedule). Each module provides a series of exercises and analytics that you will need to compute and solve. The modules address different areas of analytics, and each module moves from simpler analyses to more complex analyses. Nonetheless, all statistical analyses can be conducted using Excel's Analysis Toolpak add-in. Depending on your class and your own skills, you could import the data into a statistical package and conduct your analyses with such tools as well. <i>(Optional: Revise and Resubmit)</i> After each part submitted, grades will be given within the next 24 hours, so that you can revise and resubmit your responses at class in the following week. The grade for resubmission will replace your initial grade of each module only if it is higher than the initial grade. Although the resubmission is optional and you may choose not to resubmit your response, I encourage you to review your response for learning purposes. Solutions will be later delivered after resubmission dates.	200 pts (50%)
Module 1: Developing HR Analytics Questions (Jan 23–Feb 20; Resubmit by Feb 27) You will conduct analytics that provide basic foundational information about Mr. Macky's. In this module, you will find out summary information, such as the number of employees and turnover rates. You will also set up data in a way that will facilitate more complex analyses.	
Module 2: Turnover & Engagement (Feb 20–Mar 26; Resubmit by Apr 2) Module II pushes you to consider metrics associated with turnover and employee engagement. The module begins with the computation of metrics intended to provide you with a summary of	

the turnover situations at the various Mr. Macky's units; the module ends with the creation of a turnover prediction module intended to help predict which managers or assistant managers are at greatest risk of leaving the organization.

Module 3: Recruitment, Selection, & Diversity (Mar 26–April 16; Resubmit by Apr 23)

In Module III, you will explore issues associated with recruitment, selection, and employee diversity. This module will have you explore issues associated with how successful Mr. Macky's has been in its selection efforts, both in terms of the performance ratings of those hired and the diversity of its recruitment efforts. You will also look into what options Mr. Macky's has with respect to the design of a new selection system, and explore ways that Mr. Macky's can improve the quality of its managerial hires. You will also help evaluate the different recruitment sources and their relative effectiveness.

Module 4: Employee Development & Compensation (Apr 16–May 7; Resubmit by May 12)

Finally, in Module IV, you will engage in HR Analytics associated with employee development and compensation. Although Mr. Macky's does not provide much in the way of training, you can look at how employees develop within the organization. In this module, you will explore how much value there is to the organization in accumulating organizational experience. You will also try to understand how the company rewards performance and how effective their compensation practices are for incentivizing future performance and retaining high performers.

****Style Guide****

All assignments should be submitted as a hard copy in class. They should be written in double-spaced; 12-point font; Times New Roman; 1-inch margins. Your grade will be determined by the criteria including the quality of your response, how you addressed it, the quality of your analyses, how well you interpreted your analyses, the utility of your recommendations, and the clarity of your writing.

GRADE SCORING

All assignments will be graded using letter grades (A+ to F) with the following numerical equivalents (%):

A+	100
A	95
A-	90
B+	87
B	85
B-	80
C+	77
C	75
C-	70
F	50
Incomplete	0

Activity	Points
Homework	120
Workbook Part 1	50
Workbook Part 2	50
Workbook Part 3	50
Workbook Part 4	50
Short Presentation	40
Participation	40
Total	400

Final grades will be computed mathematically based on the aforementioned weighting and the scores on the various grade elements. Final grades for the class will be determined as follows:

Percentage	Points	Grade
90-100%	360-400	A
85-89.9	340-359	B+
80-84.9	320-339	B
75-79.9	300-319	C+
70-74.9	280-299	C
≤70	≤ 279	F

COURSE INFORMATION, POLICIES, AND RESOURCES

Course Website:

The course Canvas website (<https://tlt.rutgers.edu/canvas>) will be the primary mechanism that I will use to communicate information to the entire class outside of lecture. Copies of important material, readings, assignments, lecture slides, and grades will all be available on the course website. The course website will also have copies of the PowerPoint slides that I will use in class. I will try to make these all available at least one day before the scheduled lecture. Assignments will also be available on the course website.

Computer Use:

This class will make extensive use of Excel and the Data Analysis Add-In. Please make sure you can use the Data Analysis tools. You may refer to instructions here¹ It would also be helpful to review your Excel skills, as you will be making heavy use of the tool throughout the class. Furthermore, computers will be required for class. That said, students are expected to only use the computers for class purposes.

Assignment Policy:

Homework assignments are due at class time. Assignments handed in after class (or handed in to my office during class) may be marked down. Note, however, that even an “F” is much better than an “Incomplete.” So it is always better to at least hand an assignment in late than not hand it in at all. **All late assignments must be handed in by Thursday, May 7th (11:59 pm, EST).**

Academic Integrity:

All students enrolled in this course are responsible for abiding by the guidelines outlined in the University’s Academic Integrity Policy. You can find the full policy at <http://academicintegrity.rutgers.edu/academic-integrity-policy/>. In particular, the principles of academic integrity require that a student do the following:

- *Properly acknowledge and cite all use of the ideas, results, or words of others.*
- *Properly acknowledge all contributors to a given piece of work.*
- *Make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.*
- *Obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.*
- *Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.*
- *Uphold the canons of the ethical or professional code of the profession for which he or she is preparing.*

¹ For Windows: <https://support.office.com/en-us/article/load-the-analysis-toolpak-in-excel-6a63e598-cd6d-42e3-9317-6b40ba1a66b4%23OfficeVersion=Windows>

For Mac: <https://support.office.com/en-us/article/load-the-analysis-toolpak-in-excel-6a63e598-cd6d-42e3-9317-6b40ba1a66b4#OfficeVersion=MacOS>

Attendance Policy:

I do not take attendance, although I strongly suggest you attend all classes to receive a good grade, and more importantly, to understand all aspects of the course's content. If you miss class, for whatever reason, it is your responsibility to obtain the missed material and hand in the homework.

If you miss class, please understand that it is your decision to do so. *It is not necessary to inform me that you have missed or will miss a class and informing me of such does not change any of the above policies.* I am happy to answer questions about the material in office hours; however, I will not reiterate entire lectures to those who missed class.

Accommodation:

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Student-Wellness Services

Rutgers provides several resources to assist student who may be experiencing distress or mental health concerns. The following are some of the resources that are available to you if you need them.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

Scarlet Listeners: (732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

LECTURE TOPICS AND ASSIGNMENTS

January 23: Topic #1: Introductions and Statistics Review

January 30: Topic #2: HR Review (from an Analytics Perspective)

DUE:

Homework #1

Readings:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 1)
- Hammonds, K. H. (2005). Why we hate HR. *Fast Company*, August 2005, Issue 97, 41-47.
- Milligan, S. (2018). HR 2025: Reach new heights by becoming a trusted advisor. *HR Magazine*, November/December, 30-38.

February 6: Topic #3: The Scientific Method, Hypothesis Testing, and Evidence-Based Management

DUE:

Homework #2

Readings:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 2)
- Schwab, D. P. (2004). *Research Methods for Organizational Studies*. Lawrence Erlbaum Associates: Mahwah, NJ. (Chapter 1)

February 13: Topic #4: Metrics and Measures

DUE:

Homework #3

Readings:

- Fink, A. A., & Sturman, M. C. (2017). "HR Metrics and Talent Analytics." In D. Collings, K. Mellahi, & W. F. Cascio (Eds.) *The Oxford Handbook of Talent Management*, pp. 375-395. Oxford University Press.

February 20: Topic #5: The Value of Employee Performance

DUE:

Workbook: Module 1

Homework #4

Readings:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 3)
- February 27: Topic #6: Estimating the value of human resource interventions
DUE:
(Optional) Revision of Workbook: Module 1
Homework #5
Readings:
 - Bontis, N., & Fitz-enz, J. (2002). Intellectual capital ROI: A causal map of human capital antecedents and consequents. *Journal of Intellectual Capital*, 3 (3), 223-247.
- March 5: Topic #7: Costing Turnover and Absenteeism
DUE:
Homework #6
Readings:
 - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 4)
 - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 5)
- March 12: Topic #8: Predicting Turnover
DUE:
Homework #7
Reading:
 - Ramamurthy, K. N., Singh, M., Yu, Y., Aspis, J., Iames, M., Peran, M., & Held, Q. S. (2015). A talent management tool using propensity to leave analytics. *IEEE International Conference on Data Science and Advanced Analytics*, 1-10.
- March 19: SPRING BREAK: NO CLASS
- March 26: Topic #9: Engagement, Wellness, and Attitude Metrics
DUE:
Workbook: Module 2
Homework #8
Reading:
 - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 6)

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 7)
- Vance, R. J. (2006). Employee engagement and commitment. *SHRM Foundation's Effective Practice Guidelines*.

April 2: Topic #10: EEO and Diversity Analytics

DUE

**(Optional) Revision of Workbook: Module 2
Homework #9**

Reading:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 8)
- Chen, L., & Levine, B. (2016). Analytics to realize the value of gender diversity. *Workspan*, May, 12-14.

April 9: Topic #11: Staffing Analytics

DUE:

Homework #10

Readings:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 9)
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 10)
- Fleck, C. (2016). An algorithm for success. *HRMagazine*, June, 130-135.

April 16: Topic #12: Training Evaluation and Quasi-Experiments

DUE:

Workbook: Module 3

Homework #11

Readings:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 11)
- Russ-Eft, D., & Preskill, H. (2005). In search of the Holy Grail: Return on Investment in Human Resource Development. *Advances in Developing Human Resources*, 7, 71-85.

April 23: Topic #13: Compensation Analytics

DUE:

**(Optional) Revision of Workbook: Module 3
Homework #12**

Readings:

- Montan, L., Palotas, Z., & Tinajero, A. (2014). How to incent performance using advanced analytics, *Workspan*, May, 39-43.
- Sturman, M. C., & McCabe, D. (2008). Choosing whether to lead, lag, or match the market: The case of Punk's Backyard Grill, a start-up restaurant. *Journal of Human Resources in Hospitality and Tourism*, 7, 85-97.

April 30: Topic #14: Future of HR and Wrap Up

DUE:

Presentation (In-class)

*****No Homework*****

Readings:

- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 12)
- Tobenkin, D. (2019). The robots are coming. *HRMagazine*, Spring, 58-64.

May 7 (11:59 pm EST): DUE: Submission of Workbook Module 4

May 12 (11:59 pm EST): DUE: (Optional) Resubmission of Workbook Module 4