

## 38:533:705:90 Workforce Analytics and HRM Data-Based Decisions

Fall 2021

Professor Helen Liu  
xiangmin.liu@rutgers.edu  
School of Management and Labor Relations  
Rutgers University

### Course Description

This course addresses the growing need for data-driven, analytical approaches to managing human resources. Students will learn statistical methods necessary to deal with business problems, increase knowledge and skills in planning and managing HR analytics projects, and develop an understanding of major legal and ethical considerations related to HR analytics projects.

### Required Text

- Privitera, Gregory J. (2018) Essential Statistics for the Behavioral Sciences. Thousand Oaks, CA: Sage Publications Inc (ISBN: 978-1506386300).
- Additional readings and resources are posted on Canvas.

### SMLR Learning Goals

This course is designed to meet three SMLR Learning Goals:

**II) Quantitative Skills** – Apply appropriate quantitative and qualitative methods for research on 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)

**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 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

## Student Accountabilities

Online learning requires a high level of discipline, dedication, and time management skills. While online learning offers you flexibility and convenience to learn from anywhere, anytime, *you are still expected to adhere to the all due dates.*

You are expected to:

- Have access to a reliable computer, and access to the Internet
- Log in to Canvas for your course ***on a daily basis***
- Check for any announcements, update to the syllabus, assignments, and/or discussions and respond accordingly
- Actively participate in the Discussion Forum
- Complete the assigned readings and/or media
- Complete the assigned exercises and projects
- Adhere to all due dates
- Refer to [Study Guides and Strategies \(Links to an external site.\)](#)Links to an external site. for effective learning practices.

## In case of computer failure

Make sure you have an alternative plan of access to your Canvas course in case your computer crashes (it happens). An extra computer at home, your employer's computer, or computer at your local library can be some alternatives. Additionally, be sure to backup your important documents and assignments on a flash drive or other external device.

## Evaluation of Student Performance

- **Quizzes.** Students are required to take an online quiz for every module. These are open-book, open-note quizzes. Students should start the quizzes only after they finish the required readings and videos. There are no makeup quizzes without documented excuses. The total is worth 20% of the course grade.
- **Participation.** On a typical Unit, you are expected to (1) discuss a business case related to the course materials and (2) actively interact with peers in Discussion Forums. Participation is worth 40% of the course grade.
- **Individual research paper.** Select an organization or industry you are interested in and/or familiar with, and write a paper addressing how that organization or organizations in that industry use HRM-related analytics and metrics to drive performance. The paper is expected to be 8-10 pages, 12 font size, double spaced.

| Grading Components                    | % of Final Course Grade |
|---------------------------------------|-------------------------|
| Unitly Quiz                           | 20%                     |
| Unitly Discussion Forum Participation | 40%                     |

|                                 |      |
|---------------------------------|------|
| Individual Research Paper Draft | 20%  |
| Individual Research Paper Final | 20%  |
| Total                           | 100% |

### **Academic Integrity**

As an academic community dedicated to the creation, dissemination, and application of knowledge, Rutgers University is committed to fostering an intellectual and ethical environment based on the principles of academic integrity. Academic integrity is essential to the success of the University’s educational and research missions, and violations of academic integrity constitute serious offenses against the entire academic community.

Dishonesty of any kind will not be tolerated in this course. Dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. For more comprehensive information on academic integrity, please refer to the academic integrity website at <http://academicintegrity.rutgers.edu>.

### **Diversity, Equity, and Inclusion (DEI) Statement**

This is an inclusive learning environment that is welcoming of all people and perspectives, including those of diverse races, religions, ethnicities, ages, gender identities and sexual orientations. If you go by a name or gender that is different from the one on official Rutgers documents, please let me know so that I can use the proper name and pronouns.

Moreover, if you have already established accommodations with Office of Disability Services (ODS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through ODS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact ODS at 848-445-6800 or [dsoffice@echo.rutgers.edu](mailto:dsoffice@echo.rutgers.edu).

\* The instructor reserves the right to change this syllabus and course schedule during the semester as needed.

## Course Schedule

| <b>Time</b> | <b>Topic</b>  |
|-------------|---|
| Unit 1      | <b>Introduction to Data-Based Decision</b><br>Discussion - What's Behind the Surge of Interest in People Analytics                      |
| Unit 2      | <b>Summarizing Data: Descriptive Statistics</b><br>Discussion - Why Humans Distrust Algorithms  |
| Unit 3      | <b>Probability and the Foundations of Inferential Statistics</b><br>Discussion – AI and Virtual-Reality Simulations in Hiring Decisions |
| Unit 4      | <b>Hypothesis Testing</b><br>Discussion - The Fight to Mine Your Data and Sell It to Your Boss  |
| Unit 5      | <b>Testing Means: T-tests</b><br>Discussion - Behind the Scenes of Google's People Analytics Team                                       |
| Unit 6      | <b>Analysis of Variance</b><br>Discussion - Talent Acquisition and HR Analytics   |
| Unit 7      | <b>Correlation/Regression</b><br>Discussion - Analytical Performance Management   |
| Unit 8      | <b>Measurement and Workforce Analytics</b><br>Discussion - Building a Data Democracy at Gap Inc   |
| Unit 9      | <b>Causal Modeling in HR Analytics: Practical Considerations</b><br><i>Initial paper due</i>  |
| Unit 10     | <b>Garbage In, Garbage Out: Discovering Data &amp; Quality Control</b><br>Discussion - Why the Google Flu Trends Project Failed         |
| Unit 11     | <b>Data Visualization</b><br>Discussion – Telling Stories with Data   |
| Unit 12     | <b>Legal and Ethical Concerns (1)</b><br>Discussion - Can Algorithms Be Fair?   |
| Unit 13     | <b>Legal and Ethical Concerns (2)</b><br>Discussion – Five Techniques to Make the Most of Data  |
| Unit 14     | <b>The Future of People Analytics</b><br><i>Final paper due</i>   |