Marketing Analytics Certificate Fact Sheet

Department of Marketing
Trulaske College of Business, University of Missouri

Certificate requirements

- completion of 13 hours of required coursework
- 3.0 GPA in the five required courses overall, and 3.2 GPA in the following three courses: Mrktng 4900, Mrktng 4930 (or Mgmt 4610), Mrktng 4950
- completion of requirements for a BSBA or a minor in business at the University of Missouri

Required courses:

Mrktng 4900	Analyzing and Communicating Business Data
Mrktng 4910	Data Analytics and Machine Learning for Business
Mrktng 4920	Data Visualization (1 credit hour)
Mrktng 4930	Databases for Marketing Decisions (Mgmt 4610 may be substituted for this course)
Mrktng 4950	Data-Based Decision-Making in Marketing

Mrktng 4900 is a prerequisite to two of the other required courses (Mrktng 4910 and Mrktng 4950).

The Excellence in Marketing Analytics award is given each semester to one or two of the top graduating seniors earning the Marketing Analytics Certificate.

What to expect in your certificate courses

Mrktng 4900, Analyzing and Communicating Business Data (Fall and Spring semesters)

Catalog description: This course focuses on the analysis of marketing and other business data with basic statistical techniques. Students will learn when and how to use statistical techniques to solve marketing and other business problems and how to effectively communicate the results of statistical tests to managers. The course covers univariate procedures and regression.

This course will . . .

- review statistical material you learned in earlier course work, but look at it from a perspective that focuses on understanding the conceptual essentials and business applications of each statistical technique
- cover new material related to each statistics procedure that will allow you to use it in meaningful ways in business situations
- teach you to use R software to conduct data analysis
- help you learn how to write brief reports to management that present the results of your data analysis in a useful and understandable way

You can expect to complete a statistics application assignment approximately once a week. In this assignment, you will be given a typical question that would be asked by a marketing manager, a

dataset with relevant data, and some guidelines about how to proceed with your analysis of the data. Some assignments are completed individually and some are completed in pairs. There are three exams in this course.

Mrktng 4910, Data Analytics and Machine Learning for Business (Spring semester)

Catalog description: Introduction to artificial intelligence and machine learning applications in the domain of marketing and other business areas. Students will work with analytical tools and models, learn to derive actionable insight from using these tools, and gain knowledge of contemporary issues involving collecting, analyzing, and sharing data.

Upon completion of this course, you'll be able to . . .

- Understand the fundamentals of data analytics and predictive modeling
- Handle and summarize large datasets using MS Excel and R
- Apply appropriate analytical tools and algorithms for a given problem/dataset
- Derive insights from dataset

You can expect to complete about six data analytics-related assessments that are assigned periodically throughout the semester. Typically, you will be presented with a business problem, relevant dataset, and specific guidelines for each assignment. For example, an assignment may ask students to identify insights for improving a bakery's sales based on its historical dataset. For some assessments, you will be required to use Excel for data summarization/visualization and develop R codes/scripts to solve the business problem and derive actionable insights. You will be asked to complete one or more case studies using Excel and R and techniques learned in this course. Some or all assessments and case studies will be done in assigned teams. Two exams will help assess your understanding of the core concepts taught in this course.

Mrktng 4920, Data Visualization (1 credit hour; Fall and Spring semester)

Catalog description: An introduction to data visualization. Students will learn the principles for effective visual representation of data and learn how to prepare data visualizations using the Tableau platform.

In this course you will learn ...

- how to use the Tableau data visualization platform to make a variety of visualizations including graphs, heatmaps, geo mapping, and others
- how to manipulate data within Tableau
- best practices for creating effective visualizations
- how to make effective data dashboards

This is an eight-week class. During this time, you can expect to complete approximately nine assignments. In addition, during each class session students will do hands-on exercises on their laptop computer using Tableau. There is one exam at the end of this course.

Mrktng 4930, Databases for Marketing Decisions (Fall semester)

Catalog description: This is an applied course on marketing databases. The course helps students harness database management techniques to solve marketing problems. In addition to learning the principles of relational database management systems (DBMS), students will learn how to apply database management skills in combination with other statistical packages. Specifically, they will learn how to do market segmentation analysis, cluster analysis, market share analysis, customer relationship management, brand and store positioning, and market and product sales forecasting.

This course will ...

- help you understand how "big data" is stored, managed, and manipulated in Fortune 500 firms (e.g., Walmart, Apple, and Facebook)
- teach you how to manage "big data" in the data warehouse using database management software and analyze "big data" to solve business problems using R
- build your database management and R programming skills from scratch (we will start from software downloading)

You can expect to complete four homework assignments throughout the semester. In each assignment, you will be given some multiple-choice questions. These questions test your understanding of the basic concepts and principles that we covered in the lecture. After building a solid foundation of the database principles, you will finish a team project with your teammates. The project is from a Fortune 500 firm. This firm will provide you a real dataset of its business and seek your data-driven recommendations to improve its business performance. There is one midterm and one final exam in this course.

Mrktng 4950, Data-Based Decision-Making in Marketing (Spring semester)

Course description: This course highlights a systematic, analytical approach to marketing decision-making. Students will build their analytical skills via lectures, software tools, and business cases. They will experience a hands-on approach to solve problems in areas such as market segmentation, targeting, positioning, pricing, and resource allocation. Students will also draw on data visualization basics to effectively present their analysis to their peers.

In this course, students will . . . . .

- Develop a problem-solving mindset based on sound, foundational marketing concepts
- Acquire basic analytical and technical skills to understand complex data and interpret the results with a focus on practical insights and managerial relevance
- Draw on previous exposure to software tools and techniques in other courses (such as Tableau) to make competent, effective presentations

The course will feature business cases. Students will work on these cases in teams. They will present the analysis in class, answer audience questions, and also submit a written report. The class will be largely interactive and will feature guest speakers who will discuss state-of-the-art industry practice. There will be two exams in this course.

Additional useful courses in analytics in the Marketing Department

The courses below can help you sharpen your analytical skills and give you more practice applying analytics to business situations.

Mrktng 4650: Digital Marketing

Strategic and managerial challenges and issues related to use of the Internet and other electronic channels as marketing tools. In this course, you will earn your Google Analytics Certification.

Mrktng 4430: Advanced Professional Selling

Emphasis on the analytics approach to sales. This reflects the overall trends in business practice, and specifically in the world of sales with increasing reliance on Sales Force Automation (SFA) and Customer Relationship Management (CRM) tools. **Note:** Mrktng 3410 Personal Selling and Mrktng 4420 Sales Management are prerequisites for this course.

Mrktng 4890: Marketing Supply Chain Analytics

This course focuses on applying data analytic tools and techniques at various supply chain stages, specifically focusing on retailers. At the end of the course, the students will have developed supply chain analytical skills to solve supply chain problems such as demand forecasting, inventory management, and sales and operations planning.

Additional things you can do to prepare for a career in marketing analytics

Obtain the Google Analytics Certification (either through MRKTNG 4650 or independently).

Participate in marketing analytics competitions.

Gain experience in Python. There are free online courses where you can gain this experience, such as this one: https://www.coursera.org/learn/python.

Boost your Excel skills. Coursera has a variety of free courses and short guided projects using Excel to help you build your skills. Go to https://www.coursera.org/ and search on "Excel."

Other resources

Women in Analytics
https://www.linkedin.com/company/women-in-analytics-community/

Insights Association is a professional association of marketing researchers and marketing analysis. Membership is free for students.
https://www.insightsassociation.org/