Course Overview
Successful business analysts and managers are increasingly required to be proficient at making data-driven decisions, rather than be reliant on experience and intuition alone. This course teaches you about the latest data analytics methods applied to business situations, building on previous data analytics study, so that you can make informed business decisions based on the work of data scientists in your organization and on your own analyses.

- Presents data analytics methods now used by leading-edge business practitioners, building on previous data analytics study.
- De-mystifies the methods, going deep to show that they are not magic.
- Motivates/illustrates the methods with business case analyses.
- Conducts business case analyses with R analysis software.
- Serves also as a practical “how to” reference.

Instructor Biography
Dr. Richard Huntsinger is a Fortune 500 operations executive, management consultant, research scientist, professor, and Silicon Valley entrepreneur with broad international experience leading data analytics, enterprise software development, system integration, and operational excellence programs at organizations like Hewlett-Packard, AT&T, Symantec, Hitachi, Exelon, Curtiss-Wright, and US Department of Energy. He currently serves as Executive Director of Berkeley Data Analytics Group, LLC, a data analytics consulting firm, and lectures at University of California-Berkeley. Recent projects include electricity demand forecasting in smart electric grids, enterprise data warehouse optimization in high-tech and telecom operations, and process automation in nuclear power plant operations. Dr. Huntsinger earned his PhD in Engineering & Public Policy from Carnegie Mellon University, MBA degrees from University of California-Berkeley and Columbia University, with honors, and MSc and BSc degrees in Computer Science from California State University-Chico, with honors. He holds ASQ Six Sigma Black Belt and PMI Project Management Professional certifications.

Course Outline
Data Preparation Methods:
data selection, data cleansing and imputation

Advanced Analytics Methods:
cluster analysis (gaussian mixture models & expectation maximization), regression modeling (support vector regression and neural networks), classification modeling (naive Bayes), ensemble modeling (bagging, boosting, and stacking), evaluation of models (cross-validation), tuning of model meta-parameters

Analytics Methods for Special Data Types:
modeling with time series data, modeling with text data

Analytics Methods for Large Scale:
dimensionality reduction (principal component analysis), cluster computing (MapReduce), stream computing (Kafka)

Suggested Preparation
A background in descriptive statistics, descriptive data analytics, and predictive data analytics at the level of UGBA 104.