BERKELEY EXECUTIVE PROGRAM IN BUSINESS ANALYTICS | Program Topics

The Berkeley EPBA delivers learning that will enable you to leverage data and analytics to drive strategy and innovation across your organization. You will learn through lectures by faculty experts and specialists, case studies, group and individual exercises, and engagements with industry experts/global leaders. The curriculum includes three core modules encompassing data-based decision-making, forecasting trends, and the use of AI/ML for gaining business insights. Additionally, you can choose to specialize in specific areas by selecting two electives from a range of topical modules in line with your career goals. The program culminates with a capstone project in which you will apply your learnings to real-world business challenges.

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### Topic 1 | Inference and Measurement
- Sampling, surveys and biases: applications
- Estimating parameters and deriving insights
- Implementing statistical tests
- A/B Testing
- Experimentation and evaluation

### Topic 2 | Data and Decisions
- Decision analysis - decision trees, backward induction
- Decision making under uncertainty
- Statistical methods to solve business problems
- Effective data visualization
- Game theory

### Topic 3 | Predictive Analytics
- Forecasting and trends
- Time series forecasting and analysis
- Linear, multiple and ANOVA regression models: business applications
- Regression diagnostics

### Topic 4 | Economic Analysis for Decision Making
- Economic costs
- Demand estimation and pricing strategies
- Market segmentation
- Tools for competitive advantage
- Designing effective incentives

Visit the program page at: https://executive.berkeley.edu/programs/berkeley-executive-program-business-analytics
Topic 5 | Machine Learning and Artificial Intelligence
- Trees, random forest and boosting
- Analyzing machine learning approaches for business problems: neural networks, support vector machines, trees, multivariate adaptive regression splines, k-NN
- Leveraging AI for business insights
- Tools for supervised learning methods
- Tools for unsupervised learning methods

Topic 6 | Building a Data Science Team
- Mapping of resources from expert backgrounds to solve problems
- Building a data science team
- Organizational structure: centralized, distributed or hybrid
- Designing a tech eco-system which complements the data science team
- Developing a data-driven culture

Topic 7 | Elective Modules
- Data Strategy
- AI Applications and Business Strategies
- Leading Complex Projects
- Digital Transformation

Topic 8 | Capstone Strategy Project
From session-to-session across the core modules, participants will apply classroom lessons to a capstone project that evolves throughout the course. They are organized in groups or they can work individually on an opportunity or problem they are interested in.

The project asks participants to take the next steps in their team’s and organization’s leveraging of data for business outcomes. Group and individual coaching sessions will be led by an industry expert serving in a learning facilitator role and include high-touch discussions. Participants submit a presentation that covers the following:

- Summarizing the opportunity
- Listing the prioritization criteria for the opportunity. Include, data alignment, cultural alignment, and success metrics
- Submitting data inventory
- Using experimental techniques to test your technology strategy
- Assessing the strategy implementation and propose next steps
- Participants have the opportunity to presenting the project outcomes during a final day showcase with faculty

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