

Business Intelligence & Analytics Education



Online Education • Certification • Enterprise Solutions

- Analytics Fundamentals
- Fundamentals of Business Intelligence
- Fundamentals of Predictive Analytics
- Big Data Fundamentals
- Data Mining Concepts and Techniques
- Web Analytics
- Root Cause Analysis
- Location Intelligence and Geographic Information Systems
- Analytics-based Enterprise Performance Management
- Introduction to NoSQL
- Data Mining in R
- Data Science Fundamentals
- Streaming Data: Concepts, Applications, & Technologies



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Business intelligence and analytics are essential to modern data-driven businesses. BI is core competency of smart business. BI connects people with data and information, making it possible for decision-makers to access, analyze, and act on information. Business Analytics is the science of finding insight in data – exploring data to find patterns and interpreting the patterns to gain knowledge and understanding.

Everyone in business management today has an interest in BI and analytics to guide strategy, implement tactics, and support day-to-day execution and operation. BI enables business capabilities for measurement, monitoring, and tracking with tools such as dashboards and scorecards. Analytics encompasses a wide range of analysis goals including descriptive, discovery, diagnostic, predictive, and prescriptive analytics.

Working together, BI and analytics answer a broad range of business questions from what has happened, to why does it happen, what does the future hold, and what should we do. BI and Analytics is a multi-disciplinary field that demands attention to dimensions of technology, data, people, and organizational culture. Putting the pieces together in the right ways – building, operating, using, and evolving BI systems – is a complex undertaking that involves many people and many skills.

WHAT PEOPLE ARE SAYING ABOUT ELC



I found the courses to be very well designed; they were intellectually stimulating and challenging, but the workload was manageable.

-- Marina Severinovskaya, CIMP Ex - Data Governance, CIMP - Data Quality, MDM, IM Foundations, USA

CURRICULA AT-A-GLANCE

Full course descriptions begin on page 7.

Analytics Fundamentals

Instructors: Mark Peco, Dave Wells

This 6-hour online course provides a foundation to understand the scope and the key success factors of analytics.

Fundamentals of Business Intelligence

Instructor: Mark Peco

get introduced to the common challenges and risks encountered in BI implementations, and understand the role of people, information, technology and business objectives in BI success.

Fundamentals of Predictive Analytics

Instructor: Eric Siegel

. This 5-hour online course goes from fundamentals and best practices to hands-on discussion of predictive analytics models and their applications.

Big Data Fundamentals

Instructor: William McKnight, Jake Dolezal

This 3.5 hour course will help you make the most of big data and make the best choices to ensure information remains an unparalleled corporate asset.

Data Mining Concepts & Techniques

Instructor: Deanne Larson

This 3-hour online course will give insight into the data mining process, explain algorithms, and cover how to match the right models to the right problems.

Web Analytics

Instructor: Jake Dolezal

This 3 hour online training course provides an overview of Web analytics, as well as analytics techniques and applications that are suitable to the context of Web data.

Root Cause Analysis

Instructors: Dave Wells

Through this 3.75-hour online training course you will discover the art and science of knowing why. Learn to apply linear thinking, lateral thinking, systems thinking, and critical thinking – independently and in combination – to get to the core of even the most vexing problems.

Location Intelligence and GIS

Instructors: George Williams, K-Y Su

This 4 hour online training course provides an overview of geographic information system software with the goal of demonstrating how to use the technology to build Location Intelligence.

Analytics-based Enterprise Performance Management

Instructor: Gary Cokins

This 4-hour online course will describe how to complete implementing the full vision of analytics-based enterprise performance management to improve organizational performance.

Introduction to NoSQL

Instructor: William McKnight

This 3.5-hour online course addresses the emerging class of NoSQL technologies for managing operational big data. This includes key-value, column stores, document stores and graph databases. Learn about the ideal workloads for NoSQL in enterprises and where NoSQL adds value to an enterprise information strategy. Learn how to get the projects started or dropping the "not in production" label.

Data Mining in R

Instructor: Deanne Larson

This 3.5 online training course will show you how to use R basics, work with data frames, data reshaping, basic statistics, graphing, linear models, non-linear models, clustering, and model diagnostics.

Data Science Fundamentals

Instructor: Mark Peco & Natasha Balac

This course introduces data science and sets the stage for understanding how process, data, skills, culture, methodology and technical building blocks collectively drive results.

Streaming Data

Instructors: Kevin Petrie & Dave Wells

This 3-hour course covers the concepts, applications, and business and technical drivers for streaming data adoption, including an in-depth discussion of Apache Kafka.

CERTIFICATION PROGRAM

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CIMP: Demonstrate Mastery. Achieve Success.

Certification is an important tool for job seekers and for employers seeking to hire the most qualified people. eLearningCurve offers a robust certification program, Certified Information Management Professional (CIMP) that builds upon education to certify knowledge and understanding of information management.

The CIMP Business Intelligence and Analytics designation will make a clear statement that you have learned from the industry leaders and have demonstrated thorough understanding of business intelligence and analytics by passing several challenging exams.

For the true experts and standard bearers in the industry we offer the second level of CIMP certification - CIMP Ex. To earn the CIMP Ex designation you must demonstrate a combination of great Expertise, Experience, and Excellence.

What Sets CIMP Apart?

Rigorous exam system: We go beyond the basics. Rather than testing for knowledge that any industry professional should know, CIMP exams test an in-depth knowledge, comprehensive understanding, and ability to apply various concepts to a problem. You can be proud of your achievement of the CIMP designation, and hiring managers can be sure they are getting a highly knowledgeable employee.

Education to support certification: We believe that the best way to ensure success is to combine meaningful industry experience with thorough academic study. To that end, CIMP exams are aligned with our courses, developed and taught by top industry educators and professionals.

Designed with busy, working professionals in mind: No time-consuming or costly travel is required to complete coursework or to take your CIMP examinations. All courses and exams are available online. All that's required of candidates is an internet connection and the desire to demonstrate mastery of business intelligence and analytics topics and achieve success.

How Do I Enroll?

The most convenient and cost-efficient method to enroll in the CIMP program is with one of our Education Packages. Each package includes all courses and exams necessary to earn CIMP or CIMP Ex. Alternatively you can enroll in courses one at a time.

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ENTERPRISE SOLUTIONS



Today more than ever companies are watching expenses and looking for ways to streamline processes, make training convenient, and create a consistent, scalable learning environment.

eLearningCurve Enterprise is a flexible, convenient, and cost-effective way to train your employees and ensure that all team members have access to information management training they need when they need it. Whether your team or department work in the same office, or are on the other side of the world from each other, you can train them on time and on budget with eLearningCurve Enterprise.

Why eLearningCurve Enterprise?

- > Comprehensive educational solution from a single provider
- > Employees can take the courses they need when they need them
- > Ensure all team members are trained to the same high standard
- > Train employees no matter what their geographic location
- > Employ a fully scalable education solution
- > Minimize disruption to the business
- > Maximize your employee training ROI
- > Achieve 100% information comprehension
- > Get "live" time with our instructors
- Stretch your training budget
- > Get solutions for your specific needs

When you become an Enterprise customer:

We'll work with you to develop educational programs for different roles, positions, teams, departments, and manage and track enrollment of all students in online classes and CIMP exams. We'll rack and report educational progress for each student and work with you to meet any specific educational needs including:

- Organize question and answer meetings (via Webinar) with course instructors for groups of students who complete online courses
- > Organize onsite sessions when appropriate, often for senior management.
- > Prioritize new course development, or customize existing courses, per customer needs
- Create custom instances of our Learning Management System to reflect customer branding
- > Mount our online courses on the customer's Learning Management System

ELEARNINGCURVE ENTERPRISE BENEFITS

PARTNERSHIP: Comprehensive educational solution from a single provider. We'll be your educational "partner-for-life" providing employees with continuous information management education they need over the course of their careers.

FLEXIBILITY: *Employees can take the courses they need when they need them*. Our flexible program allows employees to take the courses they need when they need them to best suit their role, projects, backgrounds or interests.

CONSISTENCY: Ensure all team members are trained to the same high standard. Train your existing team, and set up courses for new hires and transfers. Consider CIMP exams to verify that your employees utilize the same methodology, techniques, and terminology.

SCALABLITY: Select an Education Partner who truly understands scalability. Roll out to a few employees, or your entire organization. Our solution can quickly and effortlessly accommodate groups of all sizes, even if they are geographically dispersed.

BREADTH: Acquire comprehensive education

and certification. We offer a full information management education. We have you covered with a comprehensive set of courses, exams, and certifications designed to impart knowledge, test understanding, and validate learning.

LOCATION: Train employees no matter what their geographic location. Overcome

geographical barriers to training. You can train your entire team whether they are in the same office, or on the opposite sides of the world. Everyone can access our online courses from any place at any time. LOGISTICS: Minimize disruption to the

business. Our online format allows employees to study from their office or home, allocate full training days, or study an hour a day during lunch breaks.

ROI: Maximize your employee training ROI.

No need to worry about paying for flights, hotels and other travel expenses. 100% of what you spend goes towards learning, thus achieving top quality education at a fraction of the cost of in-person training.

RESULTS: Achieve 100% information

comprehension. Learn from top industry experts in information management topics. Study at your own pace, listen to the material many times, and test your knowledge through CIMP certification exams.

SAVINGS: Stretch your training budget.

We offer various pricing options including volume discounts, pay-as-you-go model with increasing discounts, and other alternatives.

"LIVE" INTERACTION: Spend time with our

instructors. Organize question and answer meetings (via Webinar) with course instructors for groups of students who complete online courses.

INFORMATION MANAGEMENT 101 Mini-

classes. As a benefit to our enterprise customers we offer a certain number of complimentary licenses for our 101 mini-classes.

CUSTOME COURSEWARE: Get solutions for

your specific needs. Tell us which courses your organization needs the most. We'll work with top instructors in the industry to meet your needs in the most expedient manner.

Analytics Fundamentals

Instructors: Mark Peco and Dave Wells Duration: 6 hours

Analytics is a mainstream topic in almost every walk of life today. In business, it is discussed in the boardroom, at strategy sessions, in operational settings, in marketing campaigns and in technology groups. In everyday life, it is used to manage social networks, personal fitness, personal health, and much more.

Analytics offers tremendous potential for organizations to improve competitive positioning, generate new insights, guide decision makers, and shape positive outcomes. Success with analytics requires a understanding of many parts that must work together to turn potential into. The ability to harness data, technology, people, and processes cohesively is fundamental to success.

This 6-hour online course provides a foundation to understand the scope and the key success factors of analytics. Concepts and terminology are introduced, and scope of analytics is discussed to set context and provide a frame of reference for topics that follow. Business analytics is described and made tangible through a variety of industry use cases and functional examples.

You will learn:

- Key definitions, concepts and terminology
- Use cases and functional applications
- Descriptions and scope of data analytics
- Common techniques and how to apply them
- Some examples to address a variety of applications
- Key processes and methodologies to manage analytics work and activities

This course is geared towards:

- Business Managers and Executives
- Technology Managers and Executives
- Business Analysts
- Statisticians and Analytic Modelers
- Process Managers and Decision Makers
- Business Measurement/Performance Analysts
- IT Analysts and Developers
- Data Management Analysts
- Fechnology and Business Architects
- BI and Analytics Program Managers
- Anyone with interest in understanding analytics

Course Outline

Module 0. About the Course (6 min)

Module 1. The Analytics Landscape (29 min)

- Analytics Defined
- Two Kinds of Analytics
- The Language of Analytics
- o Summary

Module 2. Introduction to Business Analytics (49 mins)

- What is Business Analytics
- Why Business Analytics? Part 1 & 2
- o Example: Business Analytics Value
- Strategic Positioning of Business Analytics Part 1-5
- Industry Use Cases
- o Business Function Use Cases

Module 3a. Introduction to Data Analytics, Part 1 (73 mins)

- What and Why
- o Definitions and Context
- o Data Sources
- o Data Management

Module 3b. Introduction to Data Analytics, Part 2 (57 mins)

- o Data Discovery
- o Data Analysis

Module 4. Analytics Capabilities – Doing the Work (33 mins)

- Describing Capabilities
- The Analytics Layer

Module 5. Analytic Techniques (58 mins)

• Techniques

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- Examples Overview
- Linear Regression Example
- Logistic Regression Example
- Decision Tree Example

Module 6. Analytics Processes (42 mins)

- Oversight Process
- Development Process
- Delivery Process
- o Organizations and Processes

Fundamentals of Business Intelligence

Instructor: Mark Peco Duration: 5 hours, 40 minutes

The term Business Intelligence is not well understood in the industry and is used inconsistently by many IT and business professionals alike. Although the term was defined in the mid 1990's, the meaning of Business Intelligence continues to evolve as practitioners learn more about its capabilities and challenges.

This online training course introduces a "holistic" view of Business Intelligence and presents it as a complex system composed of many sub-systems that must be aligned and work together to produce the desired business results. The real success of BI within an organization can only be achieved if a holistic understanding is developed that shapes how the various components are designed and implemented. In addition to the extensive overview, the course makes Business Intelligence real and tangible by illustrating the concepts, principles, and practices using a detailed case study.

You will learn:

- Business Intelligence concepts and terminology
- The purpose and capabilities of successful BI and how value is actually generated within organizations
- How people, information, technology and business objectives are all critical components of BI success
- The common challenges and risks encountered in BI implementations
- How to utilize Systems Thinking concepts to describe BI holistically

This course is geared towards:

- Business Managers and Executives
- Technology Managers and Executives
- Business Analysts
- Business Measurement and Performance Analysts
- o IT Analysts and Developers
- Data Management Analysts
- Technology and Business Architects
- BI Program Managers and Team Members
- Anyone with an interest in understanding the

Course Outline

About the Course (9 min)

Introductory Concepts (73 min)

- o Definitions
- o System
- Architecture
- o Systems View of Business Intelligence

Generating Business Value (70 min)

- \circ Introduction
- The Business System
- The Decision Making System
- The Participation System
- The Work Execution System
- Case Study

Monitoring and Learning - Part I (60 min)

- > Introduction
- > The Information System
- The Measurement System

Monitoring and Learning - Part II (53 min)

- The Analytics System
- The Technology System
- Case Study Continued

Leadership and Control (40 min)

- o Introduction
- The Stakeholder System
- The Governance System
- Case Study Continued

Putting the Pieces Together (34 min)

- The Business Intelligence System
- Summary

"I was likely going to make the #1 mistake of focusing in on the technology skills and capabilities before making the business case properly. This course helped me reframe my approach." —Sean Keesler, USA

Fundamentals of Predictive Analytics

Instructors: Eric Siegel Duration: 5 hours

Business metrics do a great job summarizing the past. But if you want to predict how customers will respond in the future, there is one place to turn -- predictive analytics. By learning from your abundant historical data, predictive analytics delivers something beyond standard business reports and sales forecasts: actionable predictions for each customer. These predictions encompass all channels, both online and off, foreseeing which customers will buy, click, respond, convert or cancel. If you predict it, you own it.

The customer predictions generated by predictive analytics deliver more relevant content to each customer, improving response rates, click rates, buying behavior, retention and overall profit. For online applications such as e-marketing and customer care recommendations, predictive analytics acts in realtime, dynamically selecting the ad, web content or cross-sell product each visitor is most likely to click on or respond to, according to that visitor's profile.

This online training course goes from fundamentals and best practices to hands-on discussion of predictive analytics models and their applications.

You will learn:

- Applications: Business, marketing and web problems solved with predictive analytics
- The techniques, tips and pointers you need in order to run a successful predictive analytics and data mining initiative
- How to strategically position and tactically deploy predictive analytics and data mining How to bridge the prevalent gap between technical understanding and practical use
- How a predictive model works, how it's created and what it looks like
- Evaluation: How well a predictive model works and how much revenue it generates
- Detailed case studies that demonstrate predictive analytics in action and make the concepts concrete
- Two tool demonstrations showing how predictive analytics really works

This course is geared towards:

- Managers. Project leaders, directors, CXOs, vice presidents, investors and decision makers of any kind involved with analytics, direct marketing or online marketing activities.
- Marketers. Personnel running or supporting direct marketing, response modeling, or online marketing who wish to improve response rates and increase campaign ROI for retention, up-sell and cross-sell.
- Technology experts. Analysts, data scientists, BI directors, developers, DBAs, data warehousing professionals, web analysts, and consultants who wish to extend their expertise to predictive analytics.

Course Outline

About the Course (10 min)

Introduction (56 min)

- o Introduction to Predictive Analytics
- How It Works?
- Decision Trees
- Response Modeling

Applications and Data Requirements (76 min)

- Applications
- Attrition Modeling Examples
- Data Preparation
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Predictive Modeling Methods (68 min)

- $\circ \quad \text{More on Decision Trees}$
- o Other Modeling Methods
- Methods Comparison

Management and Deployment (63 min)

- Project Management
- Killer Application: Content Selection
- Case Study: Targeting Ads

Software Demonstrations (24 min)

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Big Data Fundamentals

Instructor: William McKnight & Jake Dolezal Duration: 3.5 hours

Big data has gone mainstream. It reaches well beyond the initial group of Silicon Valley "new economy" tech companies and the new media companies that helped launch the industry. The big data adoption landscape has expanded to include automakers, big finance, big insurance companies, telecommunications, healthcare companies and big retailers. Big data is past the hype phase and adoption is accelerating, but success is not a given and challenges remain.

This informative technical general session is full of the "need to know" for anyone involved in an enterprise data landscape. Learn from experienced enterprise information strategists with real project experience about the path that big data is on, the obstacles along the path, and how to confidently join the big data revolution. Learn the players in the technology landscape and the ideal workloads for big data in enterprises. Learn where big data adds value to an existing enterprise information strategy and how to get the projects started and dropping the "not in production" label.

This 3.5-hour online course addresses the technical community as well as the user community, providing guidance on how to penetrate and benefit the enterprise. This practical session will help you make the most of big data and make the best choices to ensure information remains an unparalleled corporate asset.

You will learn:

- A workable definition of big data so you know it when you see it
- o Drivers for big data
- Big data in the enterprise
- o The Hadoop framework for analytical big data
- NoSQL and operational big data
- o An overall information architecture with big data

This course is geared towards:

- o Business and Data Analysts
- BI Architects and BI Developers
- o Data Architects
- o Data Integrators
- Analytics Developers and Consumers
- Anyone who needs to understand the business and technical implications of Big Data

Course Outline

About the Course (8 min)

Big Data Definition (34 mins)

- Big Data Introduction
- Big Data Technology
- Enablers for Big Data

Big Data Drivers (28 mins)

- Value Density of Data
- Before Data was Big...
- Once Big Data Grew, Value was Realized
- Data is too Valuable to Discard
- Data is too Valuable to Ignore
- Focus Before Big Data
- Focus After Big Data
- Performance/Workload Optimization
- Cost of Storage
- Other Cost Drivers
- o Analytic Need
- Implication for IT Skills

Big Data in the Enterprise (21 mins)

- The Great Database Thaw
- o Data Access in the Modern Enterprise
- Marz's Lambda Architecture
- o Row vs. Columnar Stores
- o In-Memory
- Big Data & Analytics
- Leveraging Hadoop for Analytics

Hadoop Ecosystem (40 mins)

- Hadoop Overview
- Hadoop Distributions
- Hadoop Framework

NoSQL (31 mins)

- NoSQL "Schemaless" Data Modeling
- NoSQL Heartburn
- Key-Value Stores
- Document Oriented Database
- Graph Oriented Database
- Stream Processing Engines
- > NewSQL

Enterprise Architecture with Big Data (45 mins)

- Modern Components of Information Architecture
- o ETL with Big Data Systems
- Analytic Patterns with Hadoop
- Where Do We go from Here?

Data Mining Concepts and Techniques

Instructor: Deanne Larson Duration: 3 hours

Data mining originated primarily from researchers running into challenges posed by new data sets. Data mining is not a new area, but has re-emerged as data science because of new data sources such as Big Data. This course focuses on defining both data mining and data science and provides a review of the concepts, processes, and techniques used in each area.

This 3-hour online course will give you insight into the data mining process, explain models and algorithms, and give an understanding of how to match the right data mining models to the right problems.

You will learn:

- The definitions of data mining and data science
- The role of statistics in data mining
- Machine learning concepts
- To differentiate between supervised and unsupervised learning
- The data mining process
- How to conduct exploratory data analysis
- To identify data mining models and algorithms
- How to match the problem with the model
- Model validation techniques
- How to deploy data mining models

This course is geared towards:

- Analysts looking to gain foundational data mining knowledge
- Analysts looking to understand data mining models
- Analysts looking to apply the right data mining models to the right problem
- Attendees should have a basic understanding of undergraduate statistics, data types, databases, and data management concepts

Course Outline

About the Course (3 min)

Introduction to Data Mining (25 min)

- Module Overview
- What is Data Mining?
- Statistics in Data Mining
- Machine Learning

The Data Mining Process (24 min)

- o Data Mining Framework
- Data Mining Approaches
- Data Mining Techniques
- Data Mining Process

Exploratory Data Analysis (29 min)

- 1. Exploratory Data Analysis
- Data Profiling: Uncovering Structure
- o Data Profiling: Types of Profiling
- Descriptive Statistics
- Results of Data Profiling Data Relationships
- Findings Important Variables
- Visualization Techniques
- Outcomes and Interpretations
- Sampling Size
- o Sample Quality
- Big Data Considerations
- Feature Selection
- o EDA Checklist

Data Mining Models and Algorithms (71 min)

- o Build the Model
- Anatomy of a Model
- What is a Classification Problem
- o Classification
- o Ensemble Methods
- Clustering
- o Clustering Uses
- Association-Market Basket
- Association Rules
- Association Uses
- Application of Data Mining Models
- 2. Model Selection

Model Validation Techniques (18 min)

- 3. The Validation Process
- 4. Fitting a Model
- 5. Bias/Variance Tradeoff
- 6. Regression Mean Squared Error
- 7. Linear Regression Confidence and Prediction Intervals
- 8. Logistic Regression Significance Test
- 9. Classification Accuracy
- 10. Classification Accuracy Other Measures
- 11. Prediction Error Methods
- 12. Hold-Out Cross Validation
- 13. K-Fold Cross Validation Method

Module 6. Deploying Data Mining Tools (9 min)

- 14. Overview
- 15. Deploying Data Mining Models
- 16. Course Summary Parts 1 & 2
- 17. References

Web Analytics

Instructor: Jake Dolezal Duration: 3 hours

The Web analytics practice has evolved rapidly as the landscape of Internet usage and devices continues to broaden. Today businesses collect an unprecedented amount of data about customers to seek deeper, more actionable insights. Many companies are integrating their Web analytics data with data from other sources and performing analytics to understand customer behavior and enable highly individualized marketing.

This 3 hour online training course provides an overview of Web analytics, as well as analytics techniques and applications that are suitable to the context of Web data. Theory and practice are illustrated by several real-life cases and demonstrations.

You will learn:

- Gain a deep understanding of Web analytics as well as data about Online customer interactions
- Identify and interpret conventional and emerging Web analytics measurements
- Understand Web data collection and integration techniques and their potential applications and limitations
- Distinguish useful data from the "noise"
- Learn how to gain actionable insights for online marketing efforts with visitor-centric techniques such as profiles, patterns, goals, and outcomes
- What tools are needed on a Web analytics workbench

This course is geared towards:

- BI professionals or data analysts with experience in other areas of customer data who are in the process of incorporating Web data into their warehouses or models, or developing custom BI for Web analytics
- CRM, marketing, sales and other business leaders who want to improve their understanding of Web analytics data and how actionable insights can be gleaned from it
- Technology and information leaders, managers, and professionals who want to learn more about current trends and broaden their understanding of Web analytics

Course Outline

About the Course (7 min)

The Business Case for Web Analytics (18 min)

- Value Density of Data
- Before Web Data was "Big"

- Data Value Increases with Volume
- o Web Data is Too Valuable to Ignore
- o Web Analytics "Money ball"
- Analytics Needs of a Modern Business
- Web Analytics Health Check
- Building a Business Case
- Examples

Anatomy of Web Analytics (29 min)

- Page Views
- o Sessions

Dimensions and Metrics (29 min)

- Dimensions Versus Metrics
- Metrics as Dimensions
- o Common Dimensions and Metrics

Visualizations (26 min)

- Self Service Web Analytics
- Shrinking Business Proximity
- o Business Consonance
- Cooperative Analytics Workflows
- Visualizations

Web Analytics Setup (25 min)

- o Create a Google Analytics Account
- o Tracking Code Snippet
- Tagging Pages
- Define Goals
- o Back Up Your Data
- Mobile Visitors
- o Disseminating Reports
- Configuring Google Analytics
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Taking the Next Steps (12 min)

- Guidelines for Getting the Most
- Key Performance Indicators
- KPI Examples
- Google Universal Analytics
- Web Analytics from Sensors/IoT
- Integrated Web Analytics
- Web Analytics Additive to Other Data

Advanced Integration of Web Analytics (38 min)

- What is Hadoop?
- Hadoop and Data Integration
- Hadoop and Data Integration Use Cases
- Hadoop Tools for Data Integration
- Real-Life Examples
- Integrated Web Analytics: Types of Analysis
- Integrated Web Analytics: Methods of Analysis

Root Cause Analysis

Instructor: Dave Wells Duration: 3 hours, 45 minutes

Understanding why things happen is a fundamental management skill. For anyone who is challenged to manage data quality, business processes, or people and organizations, finding root causes is an essential skill. Understanding why is the key to knowing what to do – the core of sound decision making. But causeand-effect relationships are elusive. Real causes are often difficult to find so we settle for easy answers. This leads to fixing symptoms rather than to solving problems, and to little or no gain where opportunity is abundant.

Root cause analysis is the alternative to easy answers. Looking beyond the apparent and obvious to find real causes brings insight and sows the seeds of foresight. Through this online training course you will discover the art and science of knowing why. Learn to apply linear thinking, lateral thinking, systems thinking, and critical thinking – independently and in combination – to get to the core of even the most vexing problems.

You will learn to:

- Recognize and avoid logical fallacies
- Identify and distinguish between correlation, coincidence, and cause
- Perform fast and light causal analysis using the "5 whys" technique
- Explore linear cause-and-effect chains with fishbone diagramming
- Describe complex cause-effect networks with causal loop models
- Challenge and refine linear and loop models with lateral and critical thinking techniques
- Apply root cause analysis to effectively manage quality, processes, and organizations

This course is geared towards:

- Data quality professionals and practitioners
- Quality management and quality improvement professionals
- Business analysts and business analytics professionals
- Managers and problem-solvers seeking insight and confidence in decision making
- Anyone responsible to manage data, information, people, process, or technology

Course Outline

About the Course (5 min)

The Nature of Cause and Effect (23 min)

- Definitions and Distinctions
- A First Look at Cause and Effect Models
- o Cause and Effect Misconceptions

RCA Concepts and Principles (22 Min)

- The Purpose of RCA
- The Process of RCA
- Practical Application

Basic Causal Modeling Techniques (55 min)

- o The Five Why's Method
- Fishbone Diagramming
- Five Why's and Fishbone Together

Complex Causal Modeling Techniques (61 min)

- o Systems Thinking Concepts
- Causal Loop Models
- o System Archetypes

Verifying Cause & Effect Conclusions (57 min)

- Nonsense and Logical Fallacies
- Fallacies and Thinking Styles
- Critical Thinking
- o Lateral Thinking
- Course Summary
- o Final Thoughts

Location Intelligence and GIS

Instructors: George Williams and K-Y Su **Duration: 4 hours**

Location Intelligence has been important for human endeavors for centuries. With modern advances in Information Technology, Location Intelligence can be achieved by commercial businesses with the use of Geographic Information Systems. A Geographic Information System (or GIS) is a relational database technology that enables both analysis and visualization of geographic, demographic, and other types of geospatial data. The technology was first introduced in the 1970s and has evolved to provide scientists, engineers, and business analysts with a means by which to analyze their data through a customizable map and graphical user interface.

While all levels of government, military, engineering & scientific consultants, and academic organizations have been successfully using GIS for a variety of applications, commercial businesses have been slow to adopt the technology in order to provide better Location Intelligence for their Business Intelligence operations.

This online training course provides an overview of GIS software with the goal of demonstrating how to use the technology to build Location Intelligence.

You will learn:

- What a Geographic Information System (GIS) is, its relationship to relational database technology and typical existing organizational data, its historical applications, the importance of geocoding, and how to obtain the software.
- How to use GIS to perform Geospatial Analyses of data within a data repository
- How to use GIS to build Location Intelligence, along with current and past examples of GIS used for Location Intelligence

This course is geared towards:

- o IT professionals who are interested in understanding the nature and uses of geospatial data
- o Business analysts and data analysts who need to perform location-based analysis
- Data scientists and analytic modelers who need to understand location analytics
- Data management, data warehousing, and BI professionals who need to integrate geospatial data into the BI ecosystem
- o Business executives and managers who want to understand the potential and the complexities of location-based analysis

Course Outline

About the Course (11 min)

What is GIS Actually? (47 min)

- o Overview
- Basic GIS Definition and Common 0 Misconceptions
- Location Intelligence
- What Does GIS Do?

GIS Functions and Spatial Analysis: Part 1 (38 min)

- Overview
- Map Production– Basic Function 0
- Thematic Mapping 0

GIS Functions and Spatial Analysis: Part 2 (41 min)

- Geospatial Data Analysis
- Modeling Building and Scripting 0

Location Intelligence: Part 1 (46 min)

- Module Overview 0
- Not a New Concept 0
- Who Uses GIS for Location Intelligence? 0
- USAF Missile Site Selection Program 0
- Location Intelligence and Public Utilities \bigcirc
- Department of Ecology: Underground Tank 0 **Inspection & Maintenance**

Location Intelligence: Part 2 (64 min)

- Disaster Preparedness and Response 0
- Redistricting 0
- Coin Machine Placement Modeling 0
- Location Intelligence for Cell Industry 0
- Location Intelligence and Waste 0 Management
- Exploring Uncharted Territory 0
- Maps as Marketing Tools 0
- Spatial OLAP Technology 0
- Module Summary
- Course Summary

Analytics-based Enterprise Performance Management

Instructor: Gary Cokins Duration: 4 hours

Many organizations are far from where they want and need to be with improving performance, and they apply intuition, rather than hard data, when making decisions. Enterprise and corporate performance management (EPM/CPM) is now viewed as the seamless integration of managerial methods.

The EPM/CPM methods include balanced scorecards with KPIs; strategy maps; enterprise risk management (ERM); driver-based planning and budgets and rolling financial forecasts; what-if scenario planning with sensitivity analysis; activity-based costing (ABC) for product, service-line, channel and customer profitability measurement and management; supply chain management; lean and Six Sigma quality management; and resource capacity planning. Each method can be turbocharged by embedding in them business intelligence (BI) and business analytics (BA) of all flavors. These can include correlation, segmentation, associations, and regression analysis and especially predictive analytics.

This 4-hour online course describes how to complete implementing the full vision of analytics-based enterprise performance management to improve organizational performance.

You will learn:

- How to view enterprise and corporate performance management (EPM/CPM) as the seamless integration of managerial methods rather than as a process
- How business analytics is an advance over business intelligence and where Big Data fits in
- How to identify and differentiate strategic KPIs in a balance scorecard and operational performance indicators (PIs) in dashboards
- How to properly calculate product, service-line, channel, and customer profitability for analysis, insights and actions
- How to perform "predictive accounting" for capacity-sensitive driver-based budgets / rolling financial forecasts, what-if analysis, and outsourcing decisions
- How to overcome implementation barriers such as behavioral resistance to change and fear of being held accountable

This course is geared towards:

- o CxOs & CFOs
- Financial officers and controllers
- CIOs and information technology professionals
- Managerial and cost accountants
- Financial and business analysts
- Budget managers
- Strategic planners
- Marketing and sales managers
- Supply chain analysts
- o Risk managers
- Board of Director members

Course Outline

About the Course (5 min)

Overview of ABEPM (20 min)

The Rise of BI & Business Analytics (21 min)

Strategy Formulation & Management (22 min)

Fact-Based Data with Managerial Accounting (78 min)

Customer Profitability and Value Management (34 min)

The Shift to Predictive Accounting for Budgeting and Planning (32 min)

Accelerating the Rate of Adoption for Implementing EPM (32 min)

This is a sampling of topics covered during this course. For a complete listing, please visit: https://ecm.elearningcurve.com/ProductDetails.a sp?ProductCode=BA-07-a

Introduction to NoSQL

Instructor: William McKnight Duration: 3 hours, 30 minutes

In this informative class, learn about the emerging class of NoSQL technologies for managing operational big data. This includes key-value, column stores, document stores and graph databases. Learn about the ideal workloads for NoSQL in enterprises and where NoSQL adds value to an enterprise information strategy. Learn how to get the projects started or dropping the "not in production" label.

This "code-lite" session addresses the NoSQL community as well as the key user community, providing guidance on how NoSQL technologies work and how to penetrate the enterprise. This practical session will help you add a significant class of technologies into consideration to ensure information remains an unparalleled corporate asset.

You will learn:

- Big data basics
- Enablers for NoSQL
- > NoSQL data models: key-value, document, graph
- NoSQL usage patterns
- NoSQL database architectures
- Graph database modeling and architecture

This course is geared towards:

- Big data basics
- Enablers for NoSQL
- NoSQL data models: key-value, document, graph
- NoSQL usage patterns
- NoSQL database architectures
- Graph database modeling and architecture

Course Outline

About the Course (8 min)

Big Data Overview and Common Themes (49 min)

- No More One Size Fits All
- The No Reference Architecture 0
- The Relational Database Data Page
- What Does Big Data Mean? 0
- Google Search Trends 0
- Why the Sudden Explosion of Interest 0
- What Happens in an Internet Minute? Ο
- Sensors Data Ο
- Customer Demands Drive Technology 0
- New Data Types 0
- Benefits of JSON 0
- Why NoSQL for Big Data? 0
- ACID 0
- Hadoop, MapReduce and Big Data Ο
- Why NoSQL Not Hadoop for Operations 0
- MapReduce Part 1 & 2 0
- Scale Up vs. Scale Out 0

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- DFS Block Placement Example
- File System Summary

NoSQL History & Jargon (17 min)

- NoSQL Inspirations
- NoSQL History
- Google MapReducer Paper
- Google Bigtable Paper
- o Memcached
- o Schemaless
- Keeping it Simple
- CAP Theorem Part 1 & 2
- Automatic Sharding
- NoSQL Node Specification

Enablers for NoSQL (19 min)

- Data Integration
- Data Visualization
- Infrastructure Strategy, Including Cloud
- Traditional Data Modeling
- Data Modeling for NoSQL
- NoSQL is for Applications, Not DW or ERP
- NoSQL Schemaless Data Modeling
- Force Fitting Unstructured Data NoSQL Modeling from RDBMS
- Security Concerns
- Easing Into Change
- What Will Motivate IT to Adopt NoSQL?

NoSQL Data Models (49 min)

- Data Types and NoSQL Data Models 0
- Key Value Stores
- Document Stores
- Column Stores
- Operational Big Data Platform Solution
- Multiple NoSQL Solutions 0

Relationship Model: Graph Oriented (68 min)

- Module Overview
- The Graph Database Revolution
- Relationship Data
- Graph Algorithms
- o Use Cases
- Graph Modeling
- Property Graph Databases
- Semantic Graph Databases
- **Graph Engines** 0

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The Future of NoSQL (8 min)

- o Overview
- Questions for your NoSQL Prospect Vendor
- Future of NoSQL
- Big Data and NoSQL Sales Projection
- The NoSQL Challenge
- o Getting Started
- What Technology to Select

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Data Mining in R

Instructors: Deanne Larson Duration: 3.5 hours

With increasing interest in big data, the topic and skills of data mining get new attention, including strong interest in the value that can be derived from large data sets. Data mining is the process of selecting, exploring, and modeling large amounts of data to uncover previously unknown information for business benefit.

R is an open source software environment for statistical computing and graphics and is very popular with data scientists. R is being used for data analysis, extracting and transforming data, fitting models, drawing inferences, making predictions, plotting, and reporting results. This online training course will show you how to use R basics, work with data frames, data reshaping, basic statistics, graphing, linear models, non-linear models, clustering, and model diagnostics.

You will learn:

- R basics such as basic math, data types, vectors, and calling functions
- Advanced data structures such as data frames, lists, and matrices
- R base graphics
- R basic statistics, correlation, and covariance
- Linear models such as decision trees and random forests
- > To apply clustering using K-means
- Model diagnostics

This course is geared towards:

- Data analysis and business analytics professionals
- Anyone interested to learn data mining techniques to find insights in data, and who has some statistical and programming experience

Course Outline

About the Course (4 min)

Introduction to R Studio (20 min)

- \circ Overview
- What is R
- o What is RStudio
- Why RStudio?
- Navigating RStudio
- o R Environments

R Basics (34 min)

- \circ Overview
- o R Math
- o R Data Types
- Working with Data Structures
- o Loading Data
- Writing Data
- Summary

Introduction to Data Mining in R (89 min)

- o Overview
- o Exploratory Data Analysis
- o Base Graphics in R
- Linear Regression
- Logistic Regression
- Summary

Classification and Clustering Models in R (56 min)

- Overview
- o R Math
- o R Data Types
- o Working with Data Structures
- o Loading Data
- Writing Data
- Summary

Data Science Fundamentals

Instructors: Mark Peco & Natasha Balac Duration: 5 hours

Data science has matured into a cross functional discipline. In simple terms, its main purpose is to extract meaningful information from a variety of data sources. This definition is very general and must be explored in more detail to understand the building blocks needed for success. Related workgroups must understand each other and work together to make meaningful impact.

Effective data science is a critical enabler for companies to become "data-driven" and to "compete on analytics". To give shape to data science as a discipline, this course introduces core principles and concepts to provide a solid foundation of understanding. Data science is described in terms of its, purpose, capabilities, techniques, approaches and skills. It's dependencies on other disciplines and how it enables value creation within the broader "data-driven" ecosystem is also provided.

This course introduces data science and sets the stage for understanding how process, data, skills, culture, methodology and technical building blocks collectively drive results.

You will learn to:

- Key concepts needed for successful data science
- > How data science relates to other related disciplines
- Practical data science process lifecycle steps
- Common data science tools, techniques and modeling categories
- Recommended data science approaches, methods and processes
- The data science process
- > Critical success factors for data science
- Why organizational culture and data literacy are challenges that must be managed

This course is geared towards:

- Business managers and executives
- Technology managers and executives
- > Data science and data engineering team members
- Business analysts, statisticians and modelers
- Process managers and decision makers
- Business measurement and performance analysts
- IT analysts and developers
- Data management analysts
- Technology and business architects
- Analytics, business intelligence, data science and data engineering program leaders
- Anyone with an interest in understanding the capabilities, opportunities and challenges offered by data science

Course Outline

About the Course (10 min)

Setting the Stage (60 min)

- o Basic Concepts
- Value Chain Analysis
- o Thinking Styles
- Research Methods
- 0

Introducing Data Science (49 min)

- Data Science Concepts
- Aspects of Science in Data Science
- Value Framework
- Module Summary

Being Data Driven (26 min)

- Pursuit of Value
- Data Driven Organizations
- Success Factors

Data and Technology Landscape (88 min)

- Big Data The Open Catalyst
- Data Resources
- Data Management
- Discovery and Exploration
- Model Building
- Model Execution and Analysis
- Interpretation and Storytelling

Modeling and Analysis Techniques (55 min)

- Problem Framing
- Research Methods
- Modeling Techniques
- Model Deployment

Streaming Data: Concepts, **Applications, and Technologies**

Instructors: Dave Wells & Kevin Petrie Duration: 3 hours

The analytics opportunities with IoT and application data streams are abundant, but the value of streaming technology is not limited to native data streams. In today's fast paced business world, the need for fast data is pervasive and tacit acceptance of high-latency data is rapidly diminishing. Streaming as an alternative to batch ETL is a practical way to meet the demand for fast data.

Change Data Capture (CDC) is a category of technology that captures data about changes made to a database inserts, updates, and deletes - and makes that data available to downstream processing such as data pipelines that flow to data warehouses and data lakes. CDC can be combined with streaming to accelerate data flow and reduce data latency.

You'll need to know the actions and responsibilities of data producers and of data consumers, as well as the capabilities for cluster management, data connections, and APIs. Integrating Kafka or other streaming technologies into your data ecosystem is an important consideration.

You will learn:

- The business and technical drivers for streaming data adoption
- Data pipeline processing patterns and the advanced patterns that are possible with streaming
- Use case patterns and a variety of use cases for streaming data
- Five kinds of Change Data Capture (CDC) and the strengths and weaknesses of each
- The concept and applications of streaming first architecture
- \geq Kafka architecture and essential components
- Kafka data and process flow
- > The roles and functions of Kafka broker, data producers, and data consumers
- Cluster management, data connections, and APIs with Kafka
- Integrating streaming into the data ecosystem

This course is geared towards:

- Data and analytics leaders and managers
- Data and analytics architects
- \geq Data scientists
- Data engineers
- Data governance professionals who need to understand the opportunities and implications of streaming data
- \geq Anyone with a desire to know how streaming is changing the data management landscape

Course Outline

About the Course (5 min)

The Need for Speed (21 min)

- Batch Vs. Real Time
- The Speed of Business
- The Speed of Data Parts 1-3
- Fast Data Drives the Consumer World
- Fast Data Drives the Business World
- Fast Data Drives the Analytic World
- The Business Case for Fast Data

Moving Data through Pipelines (61 min)

- Data Pipeline Processing
- Data Stream Processing
- IoT and Edge Computing

Change Data Capture (10 min)

- Data Management–A New Streaming Use Case
- What is CDC?

Streaming First Architecture for Data Management (17 min)

- Modern Enterprise Dara Requirements
- Essential Characteristics of Streaming Technology
- Stream Processing Technologies
- Kafka Stream Processing Basics
- Replacing ETL with CDC and Streaming
- Streaming First Architecture
- Moving to Streaming First Architecture

Data Streaming with Apache Kafka (11 min)

- Introduction to Apache Kafka
- Kafka Predecessors

Kafka Architecture (19 min)

- Apache Kafka Architecture
- Essential Components Part 1-2
- Data and Process Flow Part 1-2
- Kafka Record Key Components
- o Kafka Broker Overview
- Cluster Management with Apache

Data Stream Ecosystems and Use Cases (40 min)

- Data Streaming Use Cases
- Streaming Integration with Data Ecosystems 0
- Kafka Alternatives from Cloud Service 0 Providers
- Amazon Kinesis
- Azure Event Hub 0
- Google Cloud PUB/SUB

Full outline:

https://ecm.elearningcurve.com/Online_Data_Science Course p/sc-08-a.htm

OUR INSTRUCTORS

Natasha Balac

Natasha Balac currently directs the Interdisciplinary Center for Data Science (ICData) at Calit2/Qualcomm Institute, and lectures in the area of big data and data science. She has led the Predictive Analytics Center of Excellence and collaborated on numerous government and research projects in the areas of analytics and visualization.

Gary Cokins

Gary Cokins is an internationally recognized expert, speaker, and author in advanced cost management and performance improvement systems. He is the founder of Analytics-Based Performance Management, an advisory firm located in Cary, North Carolina.

William McKnight

William is president of McKnight Consulting Group, which includes service lines of Master Data Management, IT assessment, Big Data, Columnar Databases, Data Warehousing, and Business Intelligence. He functions as Strategist, Lead Enterprise Information Architect, and Program Manager for sites worldwide.

Eric Siegel

Eric Siegel, Ph.D., is a seasoned consultant in data mining and analytics, an acclaimed industry instructor, and an award-winning teacher of graduate-level courses in these areas. An expert in data mining and predictive analytics, Dr. Siegel served as a computer science professor at Columbia University.

Jake Dolezal

Jake Dolezal has over 16-years' experience in the Information Management field with expertise in business intelligence, analytics, data warehousing, statistics, data modeling and integration, data visualization, master data management, and data quality across a broad array of industries, including: healthcare, education, government, manufacturing, engineering and gaming.

Deanne Larson

Dr. Larson is an active practitioner and academic focusing on business intelligence and data warehousing with over 20 years of experience. She completed her doctorate in management in information technology leadership. She holds PMP and CBIP certifications.

Mark Peco

Mark Peco is an experienced consultant, educator, practitioner and manager in the fields of Business Intelligence and Process Improvement. He provides vision and leadership to projects operating and creating solutions at the intersection of Business and Technology. Mark is actively involved with clients working in the areas of Strategy, Process Improvement, and BI.

Kevin Petrie

Kevin's passion is to decipher what technology means to practitioners. He has invested more than 20 years in technology, as a strategy analyst, instructor, product marketer and services leader. Kevin is currently Senior Director of Product Marketing at Attunity, a provider of data integration software based in Burlington, MA.

K-Y Su

K-Y Su is a freelance locational data analyst with analytical experience in a variety of sectors and subjects. K-Y has performed GIS analysis for World, the Washington State Legislature and Department of Ecology, some environmental consulting firms, and several nonprofits and trade associations. K-Y has a BS in biochemistry and a certificate in GIS.

Dave Wells

Dave Wells is a consultant, teacher, and practitioner in the field of information management. He brings to every endeavor a unique and balanced perspective about the relationships of business and technology. This perspective helps to align business and information technology in the most effective ways. Dave is a frequent contributor to trade publications and is a co-author of the book BI Strategy: How to Create & Document.

George Williams

George Williams is a multi-disciplinary professional with nearly 30 years of experience as a Data Analyst, GIS Analyst, Geoscientist, and Project Manager. He currently works as a Data Program Manager. He has an educational background in Earth Sciences and Hazardous Materials Management along with 15 years of experience managing Geo-technical & Environmental Engineering projects.

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WHAT OUR CUSTOMERS ARE SAYING...



The courses are well laid out, build on each other, and are rich in practical content and advice.

-- Steve Lutter, CIMP Data Quality, DM and Metadata, IM Foundations, Business Intelligence, Data Governance, MDM, United States

It is evident that a thorough and considerable effort has gone into the preparation of this program.

-- Alfredo Parga O'Sullivan, CIMP Ex Data Quality, Ireland



The ability to take the courses at my own pace and at a time suitable for me was of great help.

-- Geeta Jegamathi, CIMP Data Quality, India

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