JIGSAW ACADEMY

Analytics for Professionals

Jigsaw Academy aims to meet the growing demand for talent in the field of analytics by providing industry-relevant training and education to develop business-ready professionals

About Jigsaw Academy

- First of its kind learning academy that provides industry-relevant training and education in the field of analytics to develop business-ready professionals

- Carefully-designed courses that are a unique blend of statistics, statistical tools and industry knowledge through real life examples—designed to meet the specific needs of both students and employers

- Faculty includes senior industry professionals with specific domains of expertise

- Provides critical soft skills and project management trainings that are sought after by employers and are not usually included with technical training

- Is an initiative by IIM Bangalore alumni who have extensive experience in the field of analytics, marketing, off-shoring and education

Foundation course in Analytics

Program Duration: **10 weeks, 120 hours**

Class Room Sessions: **60 hours**

Lab Sessions: **60 hours**

Location: **Virtual classroom**

Class Timing: **Saturday, Sunday (3 hours each)**

Program Fee: **Rs. 32000 (Indian residents)**

Program Fee: **$900 (Foreign nationals)**

Certification: Participants will be awarded a certificate in Business Analytics on successful completion of the stipulated requirements.

Foundation course in Analytics

Analytic Techniques

Provides an understanding of analytics, usage in business, modeling algorithms as well as the most widely used analytic techniques using case studies and real business situations.

SAS Training

Hands on experience on SAS including case studies on telecom, insurance, retail and other industries. Covers the procedures and techniques that are most required in business analytics.

Excel Training

Training on the most commonly used analytic software. Covers excel functions that are used in business analytics.

Statistics

Covers the basics of statistics as well as advanced statistical concepts used in the various analytic techniques. Designed for business analysts.

Placement Package

Covers the soft skills required for the role of a business analyst. Workshops on resume building and interviewing for analytics. Talks by industry experts.

Foundation Course: Analytics Techniques

Module: Analytic Techniques

Class Room Sessions: 30 hours

Lab Sessions: 30 hours

Overview of Analytics

- What is analytics?
- Types of problems in analytics
- Case studies of application of analytics in business
- When analytics does not work
- Analytics vs. data warehousing, OLAP, Statistics
- Widely used analytic software
- Companies using analytics
- Day in the life of a business analyst
- Career path in analytics
- Qualities of a business analyst

Models and Algorithms

- Modeling Terminology
- Linear Regression
- Logistics Regression
- Decision Trees
- MARS
- Rule Induction
- K-nearest
- Neural Network
- Genetic Algorithm

Analytic Methodology

- Problem definition
- Data selection
- Data exploration
- Data partition
- Data cleansing
- Data transformation
- Modeling
- Validation
- Deployment
- Assessment
- Re-start

Problem Definition

- Basics of problem definition
- **Case study - Car Insurance**
- **Case study - Credit Cards**

Data Exploration

- Overview
- **Case study - Telecom data**
- Preliminaries
- Types of data
- Data sanity checks
- Summary statistics
- Derived variables
- Cross tabs
- Graphical analysis
- Exceptions
- Correlations

Foundation Course: Analytics Techniques

Data Preparation
- Why data prep
- Outlier treatment
- Missing values treatment
- **Telecom case study**
- Categorical variables
- Dummy variables
- Derived variables
- Lag variables
- Interaction variables
- Variable transformation
- Quadratic variables
- Date, time variables
- Sampling and partitioning
- **Case study - Auto manufacturer**

Regression
- Basics of Regression
- Linear Regression
- Logistic Regression
- Interpretation of modeling results
- Violation of regression assumptions
- **Insurance Case study**

Decision Trees
- What are decision trees?
- Examples of trees
- Terminology in decision trees
- Data preparation for trees
- How to create a tree?
- Measure of effectiveness
  – Gini
  – Chi-square
  – Information gain
  – Reduction in variance
  – Others
- Application of algorithms
- **Case study - Fraud detection**
- **Case study - Car Insurance pricing**
- Use of decision trees
- Pros and cons
- What makes a good tree?
- When to use Decision trees?
- Widely used software for Decision trees

Clustering
- What is clustering
- Types of clustering
- K-means clustering
- Measures of homogeneity
- Data prep
- Hierarchical clustering
- Cluster evaluation
- Cluster profiling
- When to use
- Important considerations
- **Clustering in SAS - case study on store clustering**

Pitfalls to avoid while Modeling
- Misleading patterns
- Biased population
- Data at wrong level
- Already known insights
- Un-actionable insights

Foundation Course: Tool Training

Module: SAS

Class Room Sessions: 15 hours

Lab Sessions: 20 hours

SAS
- Overview of SAS
- SAS Set Up
- DATA and PROC
- PDV and SAS Processing Rules
- SAS Syntax
- Reading Data into SAS
- Exporting Data from SAS
- Types of Variables
- Informat and Format options
- Data Manipulation in SAS
- Creating Variables in SAS
- SAS Functions
  - Numeric
  - Character
  - Date
- SAS Procedures
  - CONTENTS
  - PRINT
  - SORT
  - FREQ
  - MEANS
  - UNIVARIATE
  - CORR
  - PLOT
  - TRANSPOSE
  - REG
  - CLUSTER
- SAS Programming Basics
  - If Then Else
  - DO Loop
  - Where
- SAS Best Practices

Module: Excel

Class Room Sessions: 10 hours

Lab Sessions: 10 hours

Excel
- Introduction to Excel
  - Overview of Excel
  - Basics
  - Copy/Paste
  - Formatting Cells
  - Worksheets
  - Formatting Worksheets
  - Print
- Sort
- Filter
- Formulas
- Functions
  - Math
  - Text
  - Statistical
  - Date
- If statement
- Lookup
- Pivot Tables
- Charts
- Formatting Charts
- Conditional Formatting
- Name
- Ranges
- Conditional Sum
- Introduction to Excel Macros

Knowledge Studio
- Features of Knowledge Studio
- Case study using Knowledge Studio

Foundation Course: Statistics and Placement

Module: Statistics

Class Room Sessions: 5 hours

Statistics
- Introduction to statistics
- Summary statistics
  - Mean
  - Median
  - Mode
  - Variance
- Probability
- Probability distribution
  - Binomial
  - Poisson
  - Normal

- Hypothesis testing
- T-test
- Chi-square test
- ANOVA
- Non parametric testing

Module: Placement Package

Class Room Sessions: 10 hours

Placement Package
- Resume writing workshop
  - How to write a resume for an analytics role
- Interview prep workshop
  - How to prepare for an interview for an analytics role

- Presentation skills workshop
  - How to build and deliver presentations
  - Presentation of analysis
- Other workshops
  - Teleconference skills
  - Listening skills
  - E-mail writing skills
- Talks by industry experts

Advanced Courses

Financial Analytics

Program Duration: 5 weeks, 40 hours

Class Room Sessions: 20 hours

Lab Sessions: 20 hours

Location: Virtual classroom

Class Timing: Saturday, Sunday 2 hours each

Program Fee: Rs. 15000 (Indian residents)

Program Fee: $450 (Foreign nationals)

Retail Analytics

Program Duration: 5 weeks, 40 hours

Class Room Sessions: 20 hours

Lab Sessions: 20 hours

Location: Virtual classroom

Class Timing: Saturday, Sunday 2 hours each

Program Fee: Rs. 20000 (Indian residents)

Program Fee: $450 (Foreign nationals)

Analytics with R

Program Duration: 5 weeks, 40 hours

Class Room Sessions: 20 hours

Lab Sessions: 20 hours

Location: Virtual classroom

Class Timing: Saturday, Sunday 2 hours each

Program Fee: Rs. 15000 (Indian residents)

Program Fee: $450 (Foreign nationals)

Financial Services Analytics

Module: Financial Services Analytics using SAS and Excel

Class Room Sessions: 20 hours

Lab Sessions: 20 hours

Introduction to Banking and financial services

- Banks

- Credit Cards

- Insurance

- Loans

Players in Analytics in the BFSI space

Data structures and data availability

- Banks-Customer data, Transaction pattern, Products

- Credit Cards-Demographics, Credit Bureau

- data, Usage and transaction data on the users

- Insurance -Demographics, Exposure and Premiums payments for the users

Financial services in India

Analytic opportunities in Financial services

- Credit Risk Management-Behavioural patterns, payment schedule, credit policy, collections strategies and implementation

- Credit Scoring

- Cross-Selling

- Customer Acquisition -Response scorecards, Risk score development, generic scores available

- Customer Segmentation

- **Case study from the financial service industry**

Retail Analytics

Module: Retail Analytics using SAS and Excel

Class Room Sessions: 20 hours

Lab Sessions: 20 hours

Introduction to retail

- Broad definition of retail, organized and unorganized sectors
- Evolution of retail.
- Organization structure of a typical retail outlet
- Typical business model and key success factors.
- Different formats and typical KPIs and the P&Ls.
- World's biggest retailers (ex. Walmart, Tesco etc)

Retail in India

- History of retail in India

- Factors leading to India consistently listed as hottest retail destination
- What India consumes –share of wallet, regional diversity
- Where India consumes –Urban/ rural divide, metropolitans
- How India consumes –Consumer Behaviorand Preferences
- Key factors to succeed in retail in India
- Current practices and how organized retail will benefit India
- Challenges
- Major retailers
- Looking ahead in the next five years

Retail Analytics

- Scope of analytics in retail --sales, merchandise, inventory, promotion and supplier.
- Typical data structures in retail
- Analytical techniques with application using case studies
    - Customer segmentation

- Store segmentation
- Customer profitability analysis
- Vendor scorecard
- Category performance analysis
- Customer life time value
- Loyalty analytics
- Churn analysis
- Market basket analysis
- Trip mission analysis
- Promotion effectiveness analysis
- Cross-sell and up-sell

Emerging Trends

- Convergence in global retail
- Category management
- Customer centric retail –why customization is the new mantra
- Localization
- Multi-channel retailing
- Role of analytics in winning in the future

Analytics with R

Analytics with R

Program Duration: 5 weeks, 40 hours

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About R

- R is one of the most popular open source analytic software in the world. It is used by over 2 million analysts worldwide.
- Companies like Facebook, Google and MuSigma are all using the power of R to perform complex statistical and analytical techniques on large data sets.

Analytics with R

- This course is designed to provide a basic introduction to R, and its use in exploring and analyzing data. We will cover regression analysis in R using case studies.

Pre-requisites

- Participants need to have a good understanding of the data manipulation and data exploration methodology.
- They should also have an understanding of regression analysis.

Training Methodology

Jigsaw Academy's Online Education Platform

Virtual Classroom

Jigsaw Academy uses Educomp's virtual classroom platform, considered to be one of the best platforms for Live, Online Teaching.
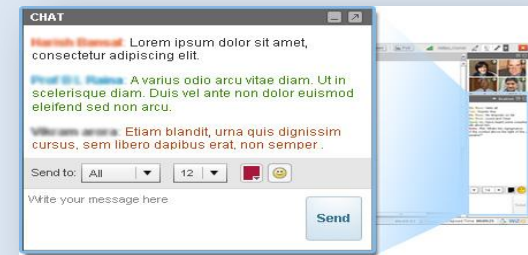
Features of the virtual Classroom

• Intuitive and easy to use interface

• Audio, video and text interaction

• No software downloads required

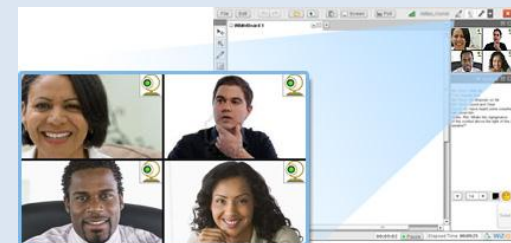• Records the class as it happens, including presenters' audio and video inputs

Control options

Text interaction

Video interaction

Benefits of Virtual Classroom

Incomparable convenience and flexibility - You can access a virtual classroom from home, office, internet café or any other place which has an internet connection.

Access from anywhere - You don't even need to waste time traveling to the training center. We bring it you right at your desk.

Access to global faculty - Virtual classrooms help us bring experienced faculty from all over the world to you.

Repeat the sessions multiple times - You don't need to fall behind or spend extra time catching up if you miss a class. All sessions in our virtual classrooms are recorded. You can watch and listen to the entire session at any time.

Jigsaw's Virtual Lab

The virtual lab allows students to gain **hands-on experience** on analytic tools as well as business case studies and evaluation exercises.

Students use a remote desktop connection to log in to our virtual lab. **Works as if the tools as well as the case studies are on your own machine.**

Access our virtual lab from any computer with an internet connection.

Do the lab sessions and evaluation exercises at a time of your convenience. **Complete flexibility in scheduling.**
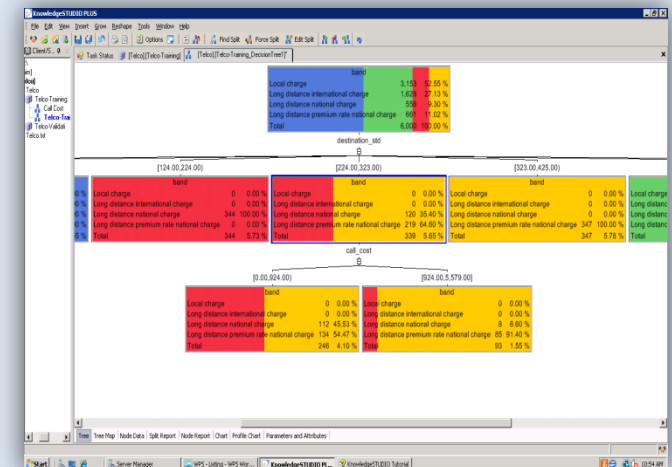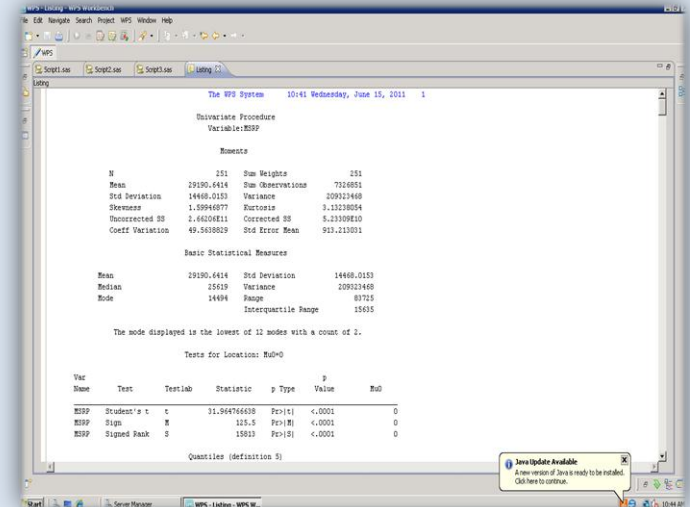
Faculty Profile

Gaurav Vohra

Gaurav has over a decade of experience in the field of analytics and has worked across multiple verticals including financial services, retail, FMCG, telecom, pharmaceuticals and leisure industries. Gaurav likes to work with different analytic tools including Knowledgestudio, SAS, SPSS, Statistica, KXEN, WPS and CART. He is an MBA from IIM Bangalore.

Sarita Digumarti

Sarita has over 10 years of extensive analytics and consulting experience across diverse domains including MFCG, retail and healthcare. She has worked in both India and the US, helping clients tackle complex business problems applying analytical techniques. She has a Master's degree in Quantitative Economics, from Tufts University, Boston, and a PG Diploma in Management from T.A. Pai Management Institute, Manipal.

Vijay Ramaswamy

Analytics professional with 10+ of analytics experience with areas of expertise in Clinical Trials Research, Strategic Pricing and Promotion, Assortment Planning, Marketing Effectiveness, Discrete Choice Modeling, Loyalty Analytics and Base and Advanced SAS training. He has a Post Graduate degree in Statistics from University of Mumbai and a Post Graduate degree in Business Management from XLRI, Jamshedpur.

Faculty Profile

Other faculty members

Analytics professional with 10+ of analytics experience with areas of expertise in Clinical Trials Research, Strategic Pricing and Promotion, Assortment Planning, Marketing Effectiveness, Discrete Choice Modeling, Loyalty Analytics and Base and Advanced SAS training. He has a Post Graduate degree in Statistics from University of Mumbai and a Post Graduate degree in Business Management from XLRI, Jamshedpur.

Senior industry expert with 10+ years of experience in analytical product research, development, and consulting. He specializes in FMCG, retail and healthcare domains. He holds a Ph.D. in applied economics and statistics from Clemson University and has 5 years of experience in teaching undergraduate and graduate statistics courses.

Analytic tool expert who has worked with some of the leading marketing and risk analytics companies across the globe. His interest lies in marketing science and consumer behavior research using software such as SAS, R, SPSS, CART, KnowledgeSeeker. He has several years of experience in delivering business analytics trainings for IT professionals as well as Statisticians.

Testimonials

A very very good course, excellent faculty and varied industry case studies. I recommend this course to anyone looking to improve their statistics knowledge and to use statistical techniques in their daily work life for making better business decisions. The faculty has excellent knowledge on the topics being covered and the assignments on live case studies force you to think beyond the class room. Overall an excellent course.

Jagadeesh Yaramada, student at XLRI Jamshedpur

The course provides good exposure to real life cases and situations where analytics has or can play a role. The support provided by the faculty is reliable and very time bound. The "virtual class room " technology is great so you don't miss not being in a class room. I would recommend this course to anyone who has some interest in Analytics. You will be on the right track if you start here.

Subhajyoti R., professor at XIMB

Testimonials

The whole course is built on the case study and hands on working experience on analytical tools. Needless to say both, Gaurav & Sarita are great individuals and domain experts, and to add to it they keep you connected. Both are very easily approachable; make all possible attempts to resolve the queries/issues. This course has given me totally new perspective, boosted confidence Highly recommended!!'

Pallavi Joshi, A.V.P. TATA Capital Ltd

I will recommend this course to everyone who are still searching for the right analytics course. Jigsaw helped me to understand the concepts very easily. Case studies based on the real data makes you more comfortable if you are new to analytics. Thanks to Sarita and Gaurav who had helped me at every stage during and after the course.

Dnyaneshwar Ambhore, Software Engineer at Symantec Corporation

The best part of the course is the highly experienced and approachable mentors who are there to clear your doubts, guide you in the right way to fulfill your aspiration to pursue a career in analytics. Thanks to Sarita and Gaurav who have guided me whenever needed.
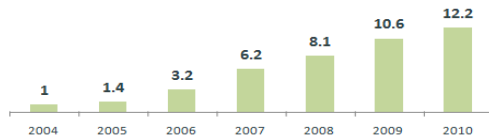
Prateek Agrawal, Analyst- Credit Policy at Citibank India

Catch the analytics boom!

Analytics is in demand

Popularity of the term 'analytics' on Google has increased by 12 times in the last 6 years

Year	Value
2004	1
2005	1.4
2006	3.2
2007	6.2
2008	8.1
2009	10.6
2010	12.2

"The scope is huge"
"It's a booming area but there is a lack of talent in the field"
"For every 100 required, we have only 20 available"
Times of India, *Dec 2010*

I.B.M. has spent over $12 billion in the last four years buying scores of analytics companies
New York Times, *Sep 2010*

"Companies are increasingly turning to analytics to gain a competitive edge.. Most critical, however, is the challenge posed by analytical talent, the people at all levels who help turn data into better decisions and better business results."
Accenture, Counting on Analytical Talent, *March 2010*

"Advanced analytics will be one of the top 10 strategic technologies in 2011."
Gartner, *Oct 2010*

"The fact is, the BPO sector has changed dramatically. Nasscom's most recent estimates show that the voice business of BPO is now down to just 43 per cent. In other words, those folks with headphones are no longer the norm. Most have regular day jobs, and often they are doing some very complex stuff."
Times of India, *Sep 2010*

The global analytics market is expected to reach $31 billion by 2011. An IBM study revealed that 83% of business leaders identified analytics as a top priority for their businesses.

Global giants like Microsoft, IBM, Dell, Citibank, HSBC, Google, Amazon have all established centers for analytics in the country.

Contact Us

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