BRIDGE
School of Management
linking education to industry

NORTHWESTERN UNIVERSITY
SCHOOL OF PROFESSIONAL STUDIES

Foundations of Data Analytics Program

Background

In today's technologically-driven society, masses of data are being generated every day. Businesses are storehouses of information about their customers, suppliers, products, subscribers and everyone else they have interaction with. What they do with that information, and how they mine it for trends, insights and predictors of future behavior, will increasingly be a key driver for a successful business.

Data Analytics is the science of making information, knowledge and wisdom out of raw data and due to innate complexities and global demand is emerging as the "sexiest" job of the century, according to the Harvard Business Review. The very existence of companies in the new economy is dependent on how good their analytics team is, at sifting through, making sense of and applying insights derived from the analysis of data.

According to McKinsey & Company, there could be a shortage of nearly 200,000 analysts who have the in-depth skills necessary to interpret data by 2018. A well-trained business analyst is going to be a much sought-after professional in the foreseeable future. The domain of analytics is thus going to be immensely lucrative for young men and women with the right training and attitude.

The Offering

Bridge has tied up with Northwestern University, whose analytics program is ranked among the top five in the world by Predictiveanalyticstoday.com and Datanami.com.

(http://www.predictiveanalyticstoday.com/online-business-analytics-programs/)

(http://www.datanami.com/2012/04/10/six_big_name_schools_with_big_data_programs/)

The Foundations of Data Analytics has been specially created for India by academicians from Northwestern University and top industry experts. In 2016, Bridge SoM ranked No. 4 in Analytics in the entire country and No. 2 in North India (Analytics India Magazine, 2016).

The program has been designed for both new graduates and working professionals alike. Professionals, who are willing to commit their time towards skill-enhancement and preparation for a career in Analytics, can participate in this program alongside their current jobs. Unlike the PBA program which covers advanced modeling methods used by a small niche of the industry, the Foundations in Data Analytics program does not include any of the models or tools that are highly mathematical and focuses on skilling students in the core areas of analytics.

Program Outcome

On successful completion of this program, the student will be able to deal with data, sift and sort it into usable formats, select and use the right analytical techniques and tools to derive insights from the data and apply predictive analytics to understand future trends.

Program Objectives

The Foundations in Data Analytics is a rigorous program but not a program that goes into the higher end of predictive modeling which are only used by a small subset of analytics firms. It aims to train students for a successful entry in the Analytics domain, and will involve a some degree academic rigor along with a lot of emphasis on practical application of theory and concepts.

The program will enable participants to -

1. Strategically navigate business data and understand patterns therein

2. Apply analytics techniques and tools to real-world business contexts for improved decision making

3. Acquire hands-on experience working with leading statistical tools and software packages (such as R) in predictive modeling

Eligibility

Students applying for this program have to be graduates in any discipline, with an aptitude for numbers and quantitative techniques.

Admission Process

Candidates will have a personal interview with a senior member of the academic team. This will be followed by a short self-assessment so that students can be sure they are comfortable with the program requirements.

Program Details

1. The total program duration is 22 weeks (5.5 months). This includes 20 weeks of study/participation and 2 weeks of scheduled breaks (a week's break after each module).

2. The mode of delivery of the program is Flipped classrooms (Blended format).
   - Flipped classes refers to the online + face-to-face model, where students have to study and prepare online before coming in for the weekend class.
   - Face-to-face classes are held on either Saturday or Sunday.
   - Assignments are part of weekly learning modules.

3. Weekend classes will be of 4 hours duration at the Bridge learning centres.

4. Online self-study requirement will be 10 hours every week.

5. All courses are compulsory. They have been designed keeping in mind the requirements from a Business Analyst.

Curriculum

Month 1: Foundation in Statistics

Appropriate use of statistical techniques and correct interpretation of statistical findings in business analytics are vital in order to help businesses make sense of data. This course will help students in developing basic understanding of statistics and drawing inferences based on data. Specifically, students are made familiar with numerical and visual summarization of data, introductory probability, common probability distributions, sampling distribution and basic concepts of statistical inference. Discussion questions are provided with the goal of facilitating logical thinking and taking a quantitative approach towards solving business problems.

This course will also prepare the pathway for students to delve into big data and predictive analytics in the next modules of the course.

Month 2 & 3: Introduction to Business Analytics

This course focuses on building the programming and analytics skills necessary to build analytics solutions to business problems. The course begins with a general introduction to the subject of business analytics: what it is, how does it add value in an organization and what are the characteristics of organizations which successfully use analytics to drive operations. Using that as a foundation for later thought and action, the course moves into the fundamentals of programming using the mathematical and analytics language R.

The course wraps up with application of the analytics skills to reading and understanding business cases and a review of how hypothesis testing can be applied in business situations to promote better operations and results.

Month 4 & 5: Modeling Methods

This course serves as an introduction to statistical analysis as used in predictive modelling to support business decision making. Students will learn basic techniques in the formulation, parameterization, and selection of the right model for the right business problem. This course covers different types of analytics and a variety of statistical topics, including multiple linear regression, logistic regression, correlations and goodness of fit. Through the use of practical examples with hands-on training, discussion of the major decisions focused on making sense of data, integration of fact-based predictions into everyday decision making, the student will be exposed to a comprehensive, managerial and practical approach to predictive modelling techniques.