Analytics Graduate Certificate

Program Duration: 3 Semesters

XAVIER LEADERSHIP CENTER

Overview:

The Analytics Graduate Certificate prepares participants to dig deep into data to discover the secrets hidden within, apply the right quantitative techniques to solve problems and clearly communicate and tell data stories to enhance business decision-making.

Description:

Xavier Leadership Center's Analytics Graduate Certificate is delivered over three semesters in partnership with Xavier University's William College of Business. The certificate includes:

Data Mining

Participants will receive an introduction to the basic theory, tools and techniques of data mining, including prediction, associations, clustering, and recommendation systems. Data Mining is delivered from two points of view: the technological view and the management view. Participants will use data mining tools when doing their team projects.

In the last decade, there has been an extraordinary quantity of data available to businesses. Transactional data from point-of-sale scanners are now routinely available; data from direct marketing and surveys is growing exponentially; and e-commerce and web-browsing data is everywhere. Many businesses have a strong interest in extracting value or knowledge from this data.

The vision of this course is to present and discuss data mining technologies and their application to data sets in an effort to support tactical and strategic business decisions. However, the over-riding focus will be learning when and how to use the technologies.

Course Objectives:

- Understand popular data mining techniques, how to apply them, and when they are

applicable
- Utilize a state-of-the-art commercial data mining package
- Apply popular data mining techniques to analyze and solve real-world problems
- Recognize and assess ethical data mining practices

Spreadsheet Applications for Decision Making

The goal of Spreadsheet Applications for Decision Making is to explore the role of spreadsheets as the standard business tool used to model and analyze quantitative problems. As such, class time will focus on the most commonly used Operations Research/Management Science (OR/MS) techniques and show how these tools are implemented using Microsoft Excel.

Course Objectives:

- Identify basic quantitative techniques which are useful in analyzing and solving business problems
- Understand the role and scope of management science as a tool in the decision making process
- Formulate decision problems as mathematical models
- Identify and apply the appropriate solution procedure for a given problem and interpret the model solution
- Describe advantages and limitations of each quantitative technique
- Use electronic spreadsheets to implement commonly used OR/MS techniques

Data Visualization & Communication

Data Visualization & Communication enables you to become proficient at communicating business relevant implications of data analyses through visualizations. By the end, you will know how to structure your data analysis projects as visualizations to ensure the fruits of your hard labor yield results for your stakeholders. Learn how to streamline your analyses and highlight their implications efficiently using visualization and make effective visualizations that harness the human brain's innate perceptual and cognitive tendencies to convey conclusions directly and clearly. Finally, you will design and persuasively present business "data stories" that use these visualizations, capitalizing on business-tested methods and design principles.

Course Objective:

- Craft the right questions to ensure your analysis projects succeed
- Leverage questions to design logical and structured analysis plans
- Create the most important graphs used in business analysis and transform data
- Design business dashboards
- Tell stories with data
- Design effective slide presentations to showcase your data story
- Deliver compelling business presentations

Audience:

Analysts and business super users managing, analyzing and telling data stories to solve problems and make better business decisions.

Outcome:

Participants will master the ability to:

★ Understand popular data mining techniques, when they are applicable, and how to apply them to solve problems.
★ Identify and apply quantitative techniques which are useful in analyzing and solving problems to facilitate the decision making process.
★ Design and present data stories using visualizations to effectively communicate business-relevant implications.

Eligibility Requirements:

- Hold a bachelor's degree from an accredited college/university.
- Submit an official transcript of the bachelor degree.
- Complete a Xavier University application.

Graduate Credits:

Participants satisfactorily completing the program will earn a graduate certificate and nine (9) graduate credits toward a Master in Business Administration or a Master of Science in Customer Analytics at Xavier University. To enroll in the MBA or Master of Science in Customer Analytics programs, there is an additional application and acceptance process.

Tuition Reimbursement:

As a graduate certificate resulting in graduate credits, grades and transcripts, tuition is eligible for many Employee Tuition Reimbursement Programs.

Analytics Team:

James Loveland, Ph.D., Assistant Professor, Marketing

Dr. Loveland is an Assistant Professor of Marketing in the Williams College of Business. His broad research interest is the intersection of psychology and business/marketing strategy. This has led to work showing how to improve B2B sales, and the effects of personality on the sales and marketing professions. He also works with large-scale online community data, investigating how brand communities can affect marketing outcomes. His work has been published in journals such as *Journal of Interactive Marketing, Industrial Marketing Management, Journal of Marketing Theory & Practice,* and *Marketing Intelligence & Planning* among others. He has a PhD in Psychology from the University of Tennessee, and a PhD in Marketing from the W.P. Carey School of Business at Arizona State University.

Brett Stowell, Adjunct Professor, Management Information Systems

Brett Stowell is a serial entrepreneur who launched his first successful venture at age 17 and retired by age 29. He pairs his entrepreneurial drive with quantitative, data-driven assessments to mold organizational and departmental strategy and streamline operations. His penchant for rapid prototyping and testing has resulted in receiving a founding interest in several business ventures ranging from retail stores to restaurants and real estate development. Public sector clients have included business development agencies, tourism commissions and public safety agencies. He holds a BSBA in Entrepreneurial Studies and a MBA with MBA Plus concentrations in Marketing and Business Intelligence from Xavier University. Brett has been a member of the adjunct faculty of Xavier University since 2012.

Thilini Ariyachandra, Ph.D., Associate Professor, Management Information Systems

Dr. Ariyachandra is an Associate Professor of Management Information Systems in the Williams College of Business. Her research is focused on business intelligence, Big Data, and business analytics implementation and success. She has published in journals such as the *Business Intelligence Journal, International Journal of Business Intelligence Research, Communications of the AIS, Communications of the ACM,* and *Decision Support Systems*. She collaborates extensively with industry to improve business intelligence curriculum and pedagogy including serving on advisory boards of academic alliances such as the Teradata University Network and Microsoft Dynamics Academic Alliance and organizing events such as the BI Congresses (congregations of academics, practitioners and students in the field). Her research work on the State of BI Education has been featured in Forbes Magazine, ComputerWorld, Information Week, and chosen for

the best of BI in the Business Intelligence Journal. She received her Ph.D. from the Terry School of Business, University of Georgia.

Joel Asay, Visiting Professor, Management Information Systems

Joel Asay is a visiting professor of information systems at Xavier University, econometrician for the American Dream Composite Index and doctoral student at Creighton University's Heider College of Business. He holds an MBA in business intelligence from Xavier University and a B.S in economics from Brigham Young University.

With his experience in data mining and predictive analytics, Asay uses digital information sources to predict trends in business and the global economy. His work has been featured on CNBC, Fox News and used by partner organizations to improve decision making strategies. Joel teaches courses in database management, data mining, health informatics and MIS project management.

Gregory Smith, Ph.D., Chair and Associate Professor, Management Information Systems - Management Information Systems

Greg Smith is Associate Professor and Chair of the Management Information Systems Department in the Williams College of Business. Dr. Smith focuses his teaching and research in the area of business intelligence with a specific concentration in the application of artificial intelligence in predictive analytics. He is the co-creator and Managing Director of Xavier University's American Dream Composite Index™. He is a former analyst and benefits consultant with the Segal Company, Milliman USA and TowersWatson. He holds an M.A. in Actuarial Science from Ball State University and a Ph.D. in Business Information Technology from the Virginia Polytechnic Institute and State University.