BUSINESS ANALYTICS (BALT)

BALT 1140 Excel with Business Applications. (Formerly 2240) The participants in this course will not merely be able to calculate the bottom line, they will engage in the art of business analytics. Mastering the basics will open the door for serious financial calculations using real data modeling. Having derived the numbers, extensive use of Excel's graphic functions will be deployed to tell the business story. Since not all things can be calculated, use of Excel's statistical functions will be exercised to determine probabilities. To embolden the brave, we will delve into the extensive capabilities of macros that provide complete access to the whole of the Microsoft Office suite. Prerequisite: MATH 1105 or MATH 1110. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall and Spring Terms)
MESA (Typically Offered: Periodically)

BALT 1150 Business Statistics I. (Formerly MGT 1150) Basic course in statistical technique; includes measures of central tendency, variability, probability theory, sampling, estimation, and hypothesis testing. Prerequisite: MATH 1105 or MATH 1110. Credit will not be given for both MATH 1150 and BALT 1150. IAI BUS901. 3 semester credit hour/s.
Designation: Computational, Mathematical, and Analytical (QCM)
Campus: LISLE (Typically Offered: Fall and Spring Terms)
MESA

BALT 2251 Business Statistics II. (Formerly MGT 2251) Covers: Regression and correlation, analysis of variance, and nonparametric statistics. Prerequisite: MGT 2251 or BALT 1150. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall and Spring Terms)
MESA

BALT 2297 Internship. (Formerly 297) 2-6 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 12. Department Consent Required.
Designation: Engaged Learning
Campus: LISLE (Typically Offered: Annually)

BALT 3300 Programming for Analytics. (Formerly 300) This course will provide an introduction to programming languages used for analytics. Students will be exposed to the techniques required to take programming certification exams in the software presented. Prerequisite: Must earn a grade of "C" or better in MGT or BALT 1150. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)

BALT 3301 Managerial Decision Making Under Uncertainty. (Formerly 301) This course introduces students to the art and science of decision making under constraints such as limited data, uncertainty, and competing objectives. The course provides students with hands on experience using problem solving techniques. Students will be introduced to simulation modeling, optimization techniques, and decision trees. Prerequisite: MGT or BALT 1150. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)
MESA (Typically Offered: Spring Term)

BALT 3310 Visualization Techniques and Dashboarding. There is a proliferation of data within organizations that can be used to reduce expenses and increase profits i.e. gain a competitive edge. Attempting to gain insight into the numbers through text is ineffective. Visualization techniques provide an opportunity to spot trends and patterns. This course focuses on using visualization techniques to develop business insights and dashboards to effectively convey those insights to a non-technical audience. Prerequisite: Must earn grade of "C" or better in MGT or BALT 1150. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)

BALT 3325 Lean Six Sigma for Operational Excellence. (Formerly 325) Lean Six Sigma is a methodology that focuses on process efficiency and effectiveness which directly translates into increased customer satisfaction and improved return on Investment (ROI). This course focuses on the linkage between strategy and achieving operational efficiency using real-world projects and business cases. Prerequisite: Earned a grade of "C" or better in MGT or BALT 1150. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)
MESA (Typically Offered: Fall Term)

BALT 3330 Database Structures & Queries. (Formerly 330) In this course students will be introduced to the basic concepts of databases. The course stresses the storage, retrieval and manipulation of data using SQL. Computer software techniques used in business with emphasis on information management and database management systems (data management and analysis; database management systems, and query languages). The course also includes an overview of a data warehouse structure, developing skills in Microsoft Access and data retrieval for analysis. Prerequisite: Earned a grade of "C" in BALT 1140. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)

BALT 3350 Business Process Management. (Formerly 350) This course introduces the latest advances in business process technologies and management such as business process planning, business process requirements analysis, business process modeling, workflow system design and implementation. The course will emphasize a hands-on approach. Prerequisite: Earned a grade of "C" in BALT 1140. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Spring Term)
MESA (Typically Offered: Spring Term)

BALT 3360 Social Network Analysis. Social computing is a term used to describe the intersection of human social behavior and technology systems. This course will introduce students to the concepts of social networks from the viewpoint of economists, sociologists, psychologists and technologists. The focus of the course will be on viewing social groups as networks and decision making as a form of game theory. Real world applications such as online auctions and prediction markets will be explored. Prerequisite: Earned a grade of "C" in BALT 3301 or MGT/BALT 2251. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Periodically)

BALT 3370 Introduction to GIS for Business Analysis. (Formerly 370) Introduction to GIS for Business Analysis. GIS is an advanced data visualization technique which organizes spatial data into layers for analysis and viewing as maps and 3d scenes. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Periodically)

BALT 4320 Data and Text Mining. (Formerly 320) Knowledge discovery and business analytics are core tools used by organizations to direct business decisions, improve strategies, reduce risk and create new business opportunities. This course focuses on algorithm techniques that can be used for knowledge discovery such as classification, association rule mining, clustering, and heuristics. Successful applications of this methodology have been reported in areas such as credit rating, fraud detection, database marketing, customer relationship management, and stock market investments. This course will cover data mining for business intelligence and will cover applications to both data and text. The focus is on several techniques that aim at discovering patterns that can bring value or "business intelligence" to organizations. Examples of such patterns include fraud detection, consumer behavior, and credit approval. The course will cover the most important data mining techniques including: classification, clustering, association rule mining, prediction --- through a hands-on approach using specialty software. Prerequisite: Earned a grade of "C" in BALT 2251. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Spring Term)

BALT 4330 Predictive Analytics I. (Formerly FINA 3335/330) Aquaints students with statistical forecasting methodologies, while placing special emphasis on the underlying assumptions. The emphasis is on time-series methods used for forecasting and includes techniques such as decomposition, smoothing, regression, and ARIMA modeling. Pre-Requisite: MGT/BALT 2251 or BALT 3301. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)

BALT 4350 Web Intelligence and Analytics. (Formerly 340) This course will focus on developing an understanding of web analytics and web intelligence. Students will learn how to: leverage Web site effectiveness and marketing; measure, identify, and interpret key Web metrics and KPIs. Additionally, students will gain an understanding of main data collection techniques, their impact on metrics, and their limitations. Insight into the potential of data mining and predictive analytics in the context of the Web will be explored as well as web spiders, web bots and social listening software. Prerequisite: BALT 3330. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Periodically)

BALT 4361 Fun with AI: Hands-On Intro to Artificial Intelligence and Text Prompting. This course can help anyone enjoy exploring AI, and learn to think critically about it. Activities include exploring the latest generative AI tools that allow you to create video and music with text prompts. No prior experience required. Free texts include: Surfing the Tsunami, which includes a general intro to AI as well as introducing related societal impact and ethical questions; Carla and Her Data, a book co-authored with Richard Whitt, a Georgetown legal scholar, focused on ethical implications of AI and Discovering Data: a book to introduce AI with hands-on activities and learning about how AI is used in business. Appropriate for business students learning about AI, CS students (who have a documented need exposure to business), and any other discipline. Certification: an AI ethics certification from Glia.net will be included, which helps students to engage with how fiduciary principles can be used in handling sensitive data. Credit will not be given for both BALT 4361 and BALT 4391, Fun with AI. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)
MESA (Typically Offered: Fall Term)

BALT 4362 Make Your Own Bots: Automating Tasks with ChatGPT, RPA and Prompt Engineering. Hands-on introduction to how you can make bots, with emerging platforms that require no coding experience; general hands-on introduction to how automation is impacting business, including ethical implications. A closer look is taken at prompt engineering, which is very doable and is a top emerging skill. No prior experience required. Students are introduced to several data certifications, which can help individuals to be more competitive in the job market. Credit will not be given for both BALT4362 and BALT4391, Make your own Bots. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)
MESA (Typically Offered: Fall Term)

BALT 4363 Data Superpowers: Learning Python and AI Math In Context, with ChatGPT and Prompt Engineering. Hands on introduction to Python coding and math related to AI, with a focus on math actually used in the workplace, and ways to use Python Libraries and ChatGPT instead of having to fully memorize the math. Math and coding expertise is a primary barrier for entry into most masters programs in AI and this course is meant to help students see coding and math as tools, build confidence with assistants like ChatGPT and Python Libraries, and discuss how learning more math can help you in some situations with optimization. Includes introduction to python certification, which can help learners to become more competitive in the job market. Discussion of how Python can give you more advanced capability to "train" AI through prompt engineering. Credit will not be given for both BALT4363 and BALT4391, Data Superpowers. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)
MESA (Typically Offered: Fall Term)

BALT 4364 Learning Conventional AI and Generative AI with Google Collab and ChatGPT. This is meant to give students exposure to important tools such as Google Collab, which can simplify and expedite learning AI, and integrates ChatGPT as a tutor. "Conventional AI" is the primary field of machine learning and deep learning that has been increasingly used in business, and students are introduced to assistive platforms that make it easier to use, but are also invited to try using AI directly, through Python, with help from ChatGPT (like having a tech assistant and tutor). Generative AI is the newer form of AI that is taking the world by storm, which led to ChatGPT and other tools, based on LLMs, or large language models. General hands-on introduction also includes exploration of http://fast.ai, which students are invited to start exploring and to full explore after this course. It is recommended that students either take the Data Superpowers course, or to work through both free Python books at http://www.learnskills.tech. Credit will not be given for both BALT4364 and BALT 4391, Learning Conventional AI and Generative AI. 3 semester credit hour/s.
Campus: LISLE (Typically Offered: Fall Term)
MESA (Typically Offered: Fall Term)

BALT 4395 Independent Study in Business Analytics. This course allows an opportunity for a student to concentrate on a specific topic related to an existing course or to explore a timely topic not covered in an existing course. A proposal is required, outlining the nature of the problem and scope of the investigation. A research paper or project is required, as appropriate to the problem under investigation. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 12. Department Consent Required.
Campus: LISLE (Typically Offered: Fall and Spring Terms)

BALT 4396 Special Topics in Business Analytics. Timely business analytics topics are presented in the form of 1, 2, or 3-semester credit hour courses. Keeping pace with advances in analytics requires constant learning. These courses provide an opportunity to examine and assess issues in analytics. There are no designated prerequisites, but students are encouraged to have completed several business analytics courses. Topics are announced in advance. Department Consent Required. 1-3 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 12. Department Consent Required.
Campus: LISLE (Typically Offered: Fall and Spring Terms)

BALT 4397 Institute Project. (Formerly 397) Real-world project in business analytics under the supervision of a faculty mentor. 2-6 semester credit hour/s. Course Repeatable. Maximum number of units allowed: 12. Department Consent Required.
Designation: Engaged Learning
Campus: LISLE