LORAS COLLEGE
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BUSINESS ANALYTICS (2021-2022)

Francis J. Noonan School of Business

James Padilla, J.D., Dean

Please Note: Students must get PRIOR written permission to transfer in credit once they have matriculated at Loras. Students wishing to take a summer school class on another campus must get written permission from the Dean of the School of Business or their designee BEFORE taking the class. If a student has taken courses on other campuses and then transfers to Loras the Dean of the School of Business or their designee may make a determination of those transfer credits.

Since students who are double majoring within the School of Business will not be taking L.BUS-490 more than once, they need to complete an additional upper level course in either major to replace the second seminar course when applicable.

Student Learning Outcomes – Business Analytics	
1.	Apply statistical concepts to data analysis and modeling
2.	Apply business analytics techniques using programming languages and software
3.	Import, clean, and transform data in different platforms
4.	Create and apply visualization for better understanding of data
5.	Utilize the outcomes of analytics for better business decision making
6.	Effectively communicate the findings of analysis in written and oral form
7.	Create predictive models using machine learning algorithms
8.	Apply ethical reasoning to business analytics issues

Requirements for the major in Business Analytics (B.A.):

Students must earn a cumulative average of 2.000 or better in all coursework toward their major.

Req	Course	Cr's
1	L.COM-110: Oral Communication as Critical Inquiry	3
2	L.MAT-150: Calculus of One Variable I-FM	4
3	L.ACC-227: Managerial Accounting	3
4	L.BUS-230: Principles of Management	3
5	L.BUS-240: Principles of Marketing	3
6	L.BUS-350: Managerial Finance	3
7	L.CIT-221: Data Analysis	3
8	L.BAN-310: Data Visualization	3
9	L.BAN-340: Innovation	3
10	L.BUS-490: Business Seminar-IN	3
Select one from Req. 11		

11	L.CSC-115: Introduction to Programming	4
11	L.EGR-116: Intro to Programming with Robotics-ES	4
Select one from Req. 12		
12	L.BAN-210: Essentials of Analytics	3
12	L.DAT-100: Overview of Data Science-QR	3
Select one from Req. 13		
13	L.BUS-250: Business Statistics	3
13	L.MAT-115: Statistics-FM, QR	4
13	L.MAT-220: Probability and Statistics-QR	3
Select one from Req. 14		
14	L.DAT-200: Tools & Methods for Analytics	3
14	L.BAN-330: Introduction to Data Science	3
Select one from Req. 15		
15	L.BAN-320: Predictive Modeling	3
15	L.CSC-340: Machine Learning (pre-requisite of L.CSC-225)	3
Select one from Req. 16		
16	L.CIT-318: Database Management	3
16	L.BAN-460: Big Data Analytics (pre-requisite of L.CSC-225)	3
Select one from Req. 17		
17	L.BAN-300: Applied Analytics	3
17	L.BAN-450: Marketing Analytics	3
53-54 total required credits		

Requirements for the minor in Analytics:

Req	Course	Cr's
1	L.BAN-210: Essentials of Analytics	3
Select one from Req 2 (courses listed or equivalent course with prior approval)		
2	L.BUS-250: Business Statistics	3
2	L.MAT-115: Statistics-FM, QR	4
2	L.MAT-220: Probability and Statistics-QR	3
2	L.PSY-211: Research Methods and Statistics	3
2	L.SOC-333: Statistical Analysis	3
3	L.BAN-310: Data Visualization	3
4	L.CIT-221: Data Analysis	3
5	L.BAN-300: Applied Analytics	3
Select one from Req 6		
6	L.BAN-320: Predictive Modeling	3
6	L.DAT-200: Tools & Methods for Analytics	3
6	L.BAN-330: Intro to Data Science	3
6	L.BAN-340: Innovation	3
6	L.BAN-450: Marketing Analytics	3

6	L.CSC-340: Machine Learning	3
6	L.BAN-460: Big Data Analytics	3
18-19 total required credits		

2021-2022 BUSINESS ANALYTICS COURSES:

L.BAN-210: Essentials of Analytics

This course provides an introduction to the field of Business Analytics, with a foundational basis in Business Statistics. Specific analytic topics covered include Data Mining, Data Warehousing, Data Visualization and Analytics Software. 3 credits.

L.BAN-300: Applied Analytics

This course provides an opportunity for students to conduct analyses of real data, following all stages from data acquisition and preparation through analysis and presentation. While good data analysis requires many skills, the vast majority of an analyst's time is spent on preparing, cleaning, and understanding what the data actually means – how was data collected, how is data measured, and what does each variable really mean? There are no prerequisites and students are expected to have a range of abilities from novices to some with statistics backgrounds. Work will be done in groups with tasks appropriate for each student's skill level. Projects will vary in subject areas, and may include survey data, use of public databases (e.g., Census data or sports data), or data sets collected by individual entities (such as particular business entities). Prerequisite: A statistics course. 3 credits.

L.BAN-310: Data Visualization

This course provides an introduction to the field of data and information visualization, a key sub-field in the area of data analysis and mining. Specific analytic topics covered include tables & charting, multi-dimensionality of data, handling unstructured data, and advanced visualization tools and techniques. Prerequisite: L.CIT-110 or L.CIT-221. 3 credits.

L.BAN-320: Predictive Modeling

The rapid expansion of data availability has made possible considerable advances in modeling for the purpose of prediction. Virtually all decisions, at least in part, depend on predictions of what will happen if something changes (either under our control or not). This course explores applications of a variety of current predictive modeling techniques to data. Included are multiple regression modeling, logistic regression, decision trees, random forests, neural networks, and simulation analysis. The emphasis will be on applied analysis, utilizing data from a wide variety of areas, including business, politics, socioeconomic conditions, health, sports and entertainment, etc. Students will build and compare predictive models, learn how to evaluate these models, and how to apply model results to improve decision making. Prerequisite: L.BAN-330 or L.DAT-200. 3 credits.

L.BAN-330: Introduction to Data Science

Data science is the process of collecting, cleaning, analyzing, summarizing and presenting data in a scalable and generalizable manner. In this course, students will learn each of these steps using R, an open-source analytics language, culminating in a project. Prerequisites: L.CSC-115, L.MAT-220. 3 credits.

L.BAN-340: Innovation

Gaining a competitive advantage in today's business environment increasingly demands that organizations know how to innovate. Creativity, continuous improvement, and the ability to turn ideas into action are critical to standing out above the rest. Specific topics will include: the innovation process, disruptive technologies, why plans are bad, and when NOT to listen to your customers. We will also apply our knowledge via an innovation simulation. Prerequisites: L.ACC 227, L.BUS 230, L.BUS 240. 3 credits.

L.BAN-450: Marketing Analytics

This course explores the topic of Marketing analytics which has grown significantly in recent years in response to the rapidly increasing supply of data generated by marketing campaigns, online sales, websites, social media, customer relationship management programs and integrated marketing communication campaigns. Through enhanced technology, more data are available than ever before. But marketers are faced with the dilemma of how to convert the massive amount of available data into usable information. In this course students will engage in the systematic study of these data which are employed, through the use of statistical analysis and technology, to improve decision making. Prerequisites: L.BAN 210, L.BUS 240. 3 credits.

L.BAN-460: Big Data Analytics

This course introduces students to concepts behind the storage and analysis of the large and varied datasets that have become common in today's business environment. This includes the use of distributed computing to store and analyze these datasets in an efficient manner. Students will be introduced to a variety of tools used to analyze large datasets and learn how to use these tools in appropriate contexts. Prerequisite: L.CSC-225. 3 credits.

L.DAT-100: Overview of Data Science –QR

Data Science is a developing field that combines computer science, statistics, and domain-specific knowledge. This course will introduce students to the field of Data Science via case studies and projects from various domains, including business, digital humanities, social sciences, and sports. Projects will include data visualization, summary, and prediction. Prerequisites: L.MAT-091 or placement into L.MAT-114+. Spring semester. 3 credits.

L.DAT-200: Tools & Methods for Analytics

Analytics is the study of various models, methods and tools that can be applied to gain insights from data. It involves collecting, cleaning, analyzing, summarizing and presenting data in a scalable and generalizable manner. In this course, students will learn to implement each of these steps using appropriate programming environments. 3 credits.