Course Description

Year-1 Semester 1

Foundations for Business Analytics (MBA601):
This foundational course is designed to introduce students to the essential concepts, techniques, and tools necessary for data analysis in a business context. The course covers topics such as data collection methods, data visualization, descriptive and inferential statistics, predictive analytics, and data-driven decision-making processes. Through lectures, case studies, and hands-on exercises, students will gain practical skills in extracting insights from data sets and effectively communicating findings to stakeholders. This course provides a solid foundation for further study and application of business analytics principles in various industries.

Visualization for Business (MBA602):
This course is designed to equip students with the essential skills for effective data visualization in a business context. Covering a range of visualization techniques, tools, and best practices, students will learn how to transform complex datasets into meaningful insights. The course covers principles of visual perception, data storytelling, dashboard design, and the use of the latest visualization tools. Through hands-on exercises and real-world case studies, students will develop the ability to communicate complex business data in a clear and compelling manner and will be proficient in creating impactful data visualizations that drive informed decision-making in a business setting.

Data Mining for Business (MBA603):
This course is designed to provide students with advanced knowledge and practical skills in the dynamic field of data mining for business. Students will explore fundamental concepts such as data preprocessing, pattern discovery, clustering, classification, and association rule mining. The course emphasizes the application of various data mining algorithms and techniques to solve real-world business problems. Students will gain hands-on experience using industry-standard tools and platforms for data analysis and will be skilled at extracting valuable insights from data through advanced data mining and analysis techniques.

Artificial Intelligence for Business (MBA604):
This course is designed to engage students in the transformative field of Artificial Intelligence (AI) within the context of business applications. Students will explore the core principles of AI, machine learning, and deep learning, with a focus on practical implementation in business scenarios. The course covers topics such as natural language processing, computer vision, predictive analytics, and reinforcement learning. Through hands-on projects and case studies, students will gain proficiency in leveraging AI technologies to enhance decision-making, automated processes, and unlock strategic advantages in a business setting, they will be well-equipped to harness the power of AI for strategic business innovation and problem-solving.

Year-1 Semester 2

Research Methods (MBA605):
This course is designed to prepare students for advanced scientific research by examining how to plan, conduct, and report on research in the Business Analytics (field. Topics include formulating research problems, Research Design, Qualitative and Quantitative Research, Measurement, Data Analysis, Interpretation of Data, code of ethics and plagiarism, writing scientific proposal, writing research papers, and presenting a project/paper to audience. Students will also examine examples drawn from different research areas as case studies on various aspects of the principal methods.

Machine Learning (MBA606):
This course provides students with a detailed knowledge on Machine Learning (ML) concepts in supervised and unsupervised learning, various ML techniques Regression and Statistical Models, Classification, Clustering, Decision Trees, Neural Networks, Bayesian Networks, Convolutional neural networks and Deep Learning, Support vector machine, Reinforcement Learning, Evolutionary computing in ML, Particle Swarm Intelligence techniques and latest research in ML. The course introduces ML which is a method to discover and predict some unobserved components concerned with the data construction and its relationships.

Big Data Analytics and Application (MABA607):
This course covers advanced big data analytics methodologies and technologies. The course emphasizes systems and algorithms for large-scale advanced data processing and introduces the characteristics and challenges of Big Data and advanced computing paradigms and platforms. The course covers topics such as, the data analytics lifecycle, fundamental and sophisticated analytics approaches, and developing big data technology, big data programming tools (e.g., Hadoop and MongoDB), big data extraction and integration, big data storage, scalable indexing for big data, big graph processing, big data stream techniques and algorithms, big probabilistic data management, big data privacy, big data visualizations, and big data applications (e.g., spatial, finance, multimedia, medical, health, and social data).

Decision Analytics (MBA608):
This dynamic course offers students an immersive journey into the realm of Decision Analytics. Emphasizing practical skills, students will delve into advanced concepts in decision-making frameworks, data-driven strategies, and analytical techniques. Key topics encompass various data sources, sophisticated data modeling, predictive analytics, optimization methods, and scenario analysis. The course underscores real-world applications in business environments, equipping students with the expertise to make strategic decisions, harness data for competitive advantage, and effectively present actionable insights to stakeholders.

Year-2 Semester 1

Option 1:

Consultancy Practice (MBA609):
This dynamic course immerses students in the practical world of Consultancy Practice, equipping them with essential skills and knowledge to excel in consultancy roles. With a focus on real-world applications, the course covers key topics including consultancy frameworks, strategic planning, client relationship management, problem-solving methodologies, and effective communication techniques. Students will learn to conduct comprehensive needs assessments, develop actionable recommendations, and deliver impactful presentations to stakeholders. Emphasis is placed on ethical practices, professional standards, and the importance of adaptability in various business environments. By the end of the course, students will be prepared to provide valuable consultancy services and drive positive change in organizations.

Special Topics in Business Analytics (MBA610):
This course provides students with critical knowledge and understanding of the concepts and practice of trending topics and the latest research or technology in the field of Business Analytics (BA). It addresses a variety of theoretical and technological issues related to BA and provides an opportunity for students to undertake a term-long BA or research project. The topics might be different from one another and shall be subject to approval from the MIS department to select the course content whenever offering the course.

Applied Project (MBA611):
This course is designed to prepare the student to plan and implement a supervised master's applied project in Business Analytics fields. It is prepared according to the steps of specialized scientific research. The student is expected to use higher-level skills to conduct critical evaluation of information to investigate a real business problem and implement a creative solution to it. By adopting an organized methodology, reviewing literature, and analyzing relevant data, students are expected to reach research conclusions and appropriate recommendations that might contribute to applied business project development at the professional and societal levels. The applied project, in its final version, is subject to the public defense and its evaluation is based on the written and oral presentation, which are prepared according to the Master Dissertation Guidelines at the Applied Sciences University.

Option 2:

Special Topics in Business Analytics (MBA610):
This course provides students with critical knowledge and understanding of the concepts and practice of trending topics and the latest research or technology in the field of Business Analytics (BA). It addresses a variety of theoretical and technological issues related to BA and provides an opportunity for students to undertake a term-long BA or research project. The topics might be different from one another and shall be subject to approval from the MIS department to select the course content whenever offering the course.

Thesis (MBA612):
This course is designed to prepare the student to plan and implement a supervised master's thesis in Business Analytics fields. It is prepared according to the steps of specialized scientific research. The student is expected to use higher-level skills to conduct critical evaluation of information to investigate a real business problem and implement a creative solution to it. By adopting an organized methodology, reviewing literature, and analyzing relevant data, students are expected to reach research conclusions and appropriate recommendations that might contribute to applied business project development at the professional and societal levels. The thesis, in its final version, is subject to the public defense and its evaluation is based on the written and oral presentation, which are prepared according to the Master Dissertation Guidelines at the Applied Sciences University.