Princess Sumaya University for Technology
جامعة الأميرة سميّة للتكنولوجيا

PROGRAM PROFILE

M.S.c Business Analytics Program

2024 / 2025

King Talal School of Business Technology
كلية الملك طلال لتكنولوجيا الأعمال

Master of Business Analytics

The Master of Business Analytics program is designed to create data-driven leaders who can transform complex information into strategic business solutions. As organizations increasingly rely on data to guide decision-making, this program equips students with innovative analytical skills combined with essential business expertise.
The program equips students with advanced analytical skills, combining statistical modeling, machine learning techniques, and business intelligence tools with strategic decision-making frameworks. Through a carefully structured curriculum, students gain hands-on experience with industry-standard technologies like Python, R, SQL, and Tableau while developing the ability to transform complex datasets into actionable business insights. The program emphasizes real-world applications through case studies, capstone projects, and potential industry collaborations, preparing graduates for leadership roles in today's data-driven business environment.

AACSB ACCREDITED

IOA Institute of Analytics
Recognized Programme

PROGRAM AIMS

The program aims to prepare graduates with the analytical and technological capabilities needed to address complex business challenges, deliver data-driven solutions, and support strategic decision-making using advanced digital tools and methodologies.

PROGRAM OBJECTIVES

- Develop proficiency in data collection, processing, and analysis for business decision-making.
- Apply modern technologies such as AI, machine learning, and data mining to solve real-world business problems.
- Deliver timely, relevant insights that support strategic and operational decisions.
- Integrate business knowledge with technical expertise to enhance institutional performance.
- Foster innovation and align learning with the evolving needs of the digital business landscape.

For More Info
www.PSUT.edu.jo/KTSBT/BAnalytics

PROGRAM FEATURES

- **Industry-Driven Curriculum:** Covers predictive analytics, data mining, machine learning, and AI applications in business with focus on real-world case studies and business scenarios
- **Dual Tracks:**
  - Thesis Track: Focused on original research and a 9-credit thesis.
  - Comprehensive Exam Track: Includes a capstone project and elective courses for industry readiness.
- **Hands-On Learning Approach**: Applied projects with real organizational data sets and Capstone project solving actual business challenges with access to PSUT's advanced analytics labs and computing facilities
- **Expert Faculty & Industry Connections:** Taught by academics with research expertise and industry practitioners, in addition to a strong network of corporate partners for internships and projects
- **Comprehensive Skill Development:** Technical data analysis capabilities, business strategy and decision-making frameworks, data visualization and storytelling techniques, and ethical considerations in data analytics

PROGRAM LEARNING OUTCOMES

	Program Learning Outcomes (LOs)
PLO1	Explain the role of management information systems in ensuring the availability and quality of organizational data
PLO2	Evaluate business analytical approaches to find the best match for a given business problem
PLO3	Interpret the results of analytical techniques in the business context to support the decision-making process
PLO4	Analyze business problems to create viable models that support the decision-making process.
PLO5	Analyze ethical issues in the business world related to data security, integrity, and privacy
PLO6	Articulate analytical conclusions and interpretations in an oral format.
PLO7	Communicate analytical findings effectively through written and visual documents

Curriculum - Thesis track

Master's Degree in Business Analytics

2024/2025

Course Title	Credit Hours	Prerequisite
Program Requirements (33 CHS)		
1. Compulsory Requirements (18 CHs)		
Rresearch Methodology	3	
Foundations of Business Analytics	3	
Business Data Engineering	3	
Advanced Statistical Analysis	3	
Data Mining for Business Applications	3	
Business Analytics Applications	3	
Digital Business Innovation	3	

2. Elective Requirements (6 CHs)		
Supply Chain Management Analytics	3	
Financial Reporting, Forecasting and Analysis	3	
Digital and Social Media Analytics	3	
Advanced Data Analytics Using Programming	3	
Business Analytics Applications	3	
Process Mining	3	
Big Data Analytics	3	
Advanced Topics in Business Analytics	3	
People Analytics	3	
Health Analytics	3	
Thesis Requirements (9 CHs)		
Thesis	9	-

Curriculum - Comprehensive Exam Track

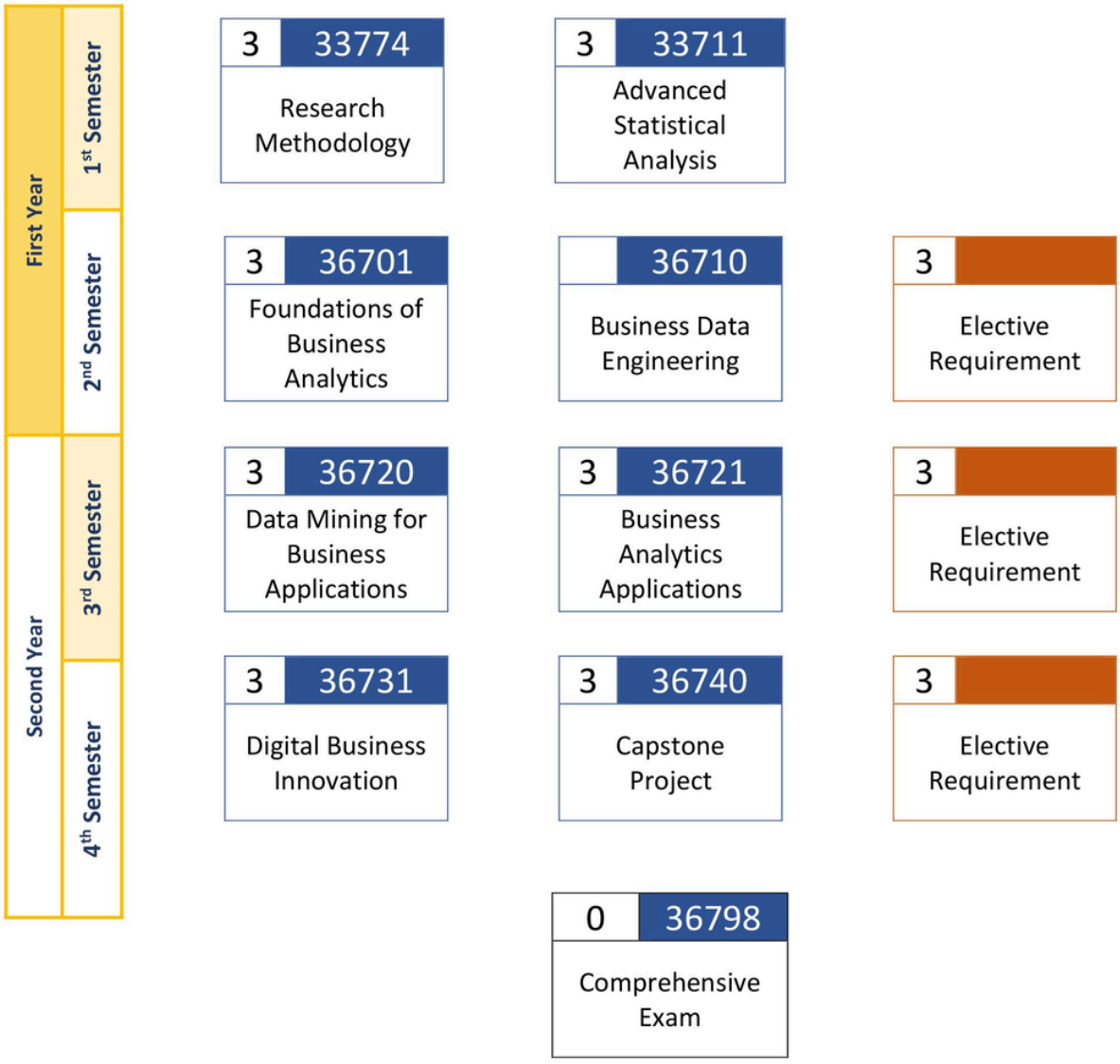
Master's Degree in Business Analytics

2024/2025

Course Title	Credit Hours	Prerequisite
Program Requirements (33 CHS)		
1. Compulsory Requirements (24 CHs)		
Rresearch Methodology	3	
Foundations of Business Analytics	3	
Business Data Engineering	3	
Advanced Statistical Analysis	3	
Data Mining for Business Applications	3	
Business Analytics Applications	3	
Digital Business Innovation	3	
Capstone Project	3	
Comprehensive Exam	3	

2. Elective Requirements (9 CHs)		
Supply Chain Management Analytics	3	
Financial Reporting, Forecasting, and Analysis	3	
Digital and Social Media Analytics	3	
Advanced Data Analytics Using Programming	3	
Process Mining	3	
Big Data Analytics	3	
Advanced Topics in Business Analytics	3	
People Analytics	3	
Health Analytics	3	

Guidance Plan - Comprehensive Exam Track
Master's Degree in Business Analytics
2024/2025



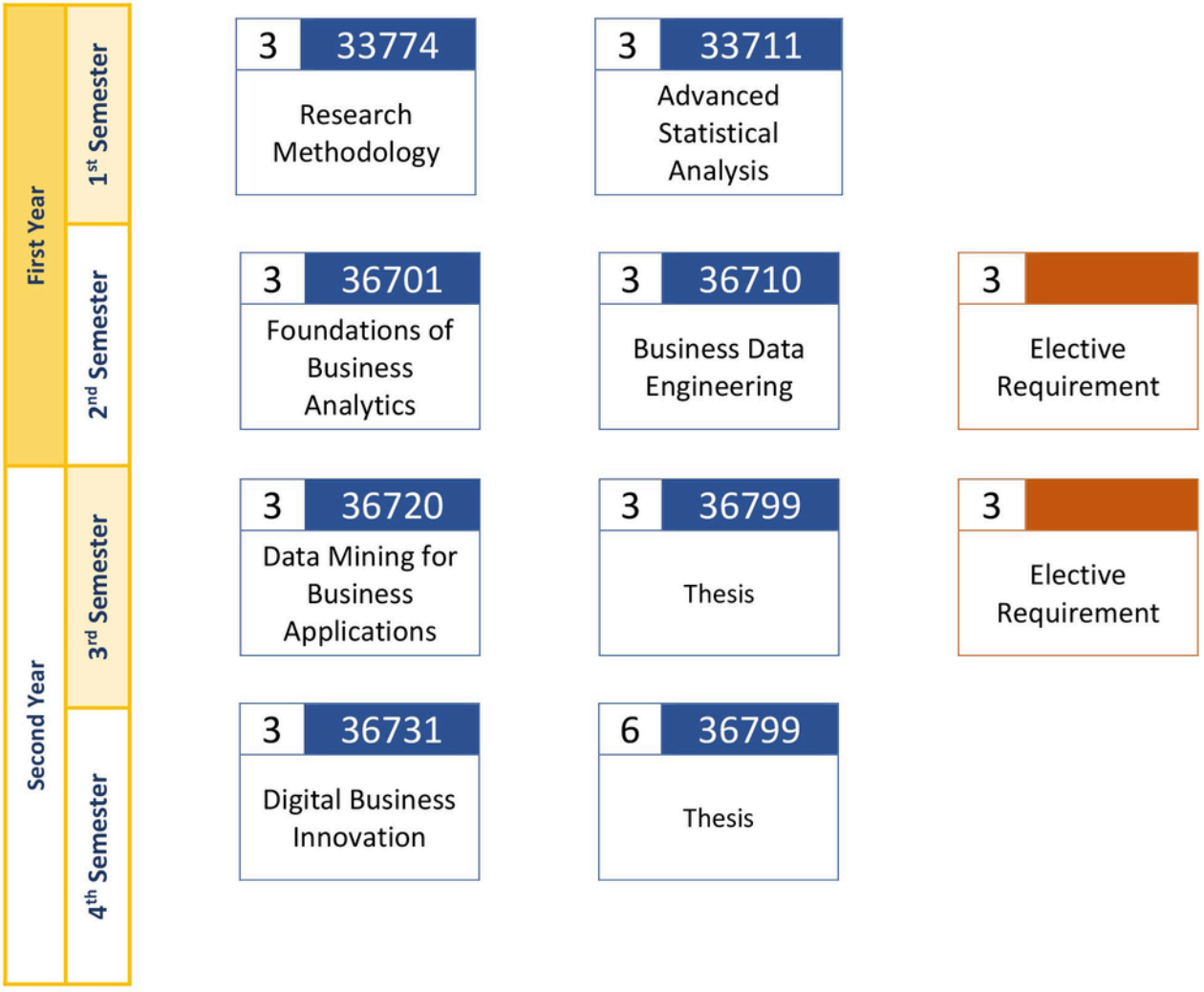
Key – Colors and Shapes

GUIDANCE PLAN

Guidance Plan - Thesis Track

Master's Degree in Business Analytics

2024/2025



Key – Colors and Shapes

GUIDANCE PLAN

34771	**Data Analytics in Accounting and Finance**	**3**

This course develops skills and knowledge of students in data analytics tools and techniques in the context of accounting and finance. This course should help students in acquiring analytics skills by introducing them to an analytic mindset, data preparation, visualization, analysis, and data interpretation and the ability to apply these skills to issues relevant to accounting using Excel, Python, Microsoft Power BI and Tableau software.

34741	**Advanced Accounting Information Systems**	**3**

This course aims to study the advanced accounting information systems (knowledge and practice) with emphasis on reporting objectives, management needs, transaction trails, documentation, security, internal controls, and the integration of accounting systems in the evaluation and selection of software. Additionally, systems analysis techniques are discussed using the systems development life cycle model. In this course students will gain an advanced understanding and appreciation of the accounting information system and how it is used to successfully manage, audit and develop processes to support today's evolving business environment.

34751	**Introduction to Financial Technology**	**3**

This course introduces the major topics of financial technology including; Blockchain, Cryptocurrencies, Big Data, Machine Learning, etc. Students are expected to develop an understanding of the recent FinTech development and its impact in the financial industries.

34752	**Advanced Financial Technology**	**3**

This course provides an advanced coverage of the main issues regarding financial technology. Main topics include: Big data, Blockchain, financial applications, cyber security. This course will also focus on research in the field of FinTech by using discussion panels and other techniques.

34711	**Financial Reporting, Forecasting & Analysis**	**3**

This course introduces students on how to prepare, interpret, analyze and evaluate financial statements for economic and profitability analyses, lending and investment decisions and other decisions that rely on such data. Ultimately, students who complete this course develop a more efficient and effective approach to preparing, researching, interpreting, and analyzing digital financial statements through understanding of Pro Forma financial statements.

34731	**Advanced Auditing, Fraud & Forensic Accounting**	**3**

This course provides an advanced coverage of the main issues regarding external auditing and forensic accounting. Main topics include audit reports, audit objectives, audit evidence, planning an audit, risk assessment in auditing, the external auditor's responsibilities towards fraud detection, audit tests and procedures, financial statement fraud, occupational fraud, fraud risk factors, and fraud symptoms.

34761	**Capital Markets & Financial Management**	**3**

This course explains the role of money in the economy and the main core principles of money and the financial system. It also describes how capital markets operate and thoroughly examines the features and characteristics of the wide array of securities traded in the market and the different types of markets including the money, capital, Eurodollar bonds foreign bond stock, derivative markets and the globalization of these markets. The topics of equities, fixed income securities and derivatives are focused on throughout the course. Students will apply some information by using computer in the lab.

34721	**Advanced Managerial Accounting**	**3**

The course serves as a tool to management's internal use of accounting information, for decision making, production management, product costing, motivating and evaluating performance, budgeting, and using accounting information for making capital budgeting decisions. The key goal for this course is to improve the students' knowledge of how managerial accounting helps managers to operate efficiently and effectively.

34772	Special Topics in Accounting Analytics and FinTech	3

This course covers various contemporary issues in accounting Analytics and Financial Technology that are not included in any other subject courses.

34762	Investment and Portfolio Analysis	3

This course provides a comprehensive overview of the investment environment and the efficiency of capital markets. In particular, it addresses a wide array of issues delineating the investment decision process, whilst integrating various analytical techniques designed to quantify optimal portfolio asset allocation and evaluate the effectiveness of diversification opportunities and uncertainty mitigation strategies, using different financial modeling tools such as hedging, CAPM, arbitrage pricing theory (APT), and multifactor models; thereby drawing a clear distinction between risk and uncertainty. The underlying curriculum closely examines debt securities and credit risk exposure, building on a theoretical framework that covers short selling, bond valuation, and the term structure of interest rates. Moreover, this course epitomizes the daily challenges faced by investors, traders, speculators, and brokers as they contend with the increasing complexity of financial markets, with a methodical emphasis on practical and ethical considerations.

36710	Business Data Engineering	3

The course starts by examining the modern data ecosystem and how it relates to running a smart and efficient data hub. Then, it shows the student how to perform the principal tasks involved in managing extracting, transforming, and loading (ETL) data. This course will explain the data life cycle in a Data science project. In addition, it will cover types of data, such as structured, semi-structured, and unstructured, and the different formats of data and techniques used in the ETL process. The course also covers the elementary visualization aspects needed to understand the data. It also takes the student through staging, profiling, cleansing, and migrating data.

36720	Data Mining for Business Applications	3

Data mining is a rapidly growing field that is concerned with developing techniques to assist users to make intelligent use of their data repositories. A number of successful applications have been reported in areas such as credit rating, fraud detection, database marketing, customer relationship management, and stock market investments. The field of data mining has evolved from the disciplines of statistics and artificial intelligence. In this course, knowledge of the challenges and techniques in the field of Data Mining will be investigated.

36701	Foundation of Business Analytics	3

This is an introductory course to Business Analytics (BA). It explains the levels of BA with a focus on descriptive, predictive, and prescriptive analytics. Main concepts such as Business Intelligence (BI), data mining and data warehousing are discussed during the course. In addition, the course introduces some key terms in the field such as: dimensional data models, data warehouse architecture and infrastructure, techniques for data integration, online analytical processing (OLAP), data visualization, analytical reporting, and managerial issues of data warehouse implementation. In addition, the course introduces the concept of big data and how it can be used to support business decisions.

36711	Advanced Statistical Analysis	Credit Hours: 3

This course explores statistical modeling and analysis techniques for aiding managerial decision making. Topics include: introduction to descriptive statistics, sampling methods and sampling distribution, confidence interval estimation, one sample hypothesis tests, one-way and two-way analysis of variance, simple and multiple linear and nonlinear regressions, and time series forecasting. Selected software packages are used to apply the theoretical part into practical business cases.

33750	Entrepreneurship & Innovation	3

This course aims on the behavior and attributes of entrepreneurs who operate in a competitive environment. It elaborates on the role of entrepreneurs in a competitive market and the role of government in the creation of a business environment conducive to entrepreneurship. The course also highlights the relevance of attitudes, values and beliefs to entrepreneurial activity; the management of risks; the process of new product development; and the reasons for the high failure rate of new businesses. The course aims to develop skills and an understanding of the risks and rewards of entrepreneurial activities.

33774	Research Methodology	Credit Hours: 3

This course aims to equip the students with the skills to conduct scientific research by introducing them to scientific research methods and providing the basic skills to write scientific research. This includes defining the problem of study and its variables, the research significance , and objectives, the research model and its variables based on the literature review, how to determine the population and sample of the study, data collection and hypotheses writing and testing methods in addition to their analysis and interpretation using statistical methods, writing the conclusions and recommendations and linking them to the literature review, and introducing the students to various documentation methods.