BUSINESS ANALYTICS AND INFORMATION SYSTEMS, BBA

Program Description

The Business Analytics and Information Systems (BAIS) major is designed for students to develop skills and knowledge needed to implement and oversee data-driven business decisions using information systems, including (i) collecting and managing data, (ii) forming inferences and predictions from data, and (iii) making optimal and robust decisions. Business analytics makes extensive use of data visualization, data mining, and optimization. The applications of business analytics span all functional areas.

Students of Business Analytics and Information Systems major are ideally suited to enter the dynamic world of business in the role of business analyst, business intelligence analyst, consulting, systems analyst, database administrator, and many others.

This major is offered on the Island Campus.

Students should complete the Business Foundation Curriculum in the freshman and sophomore years.

BBA Student Learning Goals and Objectives

- G1. To Be Effective Communicators
  - CG1.O1 – Demonstrate the ability to write professionally
  - CG1.O2 – Prepare and deliver professional presentations
  - CG1.O3 – Practice professional interactions
- G2. To Be Competent in Business Practices
  - CG2.O1 – Demonstrate key concepts in business disciplines
  - CG2.O2 – Use technology to analyze relevant data
- G3. To Be Good Decision Makers
  - CG3.O1 – Identify key factors for decision making
  - CG3.O2 – Analyze alternative solutions and make a decision
- G4. To Be Good Citizens
  - CG4.O1 – Identify ethical concepts

In addition, all Business Analytics and Information Systems Majors will demonstrate basic knowledge of Business Analytics and Information Systems theories and an understanding of how to apply concepts correctly.

General Requirements

Requirements	Credit Hours
Core Curriculum Program (http://catalog.tamucc.edu/undergraduate/university-college/programs/core-curriculum-program/)	42
First-Year Seminars (when applicable)[1]	0-2
Business Core	45
Business Analytics and Information System Major Requirements	24
Electives	9
Total Credit Hours	**120-122**

[1]

Full-time, first time in college students are required to take the first-year seminars.
- UNIV 1101 University Seminar I (1 sch)
- UNIV 1102 University Seminar II (1 sch)

Program Requirements

Code	Title	Hours
Full-time, First-Year Students		
UNIV 1101	University Seminar I [*]	1
UNIV 1102	University Seminar II [*]	1
Core Curriculum Program		
University Core Curriculum		42
Business majors are required to complete the following courses as part of their University Core Curriculum Program:		
ECON 2301	Macroeconomics Principles [*]	
MATH 1324	Mathematics for Business and Social Sciences [1]	
Business Core		
BUSI 0011	COB Orientation [2,*]	0
ACCT 2301	Financial Accounting	3
ACCT 2302	Managerial Accounting	3
BAIS 2301	Computer Applications in Business [*]	3
BAIS 3310	Management Information Systems Concepts [*,^]	3
BAIS 3311	Data Analysis and Statistics [*]	3
BLAW 3310	Legal Environment of Business [*]	3
ECON 2302	Microeconomics Principles [*]	3
FINA 3310	Financial Management [*]	3
MATH 1325	Calculus for Business & Social Sciences [1]	3
MGMT 3310	Principles of Management	3
MGMT 3315	Business Communications [*]	3
MGMT 4388	Business Strategy [*]	3
MKTG 3310	Principles of Marketing [*]	3
OPSY 4314	Operations Management [*]	3
International Business Course		
Select one of the following depending on major:		3
ACCT 3318	Multinational Entities: Accounting and Consolidations (for Accounting Major) [3,*]	
ECON 3315	International Economic Issues (for Business Economics Major)	
FINA 4315	International Finance (for Finance Major)	
MGMT 4315	Multinational Management (for Management Major) [*]	
MKTG 4340	International Marketing (for Marketing Major)	
BUSI 4310	International Business (for all other Majors)	
Business Analytics and Information Systems Major Requirements		
BAIS 3320	Database Management	3
BAIS 3330	Programing in Business Analytics	3
BAIS 3340	Business Intelligence and Analytics	3
BAIS 4310	Decision Modeling in Business	3
BAIS 4320	Data Mining for Business Intelligence	3
BAIS 4330	Predictive Analytics	3
Business Analytics and Information Systems Electives		

Select 6 hours from the following:		6
ACCT 3365	Data Analytics for Accounting	
BAIS 3350	Systems Analysis and Design	
BAIS 3360	Business Data Communication and Networking	
BAIS 4325	Electronic Commerce Management	
BAIS 4340	Website Development for Business	
BAIS 4350	IT Project Management	
BAIS 4360	Big Data Analytics	
BAIS 4390	Current Topics in Business Analytics and Information Systems	
BAIS 4396	Directed Individual Study	
BAIS 4398	Internship in Business Analytics and Information Systems	
ECON 4310	Introduction to Econometrics	
MKTG 4320	Marketing Research	
Electives		
Upper-level Business Elective		3
Business Elective		3
Non-Business or Business Elective		3
Total Hours		**122**

1

Higher level mathematics course may be accepted as a substitute with approval.

2

All Business Majors and Minors must complete BUSI 0011 COB Orientation (0 sch) before or during their first semester enrolled in upper-division Business courses.

3

ACCT 3318 Multinational Entities: Accounting and Consolidations (3 sch) may be taken as either International Business Course or as an Accounting Elective but not both.

*

Online offering

^

Blended offering

Note:

Course prerequisites are strictly enforced.

Course Sequencing

First Year

Fall

		Hours
BUSI 0011	COB Orientation	0
Creative Arts Core Requirement		3
ECON 2301	Macroeconomics Principles	3
HIST 1301	U.S. History to 1865	3
Life & Physical Science Core Requirement		3
UNIV 1101	University Seminar I	1
ENGL 1301	Writing and Rhetoric I	3
	Hours	**16**

Spring

COMM 1311	Foundation of Communication	3
HIST 1302	U.S. History Since 1865	3
ECON 2302	Microeconomics Principles	3
Language, Philosophy & Culture Core Requirement		3
MATH 1324	Mathematics for Business and Social Sciences	3
UNIV 1102	University Seminar II	1
	Hours	**16**

Second Year

Fall

ACCT 2301	Financial Accounting	3
Business Elective		3
Component Area Option Core Requirement		3
MATH 1325	Calculus for Business & Social Sciences	3
POLS 2305	U.S. Government and Politics	3
	Hours	**15**

Spring

ACCT 2302	Managerial Accounting	3
Component Area Option Core Requirement		3
Life & Physical Science Core Requirement		3
BAIS 2301	Computer Applications in Business	3
POLS 2306	State and Local Government	3
	Hours	**15**

Third Year

Fall

BAIS 3311	Data Analysis and Statistics	3
BAIS 3310	Management Information Systems Concepts	3
BAIS 3320	Database Management	3
BAIS 3330	Programing in Business Analytics	3
BLAW 3310	Legal Environment of Business	3
	Hours	**15**

Spring

FINA 3310	Financial Management	3
MKTG 3310	Principles of Marketing	3
BAIS 3340	Business Intelligence and Analytics	3
BAIS 4310	Decision Modeling in Business	3
BAIS Elective		3
	Hours	**15**

Fourth Year

Fall

MGMT 3310	Principles of Management	3
OPSY 4314	Operations Management	3
International Business Course		3
BAIS 4320	Data Mining for Business Intelligence	3
MGMT 3315	Business Communications	3
	Hours	**15**

Spring

BAIS 4330	Predictive Analytics	3
BAIS Elective		3
Upper Level Business Elective		3
MGMT 4388	Business Strategy	3

Non Business Elective	3
Hours	**15**
Total Hours	**122**

Courses

BAIS 2301 Computer Applications in Business
3 Semester Credit Hours (3 Lecture Hours)
Survey of modern business computer hardware, software, and applications. Opportunities to create programs and use existing application software to solve various management information technology-oriented problems. Emphasizes the end-user's perspective, and interactions with management information technology.

BAIS 3310 Management Information Systems Concepts
3 Semester Credit Hours (3 Lecture Hours)
Provides an understanding of the importance of computer-based information in the success of the firm. Illustrates ways in which companies utilize computer systems to strategically compete within certain industries. Emphasis is on the role of information systems within each of the functional areas of business. Major concepts include data management, decision support, and management information systems. BUSI 0011, BAIS 2301, and Junior standing or above.
Prerequisite: BUSI 0011 and BAIS 2301.

BAIS 3311 Data Analysis and Statistics
3 Semester Credit Hours (3 Lecture Hours)
A study of descriptive statistics, probability distributions, the normal distribution, confidence intervals and hypothesis testing, regression analysis and chi square. BUSI 0011, MATH 1314 and BAIS 2301 or equivalents.
Prerequisite: (MATH 1314, 1324 or 1325) and BAIS 2301.

BAIS 3320 Database Management
3 Semester Credit Hours (3 Lecture Hours)
Concepts and methodology of data base planning, design, development, and management of the computerized data base of a management information system. The emphasis is on logical data base design and a study of hierarchical, network, and relational implementations. Normalization exercises are completed relative to the logical design of relational data bases. Exercises and assignments use a relational DBMS package. Junior standing or above.

BAIS 3330 Programing in Business Analytics
3 Semester Credit Hours (3 Lecture Hours)
This course introduces students to the fundamental techniques used in the development and programming of software applications. This course is designed for students who have little or no previous computer programming experience. This course will use a scripting and/or visual development programming language. Junior standing or above.

BAIS 3340 Business Intelligence and Analytics
3 Semester Credit Hours (3 Lecture Hours)
Overview of important concepts of business intelligence, and the use of analytics, technologies, applications and processes used by organizations to gain data-driven insights. These insights and predictions can be used to aid decision-making and performance management across functional areas, including marketing, operations, and finance. Students will learn to extract and manipulate data, and create reports, scorecards and dashboards, including mobile apps. ONLY Juniors or Seniors or Post-Baccalaureate for BAIS 3340

BAIS 3350 Systems Analysis and Design
3 Semester Credit Hours (3 Lecture Hours)
Develops ability to analyze an existing information system within an organization, to identify information requirements, and to specify the functions of a new information system. Includes cost/benefit analysis of proposed information systems. Exercises and assignments use a Computer Aided Software Engineering (CASE) tool. Junior standing or above.

BAIS 3360 Business Data Communication and Networking
3 Semester Credit Hours (3 Lecture Hours)
Characteristics of contemporary business data communication components, their configurations, and their impact on management information systems design. Topics include designing, managing, securing, and implementing business data communication networks, and their integration into management information systems. Exercises and assignments use various data communication facilities. Junior standing or above.

BAIS 4310 Decision Modeling in Business
3 Semester Credit Hours (3 Lecture Hours)
Introduction to prescriptive analytic tools and techniques that can be used to analyze business decision problems and create business value. Topics may include linear programming, decision analysis, transportation and network modeling, inventory planning, queuing analysis, and simulation modeling. Students will have a hands-on learning experience with software such as Excel Solver to develop models and solve them. The applications could be from all functional areas.
Prerequisite: BAIS 2301 and 3311.

BAIS 4320 Data Mining for Business Intelligence
3 Semester Credit Hours (3 Lecture Hours)
In the information age, organizations can and do collect massive amounts of data. Yet organizations are often "data rich" but "information and knowledge poor". This course is designed to prepare business professionals who, by using analytical methods and data mining and data visualization tools will be able to harness the potential of data by extracting business intelligence that can be used to improve decisions and operations at various points in the value chain. BAIS 2301, BAIS 3311, BAIS 3320, and Junior standing or above.
Prerequisite: BAIS 2301, 3311 and 3320.

BAIS 4325 Electronic Commerce Management
3 Semester Credit Hours (3 Lecture Hours)
A broad overview of electronic commerce topics as they relate to various users. General coverage includes electronic commerce history, opportunities, limitations, and risks. Technical discussions include the internet, intranets, extranets, firewalls, security, protocols, servers, and browsers. Junior standing or above.

BAIS 4330 Predictive Analytics
3 Semester Credit Hours (3 Lecture Hours)
Predictive analytics involves extracting useful information from historical data to help predict the future outcomes of business decisions. Students will be introduced to the stages of the data analytics lifecycle and the various methods of predictive modeling for business.
Prerequisite: BAIS 3311.

BAIS 4340 Website Development for Business
3 Semester Credit Hours (3 Lecture Hours)
This course provides an understanding of the principles and techniques for client-side web development using HTML and CSS. Text editors and the website development software will be used to create and maintain websites. This course includes designing to meet web standards, including accessibility, usability, and workflow for web design. Junior standing or above.

BAIS 4350 IT Project Management
3 Semester Credit Hours (3 Lecture Hours)
This course covers issues related to managing projects in organizations. The course focuses on the management of projects and working as a team. Students are expected to draw on materials from other management information system courses, especially the System Analysis and Design, and Database Management courses.
Prerequisite: BAIS 3320.

BAIS 4360 Big Data Analytics
3 Semester Credit Hours (3 Lecture Hours)
This course is designed to provide a basic understanding of what big data analysis entails. The course intends to familiarize students with big data analysis as a tool for addressing substantive research questions. The course includes practical exercises to provide students with hands-on experience in handling and analyzing large, complex, and unstructured data.
Prerequisite: BAIS 3311, 3320 and 3340.

BAIS 4390 Current Topics in Business Analytics and Information Systems
1-3 Semester Credit Hours (1-3 Lecture Hours)
Selected topics for special study related to business analytics and information systems. Junior standing or above, and others depending on topic. Contact the Dean's office for information.

BAIS 4396 Directed Individual Study
1-3 Semester Credit Hours
Individual supervised study and a final report. Permission of instructor, Junior standing or above, and others depending on selected topic. Inquire at the Dean's office for information.

BAIS 4398 Internship in Business Analytics and Information Systems
1-3 Semester Credit Hours
Supervised practical experience in business computer systems. BAIS major, Junior standing or above, and others depending on selected internship. Students must be accepted prior to registration. May not be repeated for credit.