**business analytics and information systems program**

**Master of Science (M.S.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

**Fall:** July 1

**Spring:** October 15

**Summer:** No Admit

***International:***

**Fall:**  February 1

**Spring:** September 15

**Summer:** No Admit

**Minimum Total Hours:** 33

**Program Level:** Masters

**CIP Code:** 11.0501

**Dept. Code:** QMB

**Program (Major/College):**  BAI BA

**Approved:**  2002

**Concentrations:**

Analytics and Business Intelligence (ABI)

Information Assurance (CIA)

**Also offered as:**

Track under Business Administration (Ph.D.) and application area in Business Administration (M.B.A.)

**CONTACT INFORMATION**

**College:** Business

**Department:** Information Systems/Decision Sciences (QMB)

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu/)

**PROGRAM INFORMATION**

The Master of Science (M.S.) in Business Analytics and Information Systems (BAIS) meets the needs of the marketplace for expertise in analytics, information technology and management. Highly qualified individuals with motivation for leadership in information technology and analytics are encouraged to apply for admission to this program. The program meets the needs of organizations in information services, software development, management consulting, and other sectors wherer data analytics is used in industry. An Advisory Board consisting of senior business analytics and information systems executives works closely with the department to ensure that the program stays relevant and maintains high standards.

The program is offered in two forms – an on-campus option and a weekend executive option.

The on-campus option is designed for students who need flexibility in their course work. Students will work with faculty to design the most effective course sequence and optional thesis/practicum /independent studies to meet the major curriculum requirements and accomplish their career goals.

Alternately, the weekend executive option is intended for full-time working Information Technology/Information Systems/Business professionals who will pursue this degree while remaining employed. The weekend executive option is offered on a cohort basis with a pre-determined set of courses and independent study options selected by faculty based on market needs and student profiles. Students will benefit from an accelerated curriculum with a managerial and leadership approach. To get the full benefit, applicants are expected to have a minimum of 5 years of relevant work experience.

**Accreditation**

Accredited by the Commission on Colleges of the Southern Association of College and Schools, and AACSB International – The Association to Advance Collegiate Schools of Business.

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

Students are admitted to the M.S./BAIS program based on the evaluation of their application in its entirety, including

* bachelor’s degree with a 3.00 GPA,
* GMAT, GRE or other standardized scores for graduate programs (e.g. MCAT, LSAT).
  + For students with 5 years or more of relevant full-time work experience in Information Technology/ Information Systems/ Business Analytics in U.S., the requirement of standardized scores may be waived.
  + Students requesting such waivers should provide information justifying such waivers based on the above criteria. Additional documentation may be sought when deemed appropriate by the program.
* Language proficiency scores (for international students only) (e.g. TOEFL with a minimum score of 79) using TOEFL or IELTS or other standardized English tests as accepted by Graduate Admissions.
* letters of recommendations,
* statement of purpose, and
* relevant work experience.

**DEGREE PROGRAM REQUIREMENTS**

The major requires 33 hours of coursework and may be taken either full-time or part-time. Full-time students with appropriate prerequisites may be able to complete the major in one full year (3 semesters) of study. Part-time students and full-time students who need prerequisites will typically need from 1 ½ to 3 years to complete the degree.

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**Prerequisites**

Incoming students are expected to have the following as prerequisites:

1. One semester of a high-level, object oriented programming language (e.g., C#, C++, Java) or substantial programming experience;
2. One semester of *Information Systems Analysis and Design* or equivalent experience;
3. One semester of *Database* Systems or equivalent experience;
4. A course in Statistics or equivalent professional qualification or experiences
5. A course in economics, or equivalent professional qualification or experiences and
6. A course in financial accounting.

These required prerequisite courses may be taken concurrently with courses in the M.S./BAIS program. Prerequisiite courses do not count toward the 33 credit hours of course requirements in the M.S./BAIS program.

**Students have the choice of two options:**

**On-Campus Option:**

Designed for students who need flexibility in their course work, students will work early in the first semester with their major advisor to complete a formal Major Curriculum of Study meeting the Major Curriculum Requirements that will define a coherent sequence of courses to accomplish the student’s objectives. Students have choice of electives as well as the option to complete a master’s thesis or practicum project, depending upon the availability and approval of a faculty sponsor.

**Executive Weekend Option:**

Intended for full-time working Information Technology/Information Systems/Business professionals who will pursue this degree while remaining employed. Offered on a cohort basis, students will meet the Major Curriculum Requirements through a pre-determined set of courses, electives, and independent study options selected by faculty and noted on the formal Major Curriculum of Study, based on market needs and student profiles. Students will benefit from an accelerated curriculum with a managerial and leadership approach. To get the full benefit, applicants are expected to have a minimum of 5 years of relevant work experience.

**Total Minimum Program Hours: 33 credits**

Core – 12 credits

Capstone – 3 credits

Concentration or Electives – 18 credits

**Technical Core – 12 credits**

The following four courses provide an understanding of the state-of-the-art in research and practice in technical areas of Information Systems Management.

ISM 6124 3 Advanced Systems Analysis and Design

ISM 6218 3 Advanced Database Management

ISM 6225 3 Distributed Information Systems

ISM 6436 3 Operations and Supply Chain Processes

**Capstone Course - 3 credits**

ISM 6155 3 Enterprise Information Systems Management

This course is considered to be the capstone of the M.S./BAIS program and as such it must be taken during one of the last two semesters of the student’s program.

**CONCENTRATION OPTIONS:**

Students select from the following concentrations or complete 18 hours of electives.

**ANALYTICS & BUSINESS INTELLIGENCE CONCENTRATION – 18 hours**

In addition to the Technical Core and Capstone courses, students must complete the following:

**Required courses – 12 credits**

Students will have to complete four out of the following seven courses:

ISM 6136 3 Data Mining\*

ISM 6218 3 Advanced Database Management

ISM 6208 3 Data Warehousing

ISM 6137 3 Statistical Data Mining\*

QMB 7566 3 Applied Multivariate Statistical Methods

ISM 6930 3 Statistical Programming for Business Analytics\*

ISM 6930 3 Big Data and Ecommerce

In addition, graduate students who take the required four courses for this concentration and earn an average GPA of 3.00 or higher in these courses, will receive a SAS approved Certificate in Analytics and Business Intelligence, when they use a SAS analytics package as part of some of these courses.

Specifically, graduate students will need to use, among other tools, SAS Enterprise Miner or an equivalent SAS analytics package in the Data Mining, Statistical Data Mining and Statistical programming for Business Analytics courses. If students take at least one of the courses marked with a \* as part of the analytics and business intelligence concentration, they will receive a SAS approved Certificate in Analytics and Business Intelligence.

**Electives – 6 credits**

To complete the Analytics and Business Intelligence concentration, students will need to meet the 33 credit hour requirement for the MS in BAIS degree program by taking graduate level electives for the program. Other electives from across the campus may also be taken to meet the 33 credit hour requirement with prior approval of the academic advisor of the program.

**INFORMATION ASSURANCE CONCENTRATION – 18 hours**

In addition to the Technical Core and Capstone courses, students must complete the following:

**Required courses – 6 credit hours**

ISM 6328 3 Information Security & Risk Management

ISM 6930 3 Selected Topics: Decision Analysis for Business Continuity and Disaster Recovery

**Electives – 6 credits**

Any two elective courses from the set of courses listed below

ISM 6145 3 Seminar on Software Testing

ISM 6316 3 Project Management

ISM 6124 3 Advanced Systems Analysis and Design

ISM 6218 3 Advanced Database Management

ISM 6266 3 Software Architecture

**Electives – 6 credits**

To complete the Information Assurance concentration, students will need to meet the 33 credit hour requirement for the MS in BAIS degree by taking graduate level electives for the program. Other electives from across the campus may also be taken to meet the 33 credit hour requirement with prior approval of the academic advisor of the program.

**Electives - 18 credits**

Up to eighteen credits may be selected from additional Information Systems courses or (with prior approval by the academic advisor) other areas of specialization such as areas of Management, Decision Sciences, Computer Science, Logistics, etc. Existing Course Offerings:

ISM 6124 3 Advanced Systems Analysis and Design

ISM 6266 3 Software Architecture

ISM 6145 3 Seminar on Software Testing

ISM 6155 3 Enterprise Information Systems Management

ISM 6218 3 Advanced Database Management

ISM 6225 3 Distributed Information Systems

ISM 6305 3 Managing the Information System Function

ISM 6442 3 International Aspects of Information Science

ISM 6405 3 Information and Business Intelligence

ISM 6485 3 Electronic Commerce

ISM 6905 1-6 Independent Study

ISM 6930 1-6 Selected Topics in Management Information Systems

ISM 6316 3 Project Management

ISM 6136 3 Data Mining

ISM 6208 3 Data Warehousing

ISM 6056 3 Web Application Development

ISM 6156 3 Enterprise Resource Planning & Business Process Management

ISM 6328 3 Information Security and Risk Management

In addition, the following Special Topics are being offered:

ISM 6930 Selected Topics: Multimedia Applications

ISM 6930 Selected Topics: Mainframe Technologies

ISM 6137 Statistical Data Mining

**Thesis Option - 6 hours**

The master’s thesis option requires six credits of ISM 6971, which count as six of the 18 BAIS elective credits. The thesis must make a well-defined contribution to the research and development in an area of Information Systems.

ISM 6971 2-6 Thesis: Masters

**Practicum Option – 1-6 hours**

The practicum option requires an investigation of a new information technology artifact. The project typically occurs in the student’s place of employment and is jointly supervised by a faculty member and a manager in the company. One credit of ISM 6905 would be taken for each semester that the student works on a project. The practicum would count for one to six hours of the 18 hours of BAIS electives.

**Research/Project Option – 1-3 hours**

The research/ project option requires working on an BAIS related project that involves research or community engagement. The project is supervised by a faculty member. One to two credits of ISM 6905 would be taken for each semester that the student works on a project. The research/ project option would count for one to three hours of the 18 hours of BAIS electives.

**Comprehensive Exam**

In lieu of a comprehensive exam, assessments comprising the capstone course (ISM 6155) fulfill the requirements for the comprehensive assessment in the program.

**Graduate Certificate Options**

Note that students in the Program can also obtain graduate certificates in (1) Compliance, Risk and Anti-Money Laundering and/or (2) Information Assurance by selecting elective courses suitably.

**COURSES**

See [http://ugs.usf.edu/course-inventory](http://www.ugs.usf.edu/sab/sabs.cfm)