

INFORMATION SYSTEMS AND BUSINESS ANALYTICS (ISBA), BACHELOR OF SCIENCE (B.S.) DEGREE

Objectives

The Bachelor of Science (B.S.) degree in Information Systems and Business Analytics (ISBA) is designed to prepare students for careers in the Information Systems and Business Analytics fields and provide students opportunities to develop analytic skills and learn how to apply latest information technology tools to solve business problems at the operational, technical, and strategic levels. Students will acquire foundational programming skills, learn to use various development tools, and acquire critical data management skills and competencies. They will understand how organizational processes interact with IS/IT and learn how to design systems and analytic tools to support these processes. The major will provide students critical skills necessary to continuously adapt to the ever-changing field of IT and business applications. The ISBA B.S. degree aims to provide more technical depth in programming area to the students pursuing the degree compared to the students in the regular ISBA B.B.A. major. Additionally, current methods and tools deployed in the data analytics area demand understanding of the mathematics behind those tools for their effective learning and deployment. Students in the ISBA B.S. degree program, therefore, are required to take non-business courses from the Computer Science department and a possible Deep Learning or Machine Learning course from the Mathematics department in the Frank R. Seaver College of Engineering to acquire such depth.

Learning Outcomes

Learning outcomes for ISBA majors pursuing a B.S. degree are as follows:

LMU Information Systems and Business Analytics graduates will be able to:

1. Utilize competencies gained from hands-on experience in core information technologies that include programming languages, database management systems, web development tools, spreadsheets, and other data analysis tools
2. Identify, structure, and solve business problems by proposing an IS, IT, and/or analytics solution
3. Plan, manage, develop, and describe how to implement information systems in business and organizational settings
4. Apply critical thinking and problem-solving skills when analyzing business problems
5. Effectively communicate complex technological and or analytical concepts through oral, visual, and written communication
6. Develop proficiency in at least one mainstream programming language, such as Java, JavaScript, C++, or Python

Core, Major, and Elective Information Systems and Business Analytics Courses (B.S. degree)

Code	Title	Semester Hours
Lower Division Requirements		
BCOR 1910	Business for Good	2
BCOR 2110	Financial Accounting	4
BCOR 2120	Accounting Information for Decision Making	4
BCOR 2210	Legal Environment of Business	2
BCOR 2710	Business Information Technology	4
ECON 1050	Introductory Economics	4
ECON 2300	Introductory Statistics	4
MATH 112	Calculus for Business	3
Subtotal		27
Upper Division Requirements		
BCOR 3410	Fundamentals of Finance	4
BCOR 3510	Marketing and Business Communications	4
BCOR 3610	Managing People and Organizations	4
BCOR 4910	Business Ethics and Sustainability	4
One course from the "Quantitative Methods for Business" course-list ¹		4
One course from the "International/Global Awareness" course-list ²		4
One course from the "Strategic Business Integrations" course-list ³		4
Subtotal		28
Total Semester Hours		55

1

e.g., BCOR 3750 Analytics in Operations and Supply Chain Management

2

e.g., BCOR 3860 International Business

3

e.g., BCOR 4970 Strategic Management

Note:

Students electing the B.S. in ISBA degree must complete all the requirements of the Information Systems and Business Analytics (ISBA), Bachelor of Business Administration (B.B.A.) Degree. In addition, students pursuing a B.S. in ISBA must take at least 12 units of Computer Science courses. The combination of courses must include at least one programming course. Since the B.S. ISBA major will be fulfilling the programming requirement through the courses in the Computer Science department, students must take three additional 4-semester-hour ISBA electives in addition to the required ISBA 3710 Database Management Systems and ISBA 4797 Capstone Project.

ISBA Major Course Requirements

Code	Title	Semester Hours
ISBA 3710	Database Management Systems	4
ISBA 4797	Capstone Project	4
ISBA 3720	Systems Analysis and Design	4
or ISBA 4796	Capstone Proposal Development	
Select at least three of the following ISBA electives:		12

ISBA 3720	Systems Analysis and Design	
ISBA 3730	Programming for Business Applications	
ISBA 4715	Developing Business Applications Using SQL	
ISBA 4740	Financial Modeling and Analytics	
ISBA 4750	Business Web and App Development	
ISBA 4755	Introduction to Big Data	
ISBA 4760	Data Visualization and GIS	
ISBA 4770	Cybersecurity	
ISBA 4775	Network Cloud Computing	4
ISBA 4790	Machine Learning	
ISBA 4798	Special Studies	
ISBA 4799	Independent Studies	

Total Semester Hours 28

Note:

All upper division ISBA courses must be taken in residence at LMU. A cumulative GPA of C (2.0) must be achieved in the core requirements (all business, economics, and mathematics courses).

For purposes of meeting the requirements for the Information Systems and Business Analytics major, an overall cumulative grade point average of at least a C (2.0) must be obtained in all courses required in the major.

Model 4-Year Plan—Bachelor of Science—Information Systems and Business Analytics Major Curriculum

The following curriculum represents the order of sequence in which it is expected that students will take the various courses required for the B.S. (Information Systems and Business Analytics major) degree.

ISBA (B.S.) Sample Schedule

Course	Title	Semester Hours
First Year		
Fall		
BCOR 1910	Business for Good	2
ECON 1050	Introductory Economics	4
FFYS 1000	First Year Seminar	4
MATH 112	Calculus for Business	3
University Core		4
Semester Hours		17
Spring		
ECON 2300	Introductory Statistics	4
RHET 1000	Rhetorical Arts	3-4
University Core		3-4
University Core		4
Semester Hours		14-16
Sophomore Year		
Fall		
BCOR 2110	Financial Accounting	4
BCOR 2210	Legal Environment of Business	2
CMSI 1010	Computer Programming and Laboratory	4
University Core		3-4
University Core		4
Semester Hours		17-18
Spring		
BCOR 2120	Accounting Information for Decision Making	4

BCOR 2710	Business Information Technology	4
BCOR 3410	Fundamentals of Finance	4
Select one of the following:		2-4
CMSI Elective		
CMSI Elective (please see note)		
Semester Hours		14-16
Junior Year		
Fall		
BCOR 3510	Marketing and Business Communications	4
BCOR 3610	Managing People and Organizations	4
ISBA 3710	Database Management Systems	4
ISBA Elective		4
Semester Hours		16
Spring		
BCOR 3750	Analytics in Operations and Supply Chain Management	4
BCOR 3860	International Business	4
ISBA Elective		4
CMSI Elective		4
Semester Hours		16
Senior Year		
Fall		
BCOR 4910	Business Ethics and Sustainability	4
Select one of the following:		1-4
ISBA 3720	Systems Analysis and Design	
ISBA 4796	Capstone Proposal Development	
CMSI Elective ¹		2
University Core		4
Semester Hours		11-14
Spring		
BCOR 4970	Strategic Management	4
ISBA 4797	Capstone Project	4
University Core		4
ISBA Elective ²		4
Semester Hours		16
Minimum Semester Hours		121-129

1

if 12 units of CMSI are not fulfilled, please see note

2

if did not take ISBA 3270 in the fall semester

Note:

Some of the CMSI electives are 2 units. An ISBA B.S. major can take these courses to fulfill the CMSI requirements as long as the total number of CMSI units adds up to 12. The model 4-year plan shows how a student can accommodate 2 of those 2-unit CMSI courses in their graduation plan. Electives and some University Core courses may vary in terms of the number of credits granted. The total number of semester hours required is 128 for graduation, which assumes that each course will be 4 semester hours. If less, compensatory credits may be required to reach 128.