Information Systems (ISBA)

B.B.A. with Major in Information Systems (https://catalog.und.edu/undergraduateacademicinformation/departmentalcoursesprograms/accountancy/isbe-bba/)

Minor in Information Systems (https://catalog.und.edu/undergraduateacademicinformation/departmentalcoursesprograms/accountancy/isbe-minor/)

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Freshman Year

Fall		Credits
ENGL 110	College Composition I	3
MATH 103	College Algebra	3
Essential Studies: Fine Arts		3
Essential Studies: Social Science		3
Free Elective		3
	Credits	**15**
Spring		
ISBA 217	Fundamentals of Computer Information Systems	3
ECON 201	Principles of Microeconomics	3
ENGL 130	Composition II: Writing for Public Audiences	3
Essential Studies: Lab Science		4
Essential Studies: Oral Communications		3
	Credits	**16**

Sophomore Year

Fall		
ACCT 200	Elements of Accounting I	3
ECON 202	Principles of Macroeconomics	3
ECON 210	Introduction to Business and Economic Statistics	3
Essential Studies: Humanities		3
Essential Studies: Analyzing Worldviews		3
	Credits	**15**
Spring		
ISBA 300	Programming for Data Analytics	3
ACCT 201	Elements of Accounting II	3
MGMT 300	Principles of Management	3
Essential Studies: Fine Arts or Humanities		3
Free Elective		3
	Credits	**15**

Junior Year

Fall		
ISBA 330	Database Management	3
Essential Studies: Diversity of Human Experience		3
Free Elective		6
MRKT 305	Marketing Foundations	3
	Credits	**15**
Spring		
ISBA 370	Web Development	3
ISBA 430	Database Analytics	3
MGMT 301	Operations Management	3
Free Elective		6
	Credits	**15**

Senior Year

Fall		
ISBA 410	Information Security	3
FIN 310	Principles of Financial Management	3
Info Sys Elective		3
Essential Studies: Advanced Communications		3
Free Elective		3
	Credits	**15**
Spring		
MGMT 475	Strategic Management	3
Info Sys Elective		3
Free Elective		8
	Credits	**14**
	Total Credits	**120**

Please note that every student must fulfill all University, Departmental, and Essential Studies requirements. (https://und.edu/academics/essential-studies/)

ISBA 117. Personal Productivity with Information Technology. 1 Credit.
Introductory lab-based course covering basic computer hardware, operating systems, software, and Microsoft Office tools. On demand.

ISBA 217. Fundamentals of Computer Information Systems. 3 Credits.
This course exposes students to the role information systems play in the business world with an introduction to information technology topics and data analytics. This experiential and application-oriented course develops spreadsheet, visualization, and database competencies relevant to business professionals. F,S,SS.

ISBA 300. Programming for Data Analytics. 3 Credits.
This course introduces one powerful and widely used programming language for data analytics. Course content may vary based on the current programming trend. The programming language chosen has easily understood syntax and library or open source modules for everything from web development to data analysis. This course covers the syntax and semantic of the programming language and its uses as a data analytics tool. The material will emphasize the core concepts in the programming language, specifically data types, data structures, functions, and text and image processing and how they can be implemented and used to address data analytics problems. Popular modules used in data analysis such as data mining and data visualization will also be covered. F.

ISBA 305. End-User Applications. 3 Credits.
Development of proficiency in the use of end-user software applications with emphasis on spreadsheet and database. Spreadsheet applications include solutions for typical business situations using functions, macros and linking. Database applications include development of and querying of databases, linking, generating forms and reports, and developing menus. Prerequisite: ISBA 217. F.

ISBA 330. Database Management. 3 Credits.
This course covers the fundamentals of database design and management. Topics include, but not limited to, database models, database normalization, entity-relationship diagramming, SQL and database implementation and management. The course will provide a balance of theory and practical applications and will culminate in database implementation exercises conducted by students. F,S.

ISBA 340. Fundamentals of Networking. 3 Credits.
Explores principles of networking computer systems; telecommunications hardware, software, and media components; and approaches to efficient business data communications. The student will be exposed to telecommunications terminology, concepts, protocols, and logical and physical design of local area networks. On demand.

ISBA 370. Web Development. 3 Credits.
An introduction to web application development in a business environment. Students learn programming theory, fundamentals and practices in writing programs to meets business requirements, solve business problems, and address business opportunities in the desktop, mobile and/or Internet/intranet environments. Prerequisite: TECH 232. S.

ISBA 397. Cooperative Education. 1-2 Credits.
Compensated work experience in areas related to information systems. Enrollment in 1 credit grants half-time student status, 2 credits grants full-time status (See Academic Catalog description of Cooperative Education.). Prerequisite: ISBA 217 and approval of the Information Systems Cooperative Education/Internship Coordinator. Repeatable to 6.00 credits. S/U grading. F,S,SS.

ISBA 410. Information Security. 3 Credits.
An introduction to information security and information assurance. The students will achieve a firm intuition about what information security means; be able to recognize potential threats to information confidentiality, integrity and availability; be aware of some of the underlying technologies that address these challenges; and be conversant with current security-related issues in the field. This course addresses both the technical and behavioral aspects of information security. F.

ISBA 420. Robotic Process Automation in Business. 3 Credits.
This course equips students with a comprehension of tools and techniques of robotic process automation (RPA) in business. Coverage includes, but not limited to, automating business processes, processing business transactions, designing and creating business robots, training robots, modeling robotic flowchart, recording and playing the bots, handling assistant bots, implementing and maintaining the bots, and any new cutting-edge technologies about RPA. Students with no prior coding or programming knowledge will be able to build and train robots to execute business activities. On demand.

ISBA 430. Database Analytics. 3 Credits.
This course equips students with an understanding of techniques in data analytics with particular emphasis on unstructured data. Coverage includes, but not limited to, database analytics, PL/SQL, advanced SQL, business intelligence, unstructured big data analytics, Hadoop framework in business, data visualization, data warehousing, NoSQL, and in-memory database system. S.

ISBA 471. Advanced Information Systems Programming. 3 Credits.
Advanced-level programming in a business environment. Students apply programming and database theory, fundamentals and practices learned in ISBA 370 and/or ISBA 300 to address complex business problems and opportunities in the desktop, mobile and/or Internet/intranet environments. Prerequisite: ISBA 300 or ISBA 370. On demand.

ISBA 497. Information System Internship. 1-6 Credits.
Compensated work experience in areas related to information systems. Repeatable to 6 credits cumulative from ISBC 397, ISBC 497. Prerequisite: ISBA 217 and approval of the Information Systems Cooperative/Internship Coordinator. Repeatable to 6.00 credits. S/U grading. F,S,SS.

ISBC 431. Database Administration and Optimization. 3 Credits.
Focuses on the administration of business databases and the optimization of database performance at the server level. Topics may include but are not limited to user and security administration, physical organization and optimization, performance maintenance and monitoring, fault tolerance, database distribution and replication. Prerequisite: ISBC 430. On demand.

ISBC 499. Special Topics. 1-3 Credits.
Topics will be selected on the basis of currency and relevancy to student needs. Repeatable to 12 credits. Repeatable to 12.00 credits. On demand.