

# Information Systems (ISYS)

Shailla Miranda  
Department Chair  
204 Business Building  
479-575-4500  
Email: smiranda@walton.uark.edu

Information Systems Department Website (<https://walton.uark.edu/departments/information-systems/>)

The curriculum in information systems is designed to prepare graduates for careers in solving business problems with applications of computer technology.

Graduates with a degree in Information Systems are sought by hundreds of companies for many different types of positions, such as programmer, analyst, database administrator, and web developer, among others. Graduates are now programming, analyzing and designing systems, consulting, teaching, and solving business problems across the country.

Three concentrations are offered:

- Blockchain Enterprise Systems
- Business Analytics
- Enterprise Resource Planning

The department also offers three minors: one in business analytics, one in data and cybersecurity management and one in information systems for business students.

The department also offers a certificate of proficiency in cybersecurity and data management, and three microcertificates — Blockchain, Business Analytics and Business Cybersecurity.

## Information Systems Major Requirements

The major in Information Systems requires 27 hours of major in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 30 hours is allowed in the Information Systems major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 27 credit hours. Because of prerequisites, students should allow two full years (24 months) to complete this coursework. Prerequisites are strictly enforced.

Course Requirements in the Major for All Concentrations		18
ISYS 22603	Principles of Information Systems	
ISYS 32903	Systems Analysis and Design	
ISYS 33903	Business Application Development Fundamentals	
ISYS 42803	Business Database Systems	
ISYS 43603	Business Project Development	
ISYS 42103	ERP Fundamentals	

Note: These required courses represent a common body of knowledge for all information systems majors. Majors must select one of the following concentrations and must complete nine additional hours of coursework in the elected concentration.

Maximum of 30 hours of ISYS courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

<b>Junior/Senior Level Business Electives</b>	<b>9</b>
<b>Concentration Courses</b>	<b>9</b>

<sup>1</sup> CSCE 20004 Programming Foundations I is recommended as a general education elective.

## Blockchain Enterprise Systems Concentration

ISYS 41703	Blockchain Fundamentals	3
ISYS 44503	Introduction to Blockchain Applications	3
ISYS 44603	Blockchain Enterprise Systems Development	3
<b>Total Hours</b>		<b>9</b>

## Information Systems B.S.B.A. with Blockchain Enterprise Systems Concentration

### Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program.

Courses in **BOLD** must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

First Year	Units	
	Fall	Spring
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) <sup>3</sup>	3	
<b>MATH 20503 Finite Mathematics (Satisfies General Education Outcome 2.1)<sup>1,3</sup></b>	<b>3</b>	
<b>BUSI 11101 Freshman Business Connection<sup>3</sup></b>	<b>1</b>	
<b>SCMT 21003 Integrated Supply Chain Management<sup>2</sup></b>	<b>3</b>	
<b>MGMT 21003 Managing People and Organizations<sup>2</sup></b>	<b>3</b>	
<b>ISYS 11203 Business Application Knowledge - Computer Competency<sup>3</sup></b>	<b>3</b>	
<b>BLAW 20003 The Legal Environment of Business (ACTS Equivalency = BLAW 2003)<sup>2</sup></b>		<b>3</b>
<b>SPCH 10003 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)<sup>3</sup></b>		<b>3</b>
<b>ACCT 20103 Accounting Principles<sup>3</sup></b>		<b>3</b>
<b>BUSI 10303 Data Analysis and Interpretation<sup>3</sup></b>		<b>3</b>
Satisfies General Education Outcome 3.3:		

ECON 22003 Principles of Microeconomics (ACTS Equivalency = ECON 2203) <sup>3</sup> or ECON 21003 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)	3	
Year Total:	16	15

**Second Year**

	Units	
	Fall	Spring
ACCT 20203 Accounting Principles II <sup>3</sup> or SEVI 20503 Business Foundations	3	
<b>ISYS 21003 Business Information Systems<sup>2</sup></b> Satisfies General Education Outcome 3.3:	3	
ECON 21003 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) <sup>3</sup> or ECON 22003 Principles of Microeconomics (ACTS Equivalency = ECON 2203)	3	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) <sup>3</sup>	3	
Fine Art/Humanities Course State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>5, 6</sup>	3	
Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) <sup>4</sup>	3	
<b>MATH 22003 Survey of Calculus (ACTS Equivalency = MATH 2203)<sup>3</sup></b> 3 hours general education elective	3	
<b>ISYS 22603 Principles of Information Systems</b> Science Course State Minimum Core (Satisfies General Education Outcome 3.4)	3	
<b>All pre-business requirements should be met by end of term</b>		
Year Total:	15	16

**Third Year**

	Units	
	Fall	Spring
<b>FINN 20403 Principles of Finance<sup>2</sup></b>	3	
<b>MKTG 34303 Introduction to Marketing<sup>2</sup></b>	3	
<b>ISYS 32903 Systems Analysis and Design</b> Junior Senior Business Electives	3	
Science - State Minimum Core (Satisfies General Education Outcome 3.4)	4	
<b>ISYS 33903 Business Application Development Fundamentals</b>	3	
<b>ISYS 41703 Blockchain Fundamentals</b>	3	
<b>ISYS 42103 ERP Fundamentals</b> SEVI 30103 Strategic Management (Satisfies General Education Outcome 6.1)	3	
U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2)	3	
Year Total:	16	15

	Units	
	Fall	Spring
<b>ISYS 42803 Business Database Systems</b>	3	
<b>ISYS 44503 Introduction to Blockchain Applications</b> Junior Senior Business Electives	3	
General Education Electives	6	
<b>ISYS 43603 Business Project Development</b>		3
<b>ISYS 44603 Blockchain Enterprise Systems Development</b> Fine Arts/Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>5, 6</sup>		3
General Education Electives		3
Year Total:	15	12
<b>Total Units in Sequence:</b>		<b>120</b>

<sup>1</sup> Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 20503.

<sup>2</sup> Must be completed prior to SEVI 30103.

<sup>3</sup> Must be completed prior to taking any 3000 or 4000 level business courses.

<sup>4</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 10203, HIST 11193, HIST 11293, SOCI 10103, SOCI 101H3, and SOCI 20103.

<sup>5</sup> The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include: ARCH 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 100H3, MUSC 10103, MUSC 101H3, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.

<sup>6</sup> The Humanities Elective courses which satisfy the General Education Outcome 3.2 include: AAST 20203, ANTH 10303, ARCH 10103, CLST 10003, CLST 100H3, CLST 10103, COMM 12303, DANC 10003, ENGL 12103, GNST 20003, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20003, HIST 20103, HUMN 112H4, HUMN 22103, LALS 20103, MRST 20103, MUSY 20003, MUSY 200H3, PHIL 20003, PHIL 200H3, PHIL 21003, PHIL 23003, THTR 10003, THTR 10103, THTR 101H3, ENGL 11103, ENGL 11203, or intermediate-level world language (usually 2003-level).

## Information Systems Major Requirements

The major in Information Systems requires 27 hours of major in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 30 hours is allowed in the Information Systems major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 27 credit hours. Because of prerequisites, students should allow two full years (24 months) to complete this coursework. Prerequisites are strictly enforced.

**Course Requirements in the Major for All Concentrations 18**

ISYS 22603	Principles of Information Systems	
ISYS 32903	Systems Analysis and Design	
ISYS 33903	Business Application Development Fundamentals	
ISYS 42803	Business Database Systems	
ISYS 43603	Business Project Development	
ISYS 42103	ERP Fundamentals	

Note: These required courses represent a common body of knowledge for all information systems majors. Majors must select one of the following concentrations and must complete nine additional hours of coursework in the elected concentration.

Maximum of 30 hours of ISYS courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

**Junior/Senior Level Business Electives 9****Concentration Courses 9**

<sup>1</sup> CSCE 20004 Programming Foundations I is recommended as a general education elective.

**Business Analytics Concentration**

ISYS 41903	Business Analytics and Visualization	3
ISYS 42903	Business Intelligence	3
ISYS 43903	Seminar in Applied Business Analytics	3
<b>Total Hours</b>		<b>9</b>

**Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program.

Courses in **BOLD** must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

First Year	Units	
	Fall	Spring
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) <sup>3</sup>	3	
<b>MATH 20503 Finite Mathematics (Satisfies General Education Outcome 2.1)<sup>1, 3</sup></b>	<b>3</b>	
<b>BUSI 11101 Freshman Business Connection<sup>3</sup></b>	<b>1</b>	
<b>SCMT 21003 Integrated Supply Chain Management<sup>2</sup></b>	<b>3</b>	
<b>MGMT 21003 Managing People and Organizations<sup>2</sup></b>	<b>3</b>	
<b>ISYS 11203 Business Application Knowledge - Computer Competency<sup>3</sup></b>	<b>3</b>	
<b>BLAW 20003 The Legal Environment of Business (ACTS Equivalency = BLAW 2003)<sup>2</sup></b>		<b>3</b>
<b>SPCH 10003 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)<sup>3</sup></b>		<b>3</b>
<b>ACCT 20103 Accounting Principles<sup>3</sup></b>		<b>3</b>

**BUSI 10303 Data Analysis and Interpretation<sup>3</sup> 3**

Satisfies General Education Outcome 3.3: ECON 22003 Principles of Microeconomics (ACTS Equivalency = ECON 2203) <sup>3</sup> or ECON 21003 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)		3
Year Total:	16	15

**Second Year**

	Units	
	Fall	Spring
ACCT 20203 Accounting Principles II <sup>3</sup> or SEVI 20503 Business Foundations	3	
<b>ISYS 21003 Business Information Systems<sup>2</sup></b>	<b>3</b>	
Satisfies General Education Outcome 3.3: ECON 21003 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) <sup>3</sup> or ECON 22003 Principles of Microeconomics (ACTS Equivalency = ECON 2203)	3	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) <sup>3</sup>	3	
Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>5, 6</sup>	3	
Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement) <sup>4</sup>		3
<b>MATH 22003 Survey of Calculus (ACTS Equivalency = MATH 2203)<sup>3</sup></b>		<b>3</b>
3 hours general education elective		3
<b>ISYS 22603 Principles of Information Systems</b>		<b>3</b>
Science - State Minimum Core (Satisfies General Education Outcome 3.4)		4
<b>All pre-business requirements should be met by the end of term</b>		
Year Total:	15	16

**Third Year**

	Units	
	Fall	Spring
<b>FINN 20403 Principles of Finance<sup>2</sup></b>	<b>3</b>	
<b>MKTG 34303 Introduction to Marketing<sup>2</sup></b>	<b>3</b>	
<b>ISYS 32903 Systems Analysis and Design</b>	<b>3</b>	
Junior/Senior Business Electives	3	
Science - State Minimum Core (Satisfies General Education Outcome 3.4)	4	
<b>ISYS 33903 Business Application Development Fundamentals</b>		<b>3</b>
ISYS 42103 ERP Fundamentals		3
SEVI 30103 Strategic Management ((Satisfies General Education Outcome 6.1)		3
Junior/Senior Business Electives		3
U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2)		3
Year Total:	16	15

Fourth Year	Units	
	Fall	Spring
<b>ISYS 42803 Business Database Systems</b>	<b>3</b>	
<b>ISYS 41903 Business Analytics and Visualization</b>	<b>3</b>	
ISYS 43903 Seminar in Applied Business Analytics	3	
Junior/Senior Business Electives	3	
General Education Electives	3	
<b>ISYS 42903 Business Intelligence</b>		<b>3</b>
<b>ISYS 43603 Business Project Development</b>		<b>3</b>
Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) 5, 6		3
General Education Electives		3
Year Total:	15	12
<b>Total Units in Sequence:</b>		<b>120</b>

<sup>1</sup> Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 20503.

<sup>2</sup> Must be completed prior to SEVI 30103.

<sup>3</sup> Must be completed prior to taking any 3000 or 4000 level business courses.

<sup>4</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 10203, HIST 11193, HIST 11293, SOCI 10103, SOCI 101H3, or SOCI 20103.

<sup>5</sup> The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:

ARCH 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 100H3, MUSC 10103, MUSC 101H3, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.

<sup>6</sup> The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:

AAST 20203, ANTH 10303, ARCH 10103, CLST 10003, CLST 100H3, CLST 10103, COMM 12303, DANC 10003, ENGL 12103, GNST 20003, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20003, HIST 20103, HUMN 112H4, HUMN 22103, LALS 20103, MRST 20103, MUSY 20003, MUSY 200H3, PHIL 20003, PHIL 200H3, PHIL 21003, PHIL 23003, THTR 10003, THTR 10103, THTR 101H3, ENGL 11103, ENGL 11203, or intermediate-level world language (usually 2003-level).

## Information Systems Major Requirements

The major in Information Systems requires 27 hours of major in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 30 hours is allowed in the Information Systems major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 27 credit hours. Because of prerequisites, students should allow two full years (24 months) to complete this coursework. Prerequisites are strictly enforced.

## Course Requirements in the Major for All Concentrations 18

ISYS 22603	Principles of Information Systems	
ISYS 32903	Systems Analysis and Design	
ISYS 33903	Business Application Development Fundamentals	
ISYS 42803	Business Database Systems	
ISYS 43603	Business Project Development	
ISYS 42103	ERP Fundamentals	

Note: These required courses represent a common body of knowledge for all information systems majors. Majors must select one of the following concentrations and must complete nine additional hours of coursework in the elected concentration.

Maximum of 30 hours of ISYS courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

<b>Junior/Senior Level Business Electives</b>	<b>9</b>
<b>Concentration Courses</b>	<b>9</b>

<sup>1</sup> CSCE 20004 Programming Foundations I is recommended as a general education elective.

## Enterprise Resource Planning Concentration

ISYS 42203	ERP Configuration and Implementation	3
ISYS 42303	Seminar in ERP Development	3
3 hour 3000/4000 level ISYS or Business Elective		3
<b>Total Hours</b>		<b>9</b>

## Information Systems B.S.B.A. with Enterprise Resource Planning Concentration Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) in the Academic Regulations chapter for university requirements of the program.

Courses in **BOLD** must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

First Year	Units	
	Fall	Spring
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) <sup>3</sup>	3	
<b>MATH 20503 Finite Mathematics (Satisfies General Education Outcome 2.1)<sup>1, 3</sup></b>		<b>3</b>
<b>BUSI 11101 Freshman Business Connection<sup>3</sup></b>		<b>1</b>
<b>SCMT 21003 Integrated Supply Chain Management<sup>2</sup></b>		<b>3</b>
<b>MGMT 21003 Managing People and Organizations<sup>2</sup></b>		<b>3</b>
<b>ISYS 11203 Business Application Knowledge - Computer Competency<sup>3</sup></b>		<b>3</b>
<b>BLAW 20003 The Legal Environment of Business (ACTS Equivalency = BLAW 2003)<sup>2</sup></b>		<b>3</b>

<b>SPCH 10003 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)<sup>3</sup></b>	<b>3</b>	
<b>ACCT 20103 Accounting Principles<sup>3</sup></b>	<b>3</b>	
<b>BUSI 10303 Data Analysis and Interpretation<sup>3</sup></b>	<b>3</b>	
Satisfies General Education Outcome 3.3:		
ECON 22003 Principles of Microeconomics (ACTS Equivalency = ECON 2203) <sup>3</sup>	3	
or ECON 21003 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)		
Year Total:	16	15

<b>Second Year</b>		<b>Units</b>	
	<b>Fall</b>	<b>Spring</b>	
ACCT 20203 Accounting Principles II <sup>3</sup> or SEVI 20503 Business Foundations	3		
<b>ISYS 21003 Business Information Systems<sup>2</sup></b>	<b>3</b>		
Satisfies General Education Outcome 3.3:			
ECON 21003 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) <sup>3</sup>	3		
or ECON 22003 Principles of Microeconomics (ACTS Equivalency = ECON 2203)			
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) <sup>3</sup>	3		
Fine Art/Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>5, 6</sup>	3		
Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) <sup>4</sup>	3		
<b>MATH 22003 Survey of Calculus (ACTS Equivalency = MATH 2203)<sup>3</sup></b>	<b>3</b>		
3 hours general education elective	3		
<b>ISYS 22603 Principles of Information Systems</b>	<b>3</b>		
Science Course State Minimum Core (Satisfies General Education Outcome 3.4)	4		
<b>All pre-business requirements should be met by end of term</b>			
Year Total:	15	16	

<b>Third Year</b>		<b>Units</b>	
	<b>Fall</b>	<b>Spring</b>	
<b>FINN 20403 Principles of Finance<sup>2</sup></b>	<b>3</b>		
<b>MKTG 34303 Introduction to Marketing<sup>2</sup></b>	<b>3</b>		
<b>ISYS 32903 Systems Analysis and Design</b>	<b>3</b>		
Junior Senior Business Electives	3		
Science - State Minimum Core (Satisfies General Education Outcome 3.4)	4		
<b>ISYS 33903 Business Application Development Fundamentals</b>	<b>3</b>		
<b>ISYS 42103 ERP Fundamentals</b>	<b>3</b>		
SEVI 30103 Strategic Management ((Satisfies General Education Outcome 6.1)	3		
Junior Senior Business Electives	3		

U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2)		3
Year Total:	16	15

<b>Fourth Year</b>		<b>Units</b>	
	<b>Fall</b>	<b>Spring</b>	
<b>ISYS 42803 Business Database Systems</b>	<b>3</b>		
<b>ISYS 42203 ERP Configuration and Implementation</b>	<b>3</b>		
Junior Senior Business Electives	3		
3 hour 3000/4000 level ISYS or Business Elective	3		
General Education Electives	3		
<b>ISYS 43603 Business Project Development</b>			<b>3</b>
<b>ISYS 42303 Seminar in ERP Development</b>			<b>3</b>
General Education Electives			3
Fine Arts/Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) <sup>5, 6</sup>			3
Year Total:	15	12	

**Total Units in Sequence: 120**

- <sup>1</sup> Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 20503.
- <sup>2</sup> Must be completed prior to SEVI 30103.
- <sup>3</sup> Must be completed prior to taking any 3000 or 4000 level business courses.
- <sup>4</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 10203, HIST 11193, HIST 11293, SOCI 10103, SOCI 101H3, or SOCI 20103.
- <sup>5</sup> The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include: ARCH 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 100H3, MUSC 10103, MUSC 101H3, MUSC 13303, THTR 10003, THTR 10103, or THTR 101H3.
- <sup>6</sup> The Humanities Elective courses which satisfy the General Education Outcome 3.2 include: AAST 20203, ANTH 10303, ARCH 10103, CLST 10003, CLST 100H3, CLST 10103, COMM 12303, DANC 10003, ENGL 12103, GNST 20003, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20003, HIST 20103, HUMN 112H4, HUMN 22103, LALS 20103, MRST 20103, MUSY 20003, MUSY 200H3, PHIL 20003, PHIL 200H3, PHIL 21003, PHIL 23003, THTR 10003, THTR 10103, THTR 101H3, ENGL 11103, ENGL 11203, or intermediate-level world language (usually 2003-level).

### Business Analytics Minor

The Walton College offers an interdisciplinary minor in Business Analytics. Analytics are currently used by many companies for applications ranging from strategic management of data to day operations to customer insights to retail analytics to developing and maintaining a competitive edge. The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor taken in residence. The 15 hours include:

ISYS 41903	Business Analytics and Visualization	3
ISYS 42903	Business Intelligence	3
ISYS 43903	Seminar in Applied Business Analytics	3
Select two courses (6 hours) from the following:		6
ACCT 35403	Accounting Analytics	
ISYS 42103	ERP Fundamentals	
FINN 30103	Financial Analysis	
ECON 47403	Introduction to Econometrics	
ECON 47503	Forecasting	
MGMT 42403	Ethics and Corporate Responsibility	
MKTG 36303	Marketing Research	
SCMT 36203	PLAN: Inventory and Forecasting Analytics	
<b>Total Hours</b>		<b>15</b>

Students who desire to earn a Business Analytics minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for a minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper division minor requirements must be taken in residence.

## Data and Cybersecurity Management Minor

The Data and Cybersecurity Management minor in the Information Systems Department of the Walton College of Business is designed to develop graduates able to help organizations assess and detect threats while securing and protecting data and data-driven systems against a myriad of threats such as malicious software, hacking, insider threats, and other cybercrimes. Students will also learn and apply best industry practices to minimize data collection, protect client and individual privacy, and otherwise further ethical data management. Students will not only learn about cybersecurity, crime, and privacy law, but will also learn about techniques of risk assessment, continuity planning, and threat detection. This will include learning with respect to behavioral aspects, ethics, legal considerations, and best practices in cyber security management. The minor requires completion of 15 hours of study with all of the upper-level courses applied toward the minor in residence. The 15 hours include the following courses:

Required Core Courses (9 hours)		
ISYS 40103	Principles of Data and Cybersecurity	3
ISYS 40203	Network and Data Security in a Changing World	3
ISYS 40403	Cybersecurity, Crime and Data Privacy Law Fundamentals	3
Choose six hours from the following:		6
ISYS 32703	Cryptocurrency	
ISYS 40303	Advanced Information Security Management	
ISYS 40503	Advanced Cybersecurity, Crime and Privacy Law	
ISYS 41703	Blockchain Fundamentals	
MGMT 42403	Ethics and Corporate Responsibility	
<b>Total Hours</b>		<b>15</b>

Students who desire to earn a Data and Cybersecurity Management minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree.

All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

## Information Systems Minor for Business Students

The Department of Information Systems offers a minor for Walton College students desiring more knowledge of information systems to assist them in their careers. The minor requires completion of 15 hours of study with all of the upper level courses applied toward the minor in residence. The 15 hours include the following courses:

ISYS 22603	Principles of Information Systems	3
ISYS 32903	Systems Analysis and Design	3
ISYS 33903	Business Application Development Fundamentals	3
ISYS 42103	ERP Fundamentals	3
Select one of the following:		3
ISYS 42203	ERP Configuration and Implementation	
Any 3-hour Junior/Senior level ISYS course		
<b>Total Hours</b>		<b>15</b>

Students who desire to earn an Information Systems minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

## Certificate of Proficiency in Cybersecurity and Data Management

Students pursuing the Certificate of Proficiency in Cybersecurity and Data Management Program in the Information Systems Department of the Sam M. Walton College of Business must meet the admission requirements for the University of Arkansas and have completed the following courses (or equivalent): ISYS 11203, ECON 21403, ACCT 20103, and BUSI 10303

Required Core Courses (3 hours)		
ISYS 40103	Principles of Data and Cybersecurity	3
ISYS 40203	Network and Data Security in a Changing World	3
ISYS 40403	Cybersecurity, Crime and Data Privacy Law Fundamentals	3
Elective Courses		6
ISYS 40303	Advanced Information Security Management	
ISYS 40503	Advanced Cybersecurity, Crime and Privacy Law	
ISYS 41703	Blockchain Fundamentals	
ISYS 32703	Cryptocurrency	
MGMT 42403	Ethics and Corporate Responsibility	
<b>Total Hours</b>		<b>15</b>

All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the certificate. All upper-division certificate requirements must be taken in residence.

## Undergraduate Microcertificates

The undergraduate microcertificates in Information Systems are credentials designed to provide undergraduate business students with a microcertificate in specific IS knowledge areas – Business Analytics, Blockchain, Enterprise Resource Planning (ERP), and Business

Cybersecurity. The demand for skilled professionals in information systems continues to outpace the supply of qualified applicants. Each nine-hour microcertificate program is open to individuals with backgrounds in any business discipline.

## Blockchain Undergraduate MicroCertificate

Requirements: To receive the undergraduate Blockchain MicroCertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course.

### Required Courses

ISYS 41703	Blockchain Fundamentals	3
------------	-------------------------	---

**Select both courses from the following:** 6

ISYS 44503	Introduction to Blockchain Applications	
ISYS 44603	Blockchain Enterprise Systems Development	

**Or, one from above and one of the following:**

ISYS 32703	Cryptocurrency	
ISYS 40103	Principles of Data and Cybersecurity	
ISYS 42103	ERP Fundamentals	

**Total Hours** 9

## Business Analytics Undergraduate MicroCertificate

Requirements: To receive the undergraduate Business Analytics MicroCertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course.

### Required Courses

ISYS 41903	Business Analytics and Visualization	3
ISYS 42903	Business Intelligence	3

**Select one of the following:** 3

ISYS 40103	Principles of Data and Cybersecurity	
ISYS 41703	Blockchain Fundamentals	
ISYS 42103	ERP Fundamentals	
ISYS 43903	Seminar in Applied Business Analytics	

**Total Hours** 9

## Business Cybersecurity Undergraduate MicroCertificate

To receive the undergraduate Business Cybersecurity MicroCertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course:

### Required Courses

ISYS 40103	Principles of Data and Cybersecurity	3
ISYS 40203	Network and Data Security in a Changing World	3

**Select one course from the following:** 3

ISYS 40303	Advanced Information Security Management	
ISYS 40403	Cybersecurity, Crime and Data Privacy Law Fundamentals	
ISYS 41703	Blockchain Fundamentals	
ISYS 42103	ERP Fundamentals	

**Total Hours** 9

The undergraduate microcertificates in the Information Systems are credentials designed to provide undergraduate business students with MicroCertificate in specific IS knowledge areas — Business Analytics, Blockchain, Enterprise Resource Planning (ERP), and Business Cybersecurity. The demand for skilled professionals in information systems continues to outpace the supply of qualified applicants. Each 9-hour microcertificate program is open to individuals with backgrounds in any business discipline.

## Enterprise Resource Planning Undergraduate Microcertificate: (9 hours)

Requirements: To receive the undergraduate ERP Microcertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course.

### Required Courses

ISYS 42103	ERP Fundamentals	3
------------	------------------	---

**Select both of the following:** 6

ISYS 42203	ERP Configuration and Implementation	
ISYS 42303	Seminar in ERP Development	

**Or, one from above and one of the following:**

ISYS 40103	Principles of Data and Cybersecurity	
ISYS 41703	Blockchain Fundamentals	

**Total Hours** 9

## Faculty

**Anand, Abhijith**, Ph.D. (University of Waikato), M.I.S. (University of Wollongong), B.E. (K.S. Institute of Technology), Assistant Professor, 2017.

**Bristow, Susan E.**, Ed.D., M.B.A., B.S.B.A. (University of Arkansas), Teaching Associate Professor, 1997, 2020.

**Conway, Daniel**, Ph.D., M.A. (Indiana University), B.A. (Augustana College), Teaching Professor, 2019.

**Cronan, Timothy P.**, Ph.D. (Louisiana Tech University), M.S. (South Dakota State University), B.S. (University of Southwestern Louisiana), Professor, M.D. Matthews Endowed Chair in Information Systems, 1979.

**Davis, EmmaLe**, Ph.D. (University of Arkansas), M.Ed., B.S. (University of Oklahoma), Teaching Assistant Professor, 2022.

**Dereszynski, Michael**, M.I.S. (University of Arkansas), B.S. (Milwaukee School of Engineering), Instructor, 2019.

**Freeze, Ron**, Ph.D. (Arizona State University), M.B.A. (University of Missouri–Kansas City), B.S. (General Motors Institute), Clinical Professor, 2015, 2021.

**Gastineau, Jana**, M.S., B.S. (Arkansas State University), Instructor, 2022.

**Grover, Varun**, Ph.D. (University of Pittsburg), M.B.A. (Southern Illinois University), B.S. (Indian Institute of Technology), Distinguished Professor, David D. Glass Chair in Information Systems, 2017.

**Harmon, Kevin**, Ph.D., M.B.A., M.S. (Texas Tech University), B.S. (Truman State University), Assistant Professor, 2022.

**Hoehle, Hartmut**, Ph.D., B.Com. (Victoria University of Wellington), Visiting Professor, 2013, 2022.

**Kapoor, Gaurav**, Ph.D. (University of Florida), M.S. (Drexel University), B.E. (University of Mumbai), Teaching Assistant Professor, 2023.

**Keiffer, Elizabeth**, Ph.D., M.A. (University of Arkansas), B.S. (East Central University), Teaching Assistant Professor, 2016, 2019.

**Lacity, Mary**, Ph.D. (University of Houston), B.S.B.A. (Pennsylvania State University), Distinguished Professor, David D. Glass Chair in Information Systems, 2018, 2022.

**Liu, Yanran**, Ph.D. (Georgia State University), M.M., B.Mgt. (China University of Geosciences), Visiting Assistant Professor, 2021.

**Mallampalli, Kamesh**, Ph.D. (University of Georgia), M.M. (Indian Institute of Management), B.S. (University of Delhi), Visiting Assistant Professor, 2022.

**Mullins, Jeff**, Ph.D., M.A., B.S. (University of Arkansas), Assistant Professor, 2006, 2018.

**Nolan, Steve**, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Westminster College), Instructor, 2017.

**Pierce, Lisa**, M.S. (University of Georgia), B.S. (University of Tennessee), Instructor, 2014.

**Sabherwal, Rajiv**, Ph.D. (University of Pittsburgh), P.G.D.M. (Indian Institute of Management), B.S.E.E. (Regional Engineering College, India), Distinguished Professor, Edwin and Karlee Bradberry Chair, 2011, 2019.

**Shook, Carole**, M.S.B.A., B.S.B.A. (University of Arkansas), Teaching Associate Professor, 1999, 2023.

**Steelman, Zachary R.**, Ph.D., M.I.S. (University of Arkansas), B.B.A. (Northeastern State University), Associate Professor, 2017, 2022.

**Sykes, Tracy Ann**, Ph.D. (University of Arkansas), B.S. (University of Maryland-College Park), Associate Professor, 2011, 2016.

**Syler, Rhonda A.**, Ph.D. (Auburn University), M.B.A. (Columbus State University), M.S. (Kansas State University), B.S. (Middle Tennessee State University), Teaching Assistant Professor, 2016.

**Weng, Qin**, Ph.D. (University of Pittsburgh), M.S. (Virginia Commonwealth University), B.A. (Beijing Foreign Studies University), Assistant Professor, 2018.

**Young, Amber**, Ph.D. (University of Oklahoma), M.B.A. (Oklahoma Christian University), B.S.Ed. (University of Oklahoma), Associate Professor, 2018, 2023.

## Courses

### ISYS 11203. Business Application Knowledge - Computer Competency. 3 Hours.

An introduction to computer literacy using information business application software; email/Internet; word processing; spreadsheets; presentation; database; collaborative/groupware; and integration of computer applications. Introduces the student to computer Concepts and Microsoft Office (Word, Excel, Windows, and PowerPoint) to manage finances, work with formulas, charts and graphics, and the development of professional worksheets and presentations. Students learn business computing through appropriate self-paced, computer-based instruction. (Typically offered: Fall, Spring and Summer)

### ISYS 20001. Principles of Business Application Development. 1 Hour.

An introduction to the principles of business application development and the development process for business applications using a current high level languages such as Python, Swift, etc. Discussions include topics such as development teams, project management, design thinking, coding, and entrepreneurship; essential skill sets for future leaders. Students learn about coding using languages such as Python and Swift while developing their own applications. (Typically offered: Fall and Spring)

### ISYS 21003. Business Information Systems. 3 Hours.

This course presents the fundamentals of business information systems (IS) topics essential to today's business graduate. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. The broad objective of this course is to present students with a business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology. Prerequisite: BUSI 10303, ACCT 20103 and (ECON 21003 or ECON 22003), all with a grade of C or better. (Typically offered: Fall, Spring and Summer)

### ISYS 210H3. Honors Business Information Systems. 3 Hours.

This course presents the fundamentals of business information systems (IS) topics essential to today's business graduate. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. The broad objective of this course is to present students with a business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology. Prerequisite: BUSI 10303, ACCT 20103 and (ECON 21003 or ECON 22003), all with a grade of C or better and honors standing. (Typically offered: Fall, Spring and Summer)

This course is equivalent to ISYS 21003.

### ISYS 22603. Principles of Information Systems. 3 Hours.

This course presents the fundamental concepts used in developing information systems. It provides a framework for students to use throughout their software development coursework. Also includes management of information systems concepts. This course requires extensive use of computer systems. Prerequisite: ACCT 20103, MATH 20503 and ISYS 21003, each with a grade of C or better. (Typically offered: Fall and Spring)

### ISYS 32703. Cryptocurrency. 3 Hours.

This course will focus on topics such as a brief history of money, Bitcoin and the origin of cryptocurrency, blockchain system fundamentals (cryptography and consensus algorithms), real-world application with software clients and wallets, as well as assessing the current regulatory environment, financial applications and exchanges. Upon completion, students will understand what constitutes as digital money and how this phenomenon is currently transpiring within an economic, legal, and financial context; will be prepared to learn more about specific financial industry applications; make judgements on viability of certain crypto projects; and speak to challenges facing the future of cryptocurrency. Prerequisite: ISYS 21003 and ACCT 20103, each with a grade of C or better. (Typically offered: Fall and Spring)

### ISYS 32803. Opportunities, Risks and Ethics in the Metaverse. 3 Hours.

Exploration of different metaverse platforms as well as develop and deliver a team experience in a metaverse and make recommendations pertaining to the opportunities, risks, and ethical guard rails. Prerequisite: Business Majors and Junior standing. (Typically offered: Fall and Spring)

### ISYS 32903. Systems Analysis and Design. 3 Hours.

Practice and application of one structured analysis methodology; development of structured analysis specification; exposure to other methodologies; quality assurance and walkthroughs; survey of real systems and their components. Prerequisite: ISYS 22603 or CSCE 20104 with a grade of C or better. (Typically offered: Fall and Spring)

### ISYS 33903. Business Application Development Fundamentals. 3 Hours.

Principles of design and development of windows and web applications using cutting edge visual development tools. The programming language will be a modern language used widely in industry, and the focus will be on its use in client-server, web, and/or mobile applications. Pre- or Corequisite: ISYS 32903. Prerequisite: ISYS 22603 or CSCE 20104 with a grade of "C" or better. (Typically offered: Fall and Spring)

### ISYS 400H3. Honors Information Systems Colloquium. 3 Hours.

Explores events, concepts and/or new developments in the field of Computer Information Systems and Quantitative Analysis. Prerequisite: Senior standing and honors standing. (Typically offered: Fall)



**ISYS 40103. Principles of Data and Cybersecurity. 3 Hours.**

This course provides students with insight into the cybersecurity and data issues surrounding businesses; fundamental concepts of the study of law - enabling students to understand the basics of reading and briefing a case as well as the process of legal analysis and case procedure and discovery; securing organizational data; detecting and responding to cyber-based security breaches; emerging technologies, and ensuring a secured computing environment for safeguarding company information will be explored. Prerequisite: ACCT 20103. (Typically offered: Fall and Spring)

**ISYS 40203. Network and Data Security in a Changing World. 3 Hours.**

This course explores network and data security in the context of today's digital enterprise. In addition to traditional network protocol and security issues, this course will explore security issues unique to cloud environments, data protection, IoT ecosystems, ERP systems, and Blockchain deployments. Prerequisite: ISYS 40103 with a grade of C or better. (Typically offered: Fall and Spring)

**ISYS 40303. Advanced Information Security Management. 3 Hours.**

This course provides students with an in-depth, advanced understanding of cybersecurity and data management. Topics include risk assessment, continuity planning, data protection, threat detection, threat/risk mitigation, and recovery issues and techniques. Current topics in data and cybersecurity will also be included. Prerequisite: ISYS 40203 with a grade of C or better. (Typically offered: Fall and Spring)

**ISYS 40403. Cybersecurity, Crime and Data Privacy Law Fundamentals. 3 Hours.**

This course examines the law governing computer crime, data privacy, and cybersecurity. Substantive crimes such as hacking, identity theft, economic espionage, and online threats are discussed. The Fourth Amendment, Privacy, the Wiretap Act, and other limits on law enforcement that might affect private industry developing surveillance tools used by governments are examined. Prerequisite: ISYS 40103. (Typically offered: Fall and Spring)

**ISYS 40503. Advanced Cybersecurity, Crime and Privacy Law. 3 Hours.**

The course will explore best practices for data privacy and security protection measures, mitigation techniques for privacy and security threats, and privacy and security law. The importance of informational privacy will be highlight and a high-level overview of U.S. laws and regulations including FTC roles, and government surveillance will be provided. Prerequisite: ISYS 40203 and ISYS 40403. (Typically offered: Fall and Spring)

**ISYS 41703. Blockchain Fundamentals. 3 Hours.**

This course provides the fundamental concepts underpinning blockchain technologies. This course focuses on blockchain applications for business. Students will learn about the overall blockchain landscape, including the investments, the size of markets, major players and the global reach, as well as the potential business value of blockchain applications and the challenges that must be overcome to achieve that value. Students will learn enough about the underlying technologies to be well-prepared to develop blockchain applications in future courses. Prerequisite: Walton College Majors: ISYS 21003 and ACCT 20103 each with a grade of C or better; Non-Business Majors: ACCT 20103 and (CSCE 20004 or DASC 12004) each with a grade of C or better. (Typically offered: Fall and Spring)

**ISYS 41903. Business Analytics and Visualization. 3 Hours.**

Introductory study of business analytics, visualization, and systems to provide analytics-based information derived from data within and/or external to the organization. Business analytics used to support management in the decision making. Application of tools in business analytics, problem solving, visualization, and decision making. Prerequisite: Walton College Majors: BUSI 10303 with a grade of C or better; Non-Business Majors: INEG 23104 or STAT 30133 or MATH 21003 each with a grade of C or better. (Typically offered: Fall)

**ISYS 42103. ERP Fundamentals. 3 Hours.**

An introduction to enterprise resource planning systems. Students should gain an understanding of the scope of these integrated systems that reach across organizational boundaries and can change how a company does business. Implementation issues are covered, including the importance of change management. Prerequisite: Walton College Majors: ISYS 21003 and ACCT 20103 each with a grade of C or better; Non-Business Majors: ACCT 20103 and (CSCE 20004 or DASC 12004) each with a grade of C or better. (Typically offered: Fall and Spring)

**ISYS 42203. ERP Configuration and Implementation. 3 Hours.**

The process of configuring and implementing an enterprise resource planning system. Business process analysis and integration. Students will develop and set up several modules in an ERP system for use in an organization. Develop understanding of how the business processes work and integrate. Prerequisite: ISYS 42103 with a grade of "C" or better. (Typically offered: Fall)

**ISYS 42303. Seminar in ERP Development. 3 Hours.**

ERP administration and system development practices. Advanced system support issues related to Enterprise Resource Planning systems that are used in global organizations. Basic ABAP programming. In addition, students will learn how to provide basic systems administration support of the operating system, database, and application systems software levels or ERP systems. Pre- or Corequisite: ISYS 42203 with a grade of "C" or better. (Typically offered: Spring)

**ISYS 42403. Current Topics in Computer Information. 3 Hours.**

Intensive investigation of selected developments in computer information systems hardware, software, and organization having current impact on computer information systems design and application. Offering an extension of lower-level CIS courses through individual student research and faculty team-teaching of advanced topics. Topical selection made with each course offering. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

**ISYS 42803. Business Database Systems. 3 Hours.**

Introduces student to centralized information system design and implementation for business applications. In-depth study of logical systems modeling; physical file management; and software requirements. Pre- or Corequisite: ISYS 33903. Prerequisite: ISYS 32903 with a grade of C or better. (Typically offered: Fall)

**ISYS 42903. Business Intelligence. 3 Hours.**

Business intelligence focuses on creating, developing and storing information and knowledge from internal and external sources to better support business decisions. We will consider techniques from machine learning, data mining, and information retrieval to extract useful knowledge from data, which could be used for business intelligence, personalization or user profiling. Prerequisite: ISYS 41903 with a grade of "C" or better. (Typically offered: Spring)

**ISYS 43103. Artificial Intelligence and Tech Ethics. 3 Hours.**

Exploration and understanding of artificial intelligence and its use in business with hands-on activities using AI tools. Students will develop an understanding of technology ethics and ethical frameworks to be able to audit and assess the performance of technologies and algorithms, and knowledge of the range of AI technologies and their use cases. Prerequisite: Business Majors and Junior standing. (Typically offered: Fall and Spring)

**ISYS 43203. Infrastructure and Digital Innovation. 3 Hours.**

The aim of this course is to expose business students with the ever evolving environment of modern software development, infrastructure, and digital innovations. Using a hands-on approach to exploring modern software development tools and techniques students will learn how to conceptualize, design, and implement software product prototypes using a variety of emerging technologies. Students will gain understanding of how to evaluate digital innovations for inclusion into an ever-evolving software development environment to help accelerate development. Skills will focus on providing students the ability to quickly design and implement functional prototypes for business use-cases while exploring the introduction of innovations in the market. Prerequisite: ISYS 43103. (Typically offered: Fall and Spring)

**ISYS 43603. Business Project Development. 3 Hours.**

Review of fundamentals of application processing systems design and development; implementation of such a system by class. Prerequisite: ISYS 33903 and ISYS 42803 each with a grade of C or better. (Typically offered: Spring)

**ISYS 43903. Seminar in Applied Business Analytics. 3 Hours.**

Application of business analytics, business intelligence, data mining, and data visualization to business problem solving. Business Analytics techniques using current and relevant software are applied to current business problems for presentation to management. Prerequisite: ISYS 42903. (Typically offered: Fall and Spring)

**ISYS 44503. Introduction to Blockchain Applications. 3 Hours.**

The focus of this course is to expose students to working with mainframe computer systems, large-scale data, and blockchain software & technologies. This course provides the opportunity for students to gain valuable insight into mainframe coding concepts, SQL, and data in a mainframe operating environment. Prerequisite: ISYS 41703. (Typically offered: Fall)

**ISYS 44603. Blockchain Enterprise Systems Development. 3 Hours.**

Accurately capturing and storing business transactions is an important processing function in many businesses. This course provides students with the necessary understanding and skills to develop blockchain and other large-scale data applications in a mainframe environment with high volume. Prerequisite: ISYS 44503 with a grade of "C" or better. (Typically offered: Spring)

**ISYS 4500V. Independent Study. 1-3 Hour.**

Permits students on individual basis to explore selected topics in data processing and/or Quantitative Analysis. (Typically offered: Fall and Spring)