



Jack H. Brown College  
Business and Public Administration

**THE JACK H. BROWN COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION**  
**DEGREE REQUIREMENTS - BACHELOR OF SCIENCE, INFORMATION SYSTEMS & TECHNOLOGY**  
**BUSINESS INTELLIGENCE & ANALYTICS CONCENTRATION**

2020-2021

General Education Program (48 Units)	Units	BS - IST Major Requirements (67 Units)	Units
<b>Category A - University Foundations</b>	<b>9</b>	<b>Lower-Division Core Requirements</b>	<b>25</b>
___ 1. Oral Communication ( <b>COMM 1006</b> )	3	___ ADMN 2100 Applied Business Statistics	3
___ 2. Written Communication	3	___ MGMT 2300 Legal Environment of Organizations	3
___ 3. Critical Thinking	3	___ IST 1110 Introduction to Information Technology	1
<b>Category B - Disciplinary Perspectives - Scientific Inquiry</b>	<b>13</b>	___ IST 2210 Computer Networks and Security (Prerequisite: IST 1110)	3
___ 1. Physical Science	3	___ IST 2310 Applications Development (Prerequisite: IST 1110)	3
___ 2. Life Science	3	___ IST2410 Database Management for Business (Prerequisite: IST 1110)	3
___ 3. Laboratory Activity	1	___ IST 2510 Big Data Analysis (Prerequisite: ADMN 2100)	3
___ 4. Mathematics/Quantitative Reasoning ( <b>MATH 1301</b> )	3	___ IST 2610 Cybersecurity (Prerequisite: IST 1110)	3
___ 5. Upper Division Scientific Inquiry (Jr. & Sr. Level Course)	3	___ 3 units chosen from the following (also satisfies GE, B4):	3
<b>Category C - Disciplinary Perspectives - Arts and Humanities</b>	<b>12</b>	<b>MATH 1301, MATH 1401, MATH 1601, MATH 2210</b>	
___ 1. Arts	3	<b>Upper-Division Core Requirements</b>	<b>24</b>
___ 2. Humanities	3	___ IST 3110 Management of Information Technology (Prerequisite: IST 1110)	3
___ 3. Arts or Humanities (Additional course from C1 or C2)	3	___ IST 3420 Systems Analysis and Design (Prerequisite: IST 1110)	3
___ 4. Upper Division Arts or Humanities (Jr. & Sr. Level Course)	3	___ IST 4210 Advanced Computer Networks (Prerequisites: IST 2210 and IST 3110)	3
<b>Category D - Disciplinary Perspectives - Social Sciences</b>	<b>12</b>	___ IST 4310 Web Technologies (Prerequisite: IST 2310)	3
___ 1. American Government ( <b>PSCI 2030</b> )	3	___ IST 4910 Enterprise System Administration (Prerequisite: IST 4210)	3
___ 2. U.S. History	3	___ IST 5150 Project Management	3
___ 3. Social Science Discipline Perspectives	3	___ MGMT 3500 Applied Communication	3
___ 4. Upper Division Social Sciences	3	___ Three units taken in any JHBC 3000-5000 level course	3
<b>Category E - University Foundations</b>	<b>3</b>	<b>Concentration Requirements (A grade of "C" or better is required in all concentration courses)</b>	<b>18</b>
___ 1. Foundation Seminar	3	___ IST 3500 Problem Solving and Decision Making (Prerequisite: ADMN 2100)	3
		___ IST 4510 Advanced Data Analytics (Prerequisite: IST 2510)	3
		___ IST 4520 Data Mining (Prerequisite: IST 2510)	3
		___ Nine units (3 courses) chosen from:	9
		___ IST 3050, 4320, 4410, 5050, 5250, 5930, 5951, 5952, 5953; ADMN 5753, GEOG 5303, SCM 3040	
<b>Note:</b> Requirements for general education, required core and concentration courses, may not total 120 units. Free electives may be required to make up the difference.			

*Bachelor of Science, Information Systems & Technology*  
**INTELLIGENCE & ANALYTICS CONCENTRATION**  
 4- Year Roadmap

<b>Year 1: Freshman (0 - 29.9 units earned)</b>			
<b>Fall Semester</b>		<b>Spring Semester</b>	
Course	Units	Course	Units
<input type="checkbox"/> (GE) A2 - ENG - English	3	<input type="checkbox"/> (GE) B4 - <b>MATH 1301</b>	3
<input type="checkbox"/> (GE) A3 - Critical Thinking	3	<input type="checkbox"/> <b>IST 1110</b> - Intro to Information Tech.	1
<input type="checkbox"/> <b>ADMN 2100</b> - Applied Bus. Statistics	3	<input type="checkbox"/> (GE) B2 - Life Science	3
<input type="checkbox"/> (GE) E - Foundation Seminar	3	<input type="checkbox"/> (GE) A1 - <b>COMM 1006</b>	3
<input type="checkbox"/> (GE) C2 - Humanities	3	<input type="checkbox"/> (GE) C1 - Arts	3
<input type="checkbox"/> (GE) B3 - Lab/Activity	1	<input type="checkbox"/> (GE) D2 - U.S. History	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>16</b>

<b>Year 2: Sophomore (30 - 59.9 units earned)</b>			
<b>Fall Semester</b>		<b>Spring Semester</b>	
Course	Units	Course	Units
<input type="checkbox"/> (GE) C3 - C1 or C2 - Arts/Humanities	3	<input type="checkbox"/> (GE) D1 - <b>PSCI 2030</b>	3
<input type="checkbox"/> <b>IST 2210</b> - Computer Networks & Sec.	3	<input type="checkbox"/> <b>IST 2310</b> - Applications Development	3
<input type="checkbox"/> (GE) D3 - Social Science Discipline Persp.	3	<input type="checkbox"/> <b>IST 2410</b> - Database Mgmt. for Business	3
<input type="checkbox"/> <b>MGMT 2300</b> - Legal Environment of Bus.	3	<input type="checkbox"/> (GE) D2 - U.S. History	3
<input type="checkbox"/> (GE) B1 - Physical Science	3	<input type="checkbox"/> <b>IST 2510</b> - Big Data Analysis	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

<b>Year 3: Junior (60 - 89.9 units earned)</b>			
<b>Fall Semester</b>		<b>Spring Semester</b>	
Course	Units	Course	Units
<input type="checkbox"/> Free Elective	3	<input type="checkbox"/> (GE) C4 - UD Arts or Humanities	3
<input type="checkbox"/> <b>IST 3110</b> - Mgmt. of Information Tech.	3	<input type="checkbox"/> <b>MGMT 3500</b> - Applied Communication	3
<input type="checkbox"/> <b>IST 2610</b> - Cybersecurity	3	<input type="checkbox"/> <b>IST 5150</b> - Project Management	3
<input type="checkbox"/> <b>IST 3500*</b> - Problem Solving & Dec. Making	3	<input type="checkbox"/> <b>IST 4510</b> - Advanced Data Analytics	3
<input type="checkbox"/> JHBC 3000-5000 level course	3	<input type="checkbox"/> Concentration Elective Course	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

<b>Year 4: Senior (90 - 120 units earned)</b>			
<b>Fall Semester</b>		<b>Spring Semester</b>	
Course	Units	Course	Units
<input type="checkbox"/> <b>IST 4210</b> - Advanced Computer Net.	3	<input type="checkbox"/> <b>IST 4910</b> - Enterprise System Admin.	3
<input type="checkbox"/> <b>IST 4310</b> - Web Technologies	3	<input type="checkbox"/> Concentration Elective Course	3
<input type="checkbox"/> (GE) D4 - Upper Division Social Sciences	3	<input type="checkbox"/> Concentration Elective Course	3
<input type="checkbox"/> <b>IST 3420</b> - Systems Analysis & Design	3	<input type="checkbox"/> (GE) B5 - UD Scientific Inquiry	3
<input type="checkbox"/> <b>IST 4520</b> - Data Mining	3	<input type="checkbox"/> Free Elective	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

*\*Also offered as SCM 3500*

(GE) = General Education Course

(UD) = Upper Division (Jr./Sr. Level)

Degree Total Units 120

*Use the roadmap in conjunction with the PAWS report to identify specific courses in each category*



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**THE JACK H. BROWN COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION**  
**DEGREE REQUIREMENTS - BACHELOR OF SCIENCE, INFORMATION SYSTEMS & TECHNOLOGY**  
**NATIONAL SECURITY CONCENTRATION**

2020-2021

General Education Program (48 Units)		Units	BS - IST Major Requirements (67 Units)		Units
<b>Category A - University Foundations</b>		<b>9</b>	<b>Lower-Division Core Requirements</b>		<b>25</b>
___ 1. Oral Communication ( <b>COMM 1006</b> )	3	___ ADMN 2100	Applied Business Statistics	3	
___ 2. Written Communication	3	___ MGMT 2300	Legal Environment of Organizations	3	
___ 3. Critical Thinking	3	___ IST 1110	Introduction to Information Technology	1	
<b>Category B - Disciplinary Perspectives - Scientific Inquiry</b>		<b>13</b>	___ IST 2210	Computer Networks and Security	3
___ 1. Physical Science	3	___ IST 2310	Applications Development	3	
___ 2. Life Science	3	___ IST2410	Database Management for Business	3	
___ 3. Laboratory Activity	1	___ IST 2510	Big Data Analysis	3	
___ 4. Mathematics/Quantitative Reasoning ( <b>MATH 1301</b> )	3	___ IST 2610	Cybersecurity	3	
___ 5. Upper Division Scientific Inquiry (Jr. & Sr. Level Course)	3	3 units chosen from the following (also satisfies GE, B4):		3	
<b>Category C - Disciplinary Perspectives - Arts and Humanities</b>		<b>12</b>	<b>MATH 1301, MATH 1401, MATH 1601, MATH 2210</b>		
___ 1. Arts	3	<b>Upper-Division Core Requirements</b>		<b>24</b>	
___ 2. Humanities	3	___ IST 3110	Management of Information Technology (Prerequisite: IST 1110)	3	
___ 3. Arts or Humanities (Additional course from C1 or C2)	3	___ IST 3420	Systems Analysis and Design (Prerequisite: IST 1110)	3	
___ 4. Upper Division Arts or Humanities (Jr. & Sr. Level Course)	3	___ IST 4210	Advanced Computer Networks (Prerequisites: IST 2210 and IST 3110)	3	
<b>Category D - Disciplinary Perspectives - Social Sciences</b>		<b>12</b>	___ IST 4310	Web Technologies (Prerequisite: IST 2310)	3
___ 1. American Government ( <b>PSCI 2030</b> )	3	___ IST 4910	Enterprise System Administration (Prerequisite: IST 4210)	3	
___ 2. U.S. History	3	___ IST 5150	Project Management	3	
___ 3. Social Science Discipline Perspectives	3	___ MGMT 3500	Applied Communication	3	
___ 4. Upper Division Social Sciences	3	Three units taken in any JHBC 3000-5000 level course		3	
<b>Category E - University Foundations</b>		<b>3</b>	<b>Concentration Requirements</b> ( <i>A grade of "C" or better is required in all concentration courses</i> )		<b>18</b>
___ 1. Foundation Seminar	3	___ IST 4610	Cybersecurity Management (Prerequisite: IST 2610)	3	
<b>Note:</b> Requirements for general education, required core and concentration courses, may not total 120 units. Free electives may be required to make up the difference.		___ IST 4620	Penetration Testing and Etchical Hacking (Prerequisites: IST 2610 and IST 2210)	3	
		___ IST 5250	Incident Handling and Cyber Investigation (Prerequisite: IST 2610)	3	
		___ PSCI 3250	American Foreign Policy	3	
		___ PSCI 4840	National Security Policy	3	
		___ PSCI 5900	Seminar in International Relations	3	

Bachelor of Science, Information Systems & Technology

**NATIONAL SECURITY CONCENTRATION**

4- Year Roadmap

**Year 1: Freshman (0 - 29.9 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> (GE) A2 - ENG - English	3	<input type="checkbox"/> (GE) B4 - <b>MATH 1301</b>	3
<input type="checkbox"/> (GE) A3 - Critical Thinking	3	<input type="checkbox"/> <b>IST 1110</b> - Intro to Information Tech.	1
<input type="checkbox"/> <b>ADMN 2100</b> - Applied Bus. Statistics	3	<input type="checkbox"/> (GE) B2 - Life Science	3
<input type="checkbox"/> (GE) E - Foundation Seminar	3	<input type="checkbox"/> (GE) A1 - <b>COMM 1006</b>	3
<input type="checkbox"/> (GE) C2 - Humanities	3	<input type="checkbox"/> (GE) C1 - Arts	3
<input type="checkbox"/> (GE) B3 - Lab/Activity	1	<input type="checkbox"/> (GE) D2 - U.S. History	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>16</b>

**Year 2: Sophomore (30 - 59.9 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> (GE) C3 - C1 or C2 - Arts/Humanities	3	<input type="checkbox"/> (GE) D1 - <b>PSCI 2030</b>	3
<input type="checkbox"/> <b>IST 2210</b> - Computer Networks & Sec.	3	<input type="checkbox"/> <b>IST 2310</b> - Applications Development	3
<input type="checkbox"/> (GE) D3 - Social Science Discipline Persp.	3	<input type="checkbox"/> <b>IST 2410</b> - Database Mgmt. for Business	3
<input type="checkbox"/> <b>MGMT 2300</b> - Legal Environment of Bus.	3	<input type="checkbox"/> (GE) D2 - U.S. History	3
<input type="checkbox"/> (GE) B1 - Physical Science	3	<input type="checkbox"/> <b>IST 2510</b> - Big Data Analysis	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

**Year 3: Junior (60 - 89.9 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> <b>IST 2610</b> - Cybersecurity	3	<input type="checkbox"/> <b>IST 4610</b> - Cybersecurity Management	3
<input type="checkbox"/> <b>IST 3110</b> - Mgmt. of Information Tech.	3	<input type="checkbox"/> JHBC 3000-5000 level course	3
<input type="checkbox"/> <b>PSCI 3250</b> - American Foreign Policy	3	<input type="checkbox"/> <b>IST 5150</b> - Project Management	3
<input type="checkbox"/> (GE) C4 - UD Arts or Humanities	3	<input type="checkbox"/> Free Elective Course	3
<input type="checkbox"/> <b>MGMT 3500</b> - Applied Communication	3	<input type="checkbox"/> <b>PSCI 4840</b> - National Security Policy	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

**Year 4: Senior (90 - 120 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> <b>IST 4210</b> - Advanced Computer Networking	3	<input type="checkbox"/> <b>IST 4910</b> - Enterprise System Administration	3
<input type="checkbox"/> <b>IST 5250</b> - Incident Handling & Cyber Investigation	3	<input type="checkbox"/> <b>IST 4310</b> - Web Technologies	3
<input type="checkbox"/> <b>PSCI 5900</b> - Seminar in International Relations	3	<input type="checkbox"/> (GE) D4 - Upper Division Social Sciences	3
<input type="checkbox"/> <b>IST 3420</b> - Systems Analysis & Design	3	<input type="checkbox"/> (GE) B5 - UD Scientific Inquiry	3
<input type="checkbox"/> Free Elective Course	3	<input type="checkbox"/> <b>IST 4620</b> - Penetration Testing & Ethical Hacking	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>
		<b>Degree Total Units</b>	<b>120</b>

(GE) = General Education Course  
 (UD) = Upper Division (Jr./Sr. Level)

Use the roadmap in conjunction with the PAWS report to identify specific courses in each category



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**CYBER SECURITY CONCENTRATION**

2020-2021

General Education Program (48 Units)		Units	BS - IST Major Requirements (67 Units)		Units
<b>Category A - University Foundations</b>		<b>9</b>	<b>Lower-Division Core Requirements</b>		<b>25</b>
___ 1. Oral Communication ( <b>COMM 1006</b> )	3	___ ADMN 2100	Applied Business Statistics	3	
___ 2. Written Communication	3	___ MGMT 2300	Legal Environment of Organizations	3	
___ 3. Critical Thinking	3	___ IST 1110	Introduction to Information Technology	1	
<b>Category B - Disciplinary Perspectives - Scientific Inquiry</b>		<b>13</b>	___ IST 2210	Computer Networks and Security	3
___ 1. Physical Science	3	___ IST 2310	Applications Development	3	
___ 2. Life Science	3	___ IST2410	Database Management for Business	3	
___ 3. Laboratory Activity	1	___ IST 2510	Big Data Analysis	3	
___ 4. Mathematics/Quantitative Reasoning ( <b>MATH 1301</b> )	3	___ IST 2610	Cybersecurity	3	
___ 5. Upper Division Scientific Inquiry (Jr. & Sr. Level Course)	3	3 units chosen from the following (also satisfies GE, B4):		3	
<b>Category C - Disciplinary Perspectives - Arts and Humanities</b>		<b>12</b>	<b>MATH 1301, MATH 1401, MATH 1601, MATH 2210</b>		
___ 1. Arts	3	<b>Upper-Division Core Requirements</b>		<b>24</b>	
___ 2. Humanities	3	___ IST 3110	Management of Information Technology (Prerequisite: IST 1110)	3	
___ 3. Arts or Humanities (Additional course from C1 or C2)	3	___ IST 3420	Systems Analysis and Design (Prerequisite: IST 1110)	3	
___ 4. Upper Division Arts or Humanities (Jr. & Sr. Level Course)	3	___ IST 4210	Advanced Computer Networks (Prerequisites: IST 2210 and IST 3110)	3	
<b>Category D - Disciplinary Perspectives - Social Sciences</b>		<b>12</b>	___ IST 4310	Web Technologies (Prerequisite: IST 2310)	3
___ 1. American Government ( <b>PSCI 2030</b> )	3	___ IST 4910	Enterprise System Administration (Prerequisite: IST 4210)	3	
___ 2. U.S. History	3	___ IST 5150	Project Management	3	
___ 3. Social Science Discipline Perspectives	3	___ MGMT 3500	Applied Communication	3	
___ 4. Upper Division Social Sciences	3	Three units taken in any JHBC 3000-5000 level course		3	
<b>Category E - University Foundations</b>		<b>3</b>	<b>Concentration Requirements (A grade of "C" or better is required in all concentration courses)</b>		<b>18</b>
___ 1. Foundation Seminar	3	___ IST 4610	Cybersecurity Management	3	
<b>Note:</b> Requirements for general education, required core and concentration courses, may not total 120 units. Free electives may be required to make up the difference.		___ IST 4620	Penetration Testing and Etchical Hacking	3	
		___ IST 5250	Incident Handling and Cyber Investigation	3	
		___ IST 5930	Seminar in Information Systems and Technology	3	
		Six units (2 courses) chosen from:		6	
		IST 4120, 4320, 4410, 4510, 5250, 5930, 5951, 5952, 5953; ADMN 5753			

*Bachelor of Science, Information Systems & Technology*

**CYBER SECURITY CONCENTRATION**

4- Year Roadmap

**Year 1: Freshman (0 - 29.9 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> (GE) A2 - ENG - English	3	<input type="checkbox"/> (GE) B4 - <b>MATH 1301</b>	3
<input type="checkbox"/> (GE) A3 - Critical Thinking	3	<input type="checkbox"/> <b>IST 1110</b> - Intro to Information Tech.	1
<input type="checkbox"/> <b>ADMN 2100</b> - Applied Bus. Statistics	3	<input type="checkbox"/> (GE) B2 - Life Science	3
<input type="checkbox"/> (GE) E - Foundation Seminar	3	<input type="checkbox"/> (GE) A1 - <b>COMM 1006</b>	3
<input type="checkbox"/> (GE) C2 - Humanities	3	<input type="checkbox"/> (GE) C1 - Arts	3
<input type="checkbox"/> (GE) B3 - Lab/Activity	1	<input type="checkbox"/> (GE) D2 - U.S. History	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>16</b>

**Year 2: Sophomore (30 - 59.9 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> (GE) C3 - C1 or C2 - Arts/Humanities	3	<input type="checkbox"/> (GE) D1 - <b>PSCI 2030</b>	3
<input type="checkbox"/> <b>IST 2210</b> - Computer Networks & Sec.	3	<input type="checkbox"/> <b>IST 2310</b> - Applications Development	3
<input type="checkbox"/> (GE) D3 - Social Science Discipline Persp.	3	<input type="checkbox"/> <b>IST 2410</b> - Database Mgmt. for Business	3
<input type="checkbox"/> <b>MGMT 2300</b> - Legal Environment of Bus.	3	<input type="checkbox"/> (GE) D2 - U.S. History	3
<input type="checkbox"/> (GE) B1 - Physical Science	3	<input type="checkbox"/> <b>IST 2510</b> - Big Data Analysis	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

**Year 3: Junior (60 - 89.9 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> <b>IST 2610</b> - Cybersecurity	3	<input type="checkbox"/> <b>IST 5250</b> - Incident Handling & Cyber Investigation	3
<input type="checkbox"/> <b>IST 3110</b> - Mgmt. of Information Tech.	3	<input type="checkbox"/> <b>IST 4610</b> - Cybersecurity Management	3
<input type="checkbox"/> JHBC 3000-5000 level course	3	<input type="checkbox"/> <b>IST 5150</b> - Project Management	3
<input type="checkbox"/> (GE) C4 - UD Arts or Humanities	3	<input type="checkbox"/> Free Elective Course	3
<input type="checkbox"/> <b>MGMT 3500</b> - Applied Communication	3	<input type="checkbox"/> Concentration Elective Course	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>

**Year 4: Senior (90 - 120 units earned)**

Fall Semester		Spring Semester	
Course	Units	Course	Units
<input type="checkbox"/> <b>IST 4210</b> - Advanced Computer Net.	3	<input type="checkbox"/> <b>IST 4910</b> - Enterprise System Admin.	3
<input type="checkbox"/> <b>IST 4620</b> - Pen. Testing & Ethical Hacking	3	<input type="checkbox"/> <b>IST 4310</b> - Web Technologies	3
<input type="checkbox"/> (GE) D4 - Upper Division Social Sciences	3	<input type="checkbox"/> Concentration Elective Course	3
<input type="checkbox"/> <b>IST 3420</b> - Systems Analysis & Design	3	<input type="checkbox"/> (GE) B5 - UD Scientific Inquiry	3
<input type="checkbox"/> Free Elective	3	<input type="checkbox"/> <b>IST 5930</b> - Seminar in Info. Systems & Technology	3
<b>Total Units</b>	<b>15</b>	<b>Total Units</b>	<b>15</b>
		Degree Total Units	120

(GE) = General Education Course  
 (UD) = Upper Division (Jr./Sr. Level)

*Use the roadmap in conjunction with the PAWS report to identify specific courses in each category*