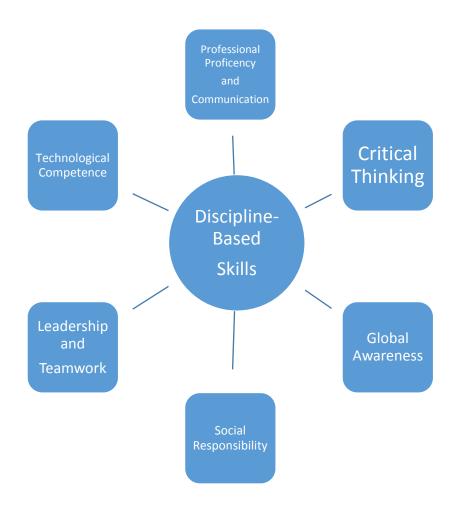**MARKETABLE SKILLS**

The *Marketable Skills* for the COB are divided into the Core Skills that all students develop through the core courses. These are shown as the six components below. In addition, there are Discipline-Based *Marketable Skills* that are developed through courses taken in your major.

The Core Skills and Discipline-Based Skills are presented for each COB Major. For each Skill, the discipline-specific application and the general employment application is shown and the courses where you obtain that Skill. As stated in our Mission, we want to help you "attain the knowledge and skills needed to be successful as professionals."

MARKETABLE CORE SKILLS: Computer Information Systems (CIS)

SKILL SET	CIS – SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Data Analytical Skills	Analyze and make strategic decisions using business data	Assist organizations in business decision making using appropriate analyses on organizational data	COSC 4347 Business Intelligence and Analysis
C Programming	Create business specific applications to acquire, represent and deliver business data to stakeholders	Demonstrate skills in the C programming language appropriate to the business problem	COSC 1336 Programming Fundamentals COSC 1337 Object Oriented Paradigm COSC 3331 eCommerce COSC 3385 Database Design COSC 4309 Design of Modern Information Systems
Project Management Skills	Organize teams, manage tasks, expectations and deliverables	Apply skills to manage business projects; recognize critical paths and assign appropriate resources	COSC 4309 Design of Modern Information Systems COSC 4375 Information System Design Project
SAP	Manage inventories, assets and investments; process orders and deliveries; understand holistic business functions	Develop a variety of skills and knowledge essential to organizations that use ERP	MANA 3305 Operations Management MARK 3311 Principles of Marketing COSC 3333 Management Information Systems COSC 4312 ERP Architecture Using SAP

MARKETABLE CORE SKILLS: Computer Information Systems (CIS)

JAVA Programming	Create business specific web-based applications to acquire, represent and deliver business data to stakeholders	Demonstrate skills in an Object Oriented programming language appropriate to the business problem	COSC 1337 Object Oriented Paradigm
Web Development	Create applications for web based business applications	Demonstrate the ability to apply the appropriate programming language to create a web-based application	COSC 3331 eCommerce COSC 3385 Database Design COSC 1336 Programming Fundamentals COSC 1337 Object Oriented Paradigm
Networking Skills	Ability to setup and operate a network	Demonstrate the ability to design and operate a computer network using CISCO routers and various network operating systems.	COSC 4225 Data Communications and Computer Networks COSC 4375 Information System Design Project
Systems Analyst Skills	Gather requirements to develop new systems and applications	Using skills to gather information from users to modify existing systems and applications or develop new systems.	COSC 4375 Information System Design Project COSC 3385 Database Design COSC 3375 Analysis and Logical Design
Security Management	Identify best practices in cyber security and apply them to business environments	Formulate a business security plan appropriate to stakeholder needs	COSC 4362 Retail Cyber Security

MARKETABLE CORE SKILLS: Computer Information Systems (CIS)

SKILL SET	CIS – SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Professional Proficiency and Communication.	Grasp of Information Technology concepts and applications; competency in written and oral communication.	Requisite Knowledge for chosen field and ability to communicate effectively	SPCM 1315 Fund of Speech Communication COSC 4309 Design of Modern Information Systems MANA 3370 Bus Writing & Oral Presentation
Technical Competence	SAP; Use of Cyber Security Tools; Programming Skills, Database Design and Querying; System Design; Networking Skills	Application Design, Database Design, and Cyber Security Skills.	COSC 4362 Retail Cyber Security COSC 1336 Programming Fundamentals COSC 1337 Object Oriented Paradigm COSC 4325 Data Comm. & Comp. Networks COSC 3385 Database Design
Critical Thinking	Analyze and make strategic decisions using business data	Assist organizations in business decision making using appropriate analyses on organizational data	COSC 4347 Business Intelligence and Analysis MANA 3330 Critical and Analytical Thinking in Business COSC 4309 Design of Modern Information Systems
Global Awareness	Impact of globalization on business and information technology	Understand technology issues of the global enterprise including laws for transmission of data and the Internet	MANA 3312 International Business COSC 4362 Retail Cyber Security
Social Responsibility	Ethics, objectivity, independence, and responsibility conflict.	Ethics in the use of information technology and business.	BLAW 3301 Business Law and Social Responsibility COSC 4362 Retail Cyber Security
Leadership and Teamwork	Organize teams, manage tasks, expectations and deliverables	Apply skills to manage business projects; recognize critical paths and assign appropriate resources	COSC 4309 Design of Modern Information Systems COSC 4375 Information System Design Project

MARKETABLE CORE SKILLS: Computer Information Systems (CIS)

CORE SKILLS (Across the College)	Computer Science – SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Professional Proficiency and Communication	Software Development Documentation; Group Presentations; UML diagrams; E-R diagrams	Technical Writing; Oral & Written Communication; Diagramming; Requirements Gathering	COSC 1337 Object-Oriented Paradigm COSC 4336 Software Development COSC 4385 Database Management Concepts COSC 4395 Capstone Project
Technical Competence	Programming; Object-Oriented Paradigm; Data Management; Computer Architecture; Network Protocols and Security; Operating Systems; SQL; Cybersecurity	Coding; Testing; Debugging; Design; System Development; Data Management	COSC 1336 Programming Fundamentals COSC 1337 Object-Oriented Paradigm COSC 2336 Data Structures and Algorithms COSC 3325 Algorithm Analysis and Foundations COSC 3345 Computer Architecture COSC 3355 Operating Systems COSC 4336 Software Development COSC 4360 Net-Centric Computing COSC 4385 Database Management Concepts
Critical Thinking	Problem Decomposition; Algorithm Development; Algorithm Analysis	Logical Thinking; Problem Solving; Evaluate Process Efficiency	COSC 1336 Programming Fundamentals COSC 2336 Data Structures and Algorithms COSC 3325 Algorithm Analysis and Foundations
Global Awareness	Impact of Automation; Impact of Technological Advances; Cybersecurity	Ethics Education; Intellectual Property Laws	COSC 3215 Social and Professional Issues in Computing COSC 4360 Net-Centric Computing COSC 4362 Retail Cyber Security
Social Responsibility	Ethics; Laws and Customs; Copyrights and Patents; Impact of Technology; Cybersecurity	Ethics Education; Intellectual Property;	COSC 3215 Social and Professional Issues in Computing COSC 4360 Net-Centric Computing COSC 4362 Retail Cyber Security
Leadership And Teamwork	Team Projects	Work in Groups to Achieve Goals including Software Development	COSC 4336 Software Development COSC 4395 Capstone Project

MARKETABLE CORE SKILLS: COMPUTER SCIENCE

SKILL SET	COMPUTER SCIENCE-SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Structured Programming	Variables; Data Types; Selection Statements; Loops; Arrays; Functions; Data Storage and Representation; Testing; Debugging	Logical Thinking; Problem Solving; Problem Decomposition; Programming; Documentation;	COSC 1336 Programming Fundamentals
Object Oriented Programming	Objects and Classes; Methods and Messages; Libraries; Inheritance; Abstraction; Polymorphism; Design; Testing; Debugging	Logical Thinking; Problem Design; Documentation; Problem Solving; Programming; Documentation;	COSC 1337 Object Oriented Paradigm
Data Structures	Stacks; Queues; Trees; Linked Lists; Algorithm Implementation; Algorithm Analysis	Programming; Documentation; Design; Efficiency; Design Choice Tradeoff	COSC 2336 Data Structures
Computer Architecture	Assembly and Machine Languages; Data Representation; Architecture Layers; Logic Gates; Boolean Algebra; Memory Management; I/O Systems; Circuit Design;	Design; Logical Thinking; Hardware	COSC 2315 Computer Organization COSC 3345 Computer Architecture
Networks	Internet Stack; Data Communication; Transmission; Protocols; TCP; Error Correction and Detection; Encoding and Decoding; RFCs; ICANN	Cybersecurity; Internet; Web Development; Cryptography; Troubleshooting; Programming;	COSC 4360 Net Centric Computing
Algorithm Analysis	Big-O notation; Design Choice Tradeoffs; Complexity Bounding; Computability	Programming; Design; Efficiency; Diagrams; Documentation	COSC 3345 Computer Architecture COSC 2336 Data Structures
Data Management	Relational Model; E-R Model; SQL; Unstructured Data; Data Storage; Access Methods; Normalization	Databases; Data Design; Data Integrity; Data Security	COSC 4385 Database Management Concepts

MARKETABLE CORE SKILLS: COMPUTER SCIENCE

SKILL SET	COMPUTER SCIENCE-SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Unix and Linux	Unix Architecture; Unix Environment; Commands; Unix Shell; Interpreted Languages; Permissions	Unix; Linux; Scripting; System Administration; Cybersecurity	COSC 1336 Programming Fundamentals COSC 1337 Object Oriented Paradigm COSC 4327 UNIX
Operating Systems	OS Design; OS Implementation; OS Security; Paging; Memory Management; Machine-Level Instruction; Processes; Mutual Exclusion; Locking	Troubleshooting; Scheduling; Windows; Synchronization; Cybersecurity	COSC 3355 Operating Systems
Software Development	Software Life Cycle; Agile Development Methodologies; Requirements Gathering; Design; Implementation; Black Box & White Box Testing; Alpha and Beta Testing;	Programming; Design; Design Tradeoff Choices; Diagramming; Technical Writing; Formal Testing; Teamwork	COSC 4336 Software Development COSC 4395 Capstone Project
Cybersecurity	Attacking; Penetration Testing; Cryptography; Secure Transmission; Security Management	Testing; Documentation; Technical Writing; Standards; Compliance; Ethical Hacking Tools and Techniques; Data Security	COSC 4361 Cyber Security Management COSC 4362 Retail Cyber Security COSC 4381

MARKETABLE CORE SKILLS: INFORMATION TECHNOLOGY

SKILL SET	COMPUTER SCIENCE-SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Structured Programming	Variables; Data Types; Selection Statements; Loops; Arrays; Functions; Data Storage and Representation; Testing; Debugging	Logical Thinking; Problem Solving; Problem Decomposition; Programming; Documentation;	COSC 1336 Programming Fundamentals
Object Oriented Programming	Objects and Classes; Methods and Messages; Libraries; Inheritance; Abstraction; Polymorphism; Design; Testing; Debugging	Logical Thinking; Problem Design; Documentation; Problem Solving; Programming; Documentation;	COSC 1337 Object Oriented Paradigm
Computer Architecture	Assembly and Machine Languages; Data Representation; Architecture Layers; Logic Gates; Boolean Algebra; Memory Management; I/O Systems; Circuit Design;	Design; Logical Thinking; Hardware	COSC 2315 Computer Organization
Networks	Internet Stack; Data Communication; Transmission; Protocols; TCP;	Cybersecurity; Internet; Web Development; Troubleshooting;	COSC 4325 Data Comm. & Comp. Networks
Data Management	Relational Model; E-R Model; SQL; Data Storage; Access Methods; Normalization	Databases; Data Design; Data Integrity; Data Security; Data Analytics	COSC 3385 Database Design COSC 4347 Business Intelligence and Analysis
Software Development	Software Life Cycle; Agile Development Methodologies; Requirements Gathering; Design; Implementation; Black Box & White Box Testing; Alpha and Beta Testing;	Programming; Design; Design Tradeoff Choices; Diagramming; Technical Writing; Formal Testing; Teamwork	COSC 4375 Information System Design Project COSC 3385 Database Design
Cybersecurity	Attacking; Penetration Testing; Cryptography; Secure Transmission; Security Management	Testing; Documentation; Technical Writing; Standards; Compliance; Ethical Hacking Tools and Techniques; Data Security	COSC 4362 Retail Cyber Security COSC 4361 Cyber Security Management (Elective) COSC 4367 Cryptography (Elective)

MARKETABLE CORE SKILLS: INFORMATION TECHNOLOGY

CORE SKILLS (Across the College)	Computer Science – SPECIFIC APPLICATION	GENERAL EMPLOYMENT APPLICATION	HOW DELIVERED
Professional Proficiency and Communication	Grasp of Information Technology concepts and applications; competency in written and oral communication.	Requisite Knowledge for chosen field and ability to communicate effectively	SPCM 1315 Fund of Speech Communication COSC 4309 Design of Modern Information Systems MANA 3370 Bus Writing & Oral Presentation
Technical Competence	Programming; Object-Oriented Paradigm; Data Management; Computer Architecture; Network Protocols and Security; SQL; Cybersecurity	Coding; Application Design; System Development; Data Management; Cyber Security Tools	COSC 1336 Programming Fundamentals COSC 1337 Object-Oriented Paradigm COSC 2315 Computer Organization COSC 4325 Data Comm. & Comp. Networks COSC 4362 Retail Cyber Security COSC 3385 Database Design COSC 4309 Design of Modern Information Systems
Critical Thinking	Analysis; Problem Solving; and Design	Logical Thinking; Problem Solving; Evaluate Process Efficiency	COSC 4309 Design of Modern Information Systems COSC 4347 Business Intelligence and Analysis
Global Awareness	Impact of globalization on business and information technology; Impact of Automation; Impact of Technological Advances; Cybersecurity	Ethics Education; Intellectual Property Laws	COSC 4362 Retail Cyber Security
Social Responsibility	Ethics; Laws and Customs; Copyrights and Patents; Impact of Technology; Cybersecurity	Ethics Education; Intellectual Property;	COSC 3215 Social and Professional Issues in Computing COSC 4362 Retail Cyber Security
Leadership And Teamwork	Team Projects	Work in Groups to Achieve Goals including Software Development	COSC 4309 Design of Modern Information Systems