Arkansas CTE

Business Intelligence (2025-26)

Explore Careers and Professionalism Inside Business Intelligence 1

1 **Recognize and discuss the academic and professional benefits of participating in a CTSO and professional organization.** 1.1

1 Research the Career and Technical Student Organizations (CTSO) and draw connections between participation and success. Identify and discuss successful professionals and their involvement in either FBLA or DECA. 1.1.1

2 Discuss and evaluate CTSO activities which reinforce and connect real-world application to the curriculum taught in the classroom. 1.1.2

3 Research CTSO competitive events and identify sources to help prepare for success in competitive events. 1.1.3

4 Understand the importance of professional dress. Evaluate appropriate dress for different occupations and careers. 1.1.4

5 Research professional organizations for business intelligence related careers and discuss the importance of membership and participation in professional organizations for career development and growth. 1.1.5

2 **Develop personal traits for success in business intelligence careers (soft skills).** 1.2

1 Demonstrate effective communication skills. 1.2.1

2 Comprehend and explain the importance of punctuality and attendance. 1.2.2

3 Identify traits important to success such as initiative, positive attitude, enthusiasm, self-confidence, etc. 1.2.3

4 Describe integrity, ethical leadership, and the importance of these on one’s career and business success. Evaluate real-world scenarios and discuss the ethical considerations involved in those situations. 1.2.4

5 Participate in team exercises modeled on projects that would require teamwork in the workplace. 1.2.5

3 **Understand, explain and demonstrate the concept and importance of digital presence.** 1.3

1 Explore the risks and benefits associated with the utilization and implementation of social media and other digital technologies for a business. 1.3.1

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Analyze one's current digital presence, evaluate its alignment with career goals, and identify areas for improvement. 1.3.2

3 Prepare/update a professional digital portfolio. 1.3.3

4 Research, analyze and describe business intelligence careers. 1.4

1 Research business intelligence careers and determine skills necessary for success in a variety of business intelligence related careers. 1.4.1

2 Analyze personal interests and skills needed for success. 1.4.2

3 Identify professional certifications available for various careers and levels of professionals in the business intelligence field. 1.4.3

5 Identify characteristics of professional work ethics. Identify and discuss the commonly accepted business intelligence concepts. 1.5

1 Discuss the importance of honesty, privacy, and integrity. 1.5.1

2 Examine ethical and unethical business practices. 1.5.2

3 Identify and discuss the ways data can be broken down, interpreted, and shared with technical and non-technical stakeholders to improve business decisions. 1.5.3

Apply Computational Thinking to Solve Problems 2

1 Apply computational thinking and programming skills to design and implement programs to solve problems. 2.1

1 Leverage computational thinking (e.g., abstraction, algorithm development, decomposition, and pattern recognition) to solve business related problems 2.1.1

2 Use various data types (e.g., Booleans, characters, integers, floating points, strings) in appropriate situations within a program. Note: This could be using Booleans (e.g., true or false) when working with selection, integers and/or floats when performing math calculations, strings when working with text data). 2.1.2

3 Create and use variables within a program. 2.1.3

4 Construct expressions using arithmetic operators (e.g., +, -, *, /, and %) and numeric data types within a program. 2.1.4

5 Construct Boolean expressions using relational (e.g., <, >, <=, >=, ==, and !=) and logical operators (e.g, AND, OR, and NOT) within a program. Note: Commonly used with iteration and selection. 2.1.5

6 Apply appropriate typecasting or conversion methods to convert between different data types when necessary within a program. 2.1.6

7 Perform operations that encode/decode data from one form into another form (e.g., binary to hexadecimal, numeric values to colored pixels, and/or numbers to ASCII/Unicode representations). 2.1.7

8 Use data structures (e.g., arrays, lists, and maps) to store and manipulate multiple values and perform operations on the stored values. 2.1.8

9 Create programs that utilize selection control structures (e.g., if statements and switch statements) to make decisions and execute different code paths based on conditions. 2.1.9

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10 Create programs that utilize iteration control structures (e.g., while loops and for loops) to repeat code blocks a specific number of times or until a condition is met. 2.1.10

11 Create procedures/functions to modularize code for reusability and organization within a program 2.1.11

2 Create programs using a text-based programming language to assist with common business problems. 2.2

1 Identify common business challenges (e.g., repetitive tasks, monitoring financial inflows and outflows, managing inventory, conducting price analysis versus competitors, and performing data analysis and reporting) that could be solved programmatically. 2.2.1

2 Create programs using a text-based programming language to manage files (e.g., create, delete, move, search, and compress files) and to increase productivity in the business workplace. 2.2.2

3 Define automation and determine when a task or operation could benefit from automation. 2.2.3

4 Automate simple business tasks and operations (e.g. data entry, file management, performing calculations, invoice processing, or sending automated emails). 2.2.4

5 Create a basic business application using a text-based programming language that solves a business-related issue. Notes: For example, considering the context of a Small Business Enterprise (SBE), creating a Point of Sale (POS) system could serve as a viable application. 2.2.5

Explore Major Technologies that Impact Business 3

1 Research major technologies and evaluate their potential benefits, risks, and transformative impact within a business context. 3.1

1 Investigate the role cloud computing technology has on a business (e.g., data storage and backup, enhanced collaboration, and cost savings by eliminating the need to maintain their own physical infrastructure). 3.1.1

2 Explore the benefits that financial technology (Fintech), such as digital payment systems and automated financial analytics, can have on a business. 3.1.2

3 Explore the role and benefit of business intelligence tools (e.g., IBM Cognos Analytics and Google Data Studio) in empowering businesses to analyze data and gain valuable insights for informed decision-making. 3.1.3

4 Examine how mobile technology has revolutionized the way businesses operate, enabling flexibility, improved communication, enhanced customer experiences, and access to real-time information. 3.1.4

5 Explore how cybersecurity technologies (e.g., intrusion detection and prevention systems, encryption, and data loss prevention tools) can safeguard businesses against evolving threats and ensure the protection of critical data and systems. 3.1.5

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6 Examine how technologies derived from artificial intelligence and machine learning applications (e.g., Generative Pre-trained Transformers) can improve data analysis and productivity in performing common business tasks. 3.1.6

7 Investigate the impact of emerging technologies (e.g., blockchain, virtual and augmented reality, and remote work tools) on businesses by unlocking new possibilities and driving transformative change. 3.1.7

Utilize Data Stored in Files and Databases to Analyze Data 4

1 **Use application software and programming languages to interact with files.** 4.1

1 Enter and format data within spreadsheets for business purposes using spreadsheet software. 4.1.1

2 Use formulas and functions (e.g., AVG, MIN, MAX, COUNT, and SUM) within a spreadsheet software to use logical reasoning to draw conclusions and apply mathematical problem-solving skills to create suitable formulas to solve problems. 4.1.2

3 Use a spreadsheet software to aid with data analysis and reporting by creating visualizations (e.g., charts). 4.1.3

4 Use advanced functions (e.g., VLOOKUP, COUNTIF, and IFERROR), conditional formatting (e.g., IF, AND, OR, and BETWEEN), and filtering techniques to analyze and manipulate data using a spreadsheet software. 4.1.4

5 Use a text-based programming language to create and read simple spreadsheet files (e.g., csv) using file input and output operations. 4.1.5

6 Create programs using a text-based programming language that solve common business data operations (e.g., average, sum, count, max, min) in analyzing data in a spreadsheet. 4.1.6

7 Explore and use various programming libraries to aid with data analysis and reporting using a programming language beyond spreadsheet software. 4.1.7

2 **Create and manage databases.** 4.2

1 Explore and compare various types of databases (e.g., relational, NoSQL, and hierarchical). 4.2.1

2 Research different database management systems (e.g, MySQL, SQlite, Microsoft SQL Server, Access, and Oracle Database) to manage and interact with a database. 4.2.2

3 Use a database management system to create basic databases and perform basic operations (e.g., selecting, inserting, updating, and deleting data) on the database. 4.2.3

4 Use a text-based programming language to create basic databases and tables and perform basic operations (e.g., selecting, inserting, updating, and deleting data) on the database. 4.2.4

5 Create and execute statements using a declarative language (e.g., Structured Query Language) to create simple databases and perform basic operations (e.g., selecting, inserting, updating, and deleting data) on the database. 4.2.5

6 Explore and use various sources of data that can be collected and used for business decisions and operations (e.g., competitor's web pages, financial statements, surveys and questionnaires, market research reports, and publicly available datasets). 4.2.6

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7 Create programs using a text-based programming language to transfer data from a data source (e.g., csv, spreadsheets, and online data repositories) into a database. 4.2.7

8 Create programs using a text-based programming language that perform data analysis on data stored in a database. 4.2.8

Explore Basic Cybersecurity and Networking Concepts in Business Environments 5

1 **Research cybersecurity principles and potential risks cybersecurity threats pose within the business sector.** 5.1

1 Explore core principles for establishing comprehensive information security strategies (e.g., confidentiality, integrity, availability, authentication, and non-repudiation) within a business. 5.1.1

2 Identify and explain the impacts of malware (e.g., ransomware), hacking, phishing, intellectual property theft, and identity theft can have on a business. 5.1.2

3 Explore appropriate security controls (e.g., security awareness training, antivirus and anti-malware software, access control systems, and information security policies) to protect business information. 5.1.3

2 **Evaluate hardware configurations, network components, and security strategies to support the specific needs and operations of a business.** 5.2

1 Identify and describe the purpose of hardware components within various personal computing platforms used in the business environment (e.g., desktop computer and mobile device). 5.2.1

2 Describe common network concepts (e.g., IP address, topology, protocols, bandwidth, and latency). 5.2.2

3 Describe common network hardware (e.g, modems, routers, switches, firewalls, and servers) that can be used in a business. 5.2.3

4 Describe common network security (e.g., firewalls and virtual private networks). 5.2.4