

# DATA ANALYTICS

The Data Analytics program provides candidates with foundational skills in using industry-standard tools and methods to acquire data from a wide range of public and private data sources, filter subsets of that data, organize data into relevant information and present the results in commonly understood industry standards. Successful degree candidates are prepared for analytics-related employment in management, as data analyst specialists, or in management and operational consulting.

## Certificates of Achievement

- Data Analytics - Certificate of Achievement (<https://lbcc-public.courseleaf.com/degrees-certificates/data-analytics/data-analytics-certificate-achievement/>)

### **COSA 1 1 units**

#### **Computer Information Competency**

##### **18 hours lecture, 18 hours laboratory**

Grading: letter grade or pass/no pass.

Formerly COMIS 1 and CAOTC 211. The course is designed for students to develop current computer information competency. It covers basic use of hardware, Internet knowledge and skills, word processing, spreadsheet, digital data presentations, and communications applications. This course satisfies the technology component of the Information Competency graduation requirement for Plan A.

Transferable to CSU Only

### **COSA 2 3 units**

#### **Critical Thinking Using Computers**

##### **54 hours lecture**

Grading: letter grade or pass/no pass.

Formerly CPAS 2. This course will explore the various ways computer technology can be used to enhance critical thinking and information literacy skills. The student will learn to utilize multiple software programs critically to gather, diagnose, synthesize, and present information. Students will develop a fundamental understanding of critical thinking skills such as deductive and inductive reasoning, scientific reasoning, argument analysis and development in the context of computer technology.

Transferable to both UC and CSU; see counselor for limitations

### **COSA 3 3 units**

#### **Technology and Society**

##### **54 hours lecture**

Grading: letter grade or pass/no pass.

This course critically examines the interrelationships among technology, the individual, and society. Students investigate the factors that influence the growth and development of technology and assess how individuals and society respond to the challenges and consequences of the technology revolution. Appropriate for both technical and non-technical majors, students explore principles, methodologies, and value systems from a technology perspective. Students will use case studies to illustrate how technology has affected specific industries.

Transferable to both UC and CSU; see counselor for limitations

### **COSA 5 3 units**

#### **Microsoft Windows Operating System**

##### **54 hours lecture**

Grading: letter grade or pass/no pass.

Formerly CAOTC 31A and COSA 5AD. Students will learn basic to advanced features and concepts of the Microsoft Windows operating system. Topics will include the use of Microsoft applications, Internet technologies, email, maintenance and security. Conceptual materials covered in this course will be balanced with hands-on experience. This course satisfies the technology portion of the information competency requirement.

Transferable to CSU Only

### **COSA 10 3 units**

#### **Microsoft Word for Windows**

##### **54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Word processing using Microsoft Word. Students will learn how to edit, format, design, and use layout and customization tools to create documents such as letters, flyers, newsletters, and publications.

Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam. Formerly CAOTC 39A and COSA 10AD.

Transferable to CSU Only

### **COSA 15 3 units**

#### **Microsoft Excel for Windows**

##### **54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Formerly CAOTC 41E and COSA 15AD. Students will learn spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

Transferable to CSU Only

### **COSA 20 3 units**

#### **Microsoft PowerPoint for Windows**

##### **54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Formerly CAOTC 44D and COSA 20AD. This class provides a thorough exploration of presentation graphics software. Skills are developed in planning, creating, formatting, enhancing, and delivering presentations. Through hands-on practice, students learn to combine text and graphic images, animation, sound, and other special effects to develop computerized slide shows. This course satisfies the technology component of the Information Competency graduation requirement. Upon successful completion of this course, students will receive a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

Transferable to CSU Only

**COSA 25 3 units****Microsoft Access for Windows****54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Formerly CAOTC 47A and COSA 25AD. Relational databases concepts using Microsoft Access including design fundamentals, creation of tables, queries, forms, and reports are covered. This course satisfies the technology component of the Information Competency graduation requirement. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

Transferable to CSU Only

**COSA 30 (C-ID ITIS 120) 3 units****Introduction to Computers****54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Formerly CAOTC 34. This course is a computer and information literacy course. This course will focus on: the relationship between technology, individuals, and society; the long-term physiological consequences of incorrect ergonomic design; and the use of critical thinking and logic to critically gather, diagnose, synthesize, and present information. Instruction also includes the use of computers, common software programs, peripherals, and social media. Students are instructed in the use of word processing, spreadsheet, presentation, and Internet applications. Upon successful completion of this course, students will be given a voucher to sit for the Internet and Computing Core (IC3) industry certification exam.

Transferable to CSU Only

**COSA 35 3 units****Microsoft Office****54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Formerly CAOTC 35. This course studies the concepts and features of Microsoft Office software in today's business office with hands-on application projects. Topics covered include computer concepts, operating system, file management browser fundamentals, MS Word, MS Excel, MS Access and MS PowerPoint. This course satisfies the technology component of the Information Competency requirement for Plan A.

Transferable to CSU Only

**COSA 50 (C-ID ITIS 120) 4 units****Intro to IT Concepts and Applications****72 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Formerly CBIS 6A. This course focuses on information systems, information literacy, and computer literacy. This course emphasizes: the relationship between technology, individuals, and society; the long-term physiological consequences of incorrect ergonomic design; and the use of critical thinking and logic to critically gather, diagnose, synthesize, and present information. Word processing, spreadsheets, databases, presentation software, and basic Internet use will be covered. Spreadsheet use for business will be emphasized. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

Transferable to both UC and CSU; see counselor for limitations

**COSA 210 3 units****Intro to Project Management for IT****54 hours lecture**

Recommended Preparation: COSA 50.

Grading: letter grade or pass/no pass.

Formerly CBIS 436A. This class is an introduction to IT project management. Popular project management software will be introduced. In addition, the class will focus on the methods and techniques for managing technology projects as well as preparing students for the CompTIA's IT Project+ certification.

**COSA 215 3 units****Microsoft Outlook for Windows****54 hours lecture**

Recommended Preparation: COSA 1.

Grading: letter grade or pass/no pass.

Materials Fee: \$10.

Formerly CAOTC 215A and COSA 215AD. This course provides comprehensive instruction in desktop management software using Microsoft Outlook. Topics include how to compose, format, and send e-mail, manage contacts, plan and track tasks, schedule calendar items, and integrate Outlook with other applications. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

**COSA 240 1 units****Introduction to Cryptocurrency****18 hours lecture**

Grading: letter grade or pass/no pass.

This course introduces the concepts and technologies behind cryptocurrency and blockchain. Topics include the basis of cryptocurrency, the relation to blockchain technology, the acquisition, management, and technology used in securing cryptocurrency in open and distributed financial systems. This course is for students who want to understand the role cryptocurrency plays in society.

**COSA 241 1 units****Cryptocurrency Financial Software****18 hours lecture**

Grading: letter grade or pass/no pass.

This course covers the software applications and platforms currently used in the field of Cryptocurrency. Topics will include the types of software commonly used to research, analyze, invest, and manage Cryptocurrency assets. This course is designed for anyone considering entering into Cryptocurrency financial services and investing.

**COSA 251 3 units****Data Analytics with Power BI****54 hours lecture**

Grading: letter grade or pass/no pass.

This course is designed to provide a comprehensive understanding of Power BI, a powerful data visualization and business analytics tool developed by Microsoft. This course equips students with the skills to transform raw data into meaningful insights, create interactive visualizations, and effectively communicate findings to stakeholders. Through hands-on exercises, real-world examples, and engaging discussions, students will learn how to leverage Power BI's capabilities to make data-driven decisions and enhance overall business performance.

**COSA 252 3 units****Data Analytics with Tableau****54 hours lecture**

Grading: letter grade or pass/no pass.

This course provides a comprehensive understanding of Tableau, a leading data visualization tool. This course is suitable for beginners with little to no experience in data visualization or Tableau, as well as intermediate users looking to deepen their knowledge. Students will master the art of creating captivating visualizations, interactive dashboards, and informative reports, all while uncovering valuable insights from data.

**COSA 253 3 units****Introduction to Google Analytics****54 hours lecture**

Grading: letter grade or pass/no pass.

This course provides an introduction to the field of data analytics using Google Analytics as a primary tool for data collection and analysis. It covers fundamental concepts and techniques of data analytics, data visualization, and data-driven decision-making. Students will gain hands-on experience in data collection, data cleaning, data analysis, and data visualization using Google Analytics and other relevant tools. The course also explores real-world applications of data analytics in various fields.

**COSA 601 0 units****Computer Information Competency****18 hours lecture, 18 hours laboratory**

Grading: non graded.

The course is designed for students to develop current computer information competency. It covers basic use of hardware, Internet knowledge and skills, word processing, spreadsheet, digital data presentations, and communications applications.

**COSA 602 0 units****Critical Thinking Using Computers****54 hours lecture**

Grading: non graded.

This course will explore the various ways computer technology can be used to enhance critical thinking and information literacy skills. The student will learn to utilize multiple software programs critically to gather, diagnose, synthesize, and present information. Students will develop a fundamental understanding of critical thinking skills such as deductive and inductive reasoning, scientific reasoning, argument analysis, and development in the context of computer technology.

**COSA 603 0 units****Technology and Society****54 hours lecture**

Grading: non graded.

This course critically examines the interrelationships among technology, the individual, and society. Students investigate the factors that influence the growth and development of technology and assess how individuals and society respond to the challenges and consequences of the technology revolution. Appropriate for both technical and non-technical majors, students explore principles, methodologies, and value systems from a technology perspective. Students will use case studies to illustrate how technology has affected specific industries.

**COSA 605 0 units****Microsoft Windows Operating System****54 hours lecture**

Grading: non graded.

Students will learn basic to advanced features and concepts of the Microsoft Windows operating system. Topics will include the use of Microsoft applications, Internet technologies, email, maintenance and security. Conceptual materials covered in this course will be balanced with hands-on experience.

**COSA 610 0 units****Microsoft Word, Introductory****18 hours lecture**

Grading: non graded.

This course provides hands-on instruction using basic features of Microsoft Word for the PC and its editing, formatting, and language tools to create, format, save, revise, and print various business and report documents.

**COSA 611 0 units****Microsoft Word, Intermediate****18 hours lecture**

Grading: non graded.

This course provides hands-on instruction using intermediate features of Microsoft Word for the PC and its editing, formatting, and language tools to create, format, save, revise, and print various business and report documents.

**COSA 612 0 units****Microsoft Word, Advanced****18 hours lecture**

Grading: non graded.

This course provides hands-on instruction using advanced features of Microsoft Word for the PC and its editing, formatting, and language tools to create, format, save, revise, and print various business and report documents.

**COSA 613 0 units****Microsoft Word for Windows****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

Materials Fee: \$10.

Word processing using Microsoft Word. Students will learn how to edit, format, design, and use layout and customization tools to create documents such as letters, flyers, newsletters, and publications. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

**COSA 615 0 units****Microsoft Excel, Introductory****18 hours lecture**

Grading: non graded.

This course covers beginning spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables.

**COSA 616 0 units****Microsoft Excel, Intermediate****18 hours lecture**

Grading: non graded.

This course covers intermediate spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables.

**COSA 617 0 units****Microsoft Excel, Advanced****18 hours lecture**

Grading: non graded.

This course covers advanced spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables.

**COSA 618 0 units****Microsoft Excel for Windows****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

Materials Fee: \$10.

Students will learn spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

**COSA 620 0 units****Microsoft PowerPoint, Introductory****18 hours lecture**

Grading: non graded.

This course covers basic presentation concepts using Microsoft PowerPoint including combining text and graphic images to develop computerized slide shows, charts, and printed materials for presentations.

**COSA 621 0 units****Microsoft PowerPoint, Intermediate****18 hours lecture**

Grading: non graded.

This course covers intermediate presentation concepts using Microsoft PowerPoint including combining text and graphic images to develop computerized slide shows, charts, and printed materials for presentations.

**COSA 622 0 units****Microsoft PowerPoint, Advanced****18 hours lecture**

Grading: non graded.

This course covers advanced presentation concepts using Microsoft PowerPoint including combining text and graphic images to develop computerized slide shows, charts, and printed materials for presentations.

**COSA 623 0 units****Microsoft PowerPoint for Windows****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

Materials Fee: \$10.

This class provides a thorough exploration of presentation graphics software. Skills are developed in planning, creating, formatting, enhancing, and delivering presentations. Through hands-on practice, students learn to combine text and graphic images, animation, sound, and other special effects to develop computerized slide shows. Upon successful completion of this course, students will receive a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

**COSA 624 0 units****Microsoft Access for Windows****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

Materials Fee: \$10.

Relational database concepts using Microsoft Access including design fundamentals, and the creation of tables, queries, forms, and reports are covered. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

**COSA 625 0 units****Microsoft Access, Introductory****18 hours lecture**

Grading: non graded.

This course covers basic database concepts using Microsoft Access including creating and modifying tables, running queries, generating reports, and creating forms.

**COSA 626 0 units****Microsoft Access, Intermediate****18 hours lecture**

Grading: non graded.

This course covers intermediate database concepts using Microsoft Access including creating and modifying tables, running queries, generating reports, and creating forms.

**COSA 627 0 units****Microsoft Access, Advanced****18 hours lecture**

Grading: non graded.

This course covers advanced database concepts using Microsoft Access including creating and modifying tables, running queries, generating reports, and creating forms.

**COSA 628 0 units****Microsoft Outlook, Introductory****18 hours lecture**

Grading: non graded.

This course provides instruction in desktop management using Microsoft Outlook. Topics include how to send and receive e-mail, use email special features, and create contacts.

**COSA 629 0 units****Microsoft Outlook, Intermediate****18 hours lecture**

Grading: non graded.

This course provides instruction in intermediate Outlook tasks. Students will learn how to plan and track tasks, schedule calendar items, and create rules to manage their Inbox.

**COSA 630 0 units****Microsoft Outlook, Advanced****18 hours lecture**

Grading: non graded.

This class provides instruction in advanced functions of Microsoft Outlook. Through hands-on practice, student learn to share and manage multiple calendars, import and export contacts, archive and adjust security options, and customize Outlook components.

**COSA 631 0 units****Microsoft Outlook for Windows****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

Materials Fee: \$10.

This course provides comprehensive instruction in desktop management software using Microsoft Outlook. Topics include how to compose, format, and send e-mail, manage contacts, plan and track tasks, schedule calendar items, and integrate Outlook with other applications. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

**COSA 632 0 units****Introduction to Computers****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

Materials Fee: \$10.

This course is a computer and information literacy course. This course will focus on: the relationship between technology, individuals, and society; the long-term physiological consequences of incorrect ergonomic design; and the use of critical thinking and logic to critically gather, diagnose, synthesize, and present information. Instruction also includes the use of computers, common software programs, peripherals, and social media. Students are instructed in the use of word processing, spreadsheet, presentation, and Internet applications. Upon successful completion of this course, students will be given a voucher to sit for the Internet and Computing Core (IC3) industry certification exam.

**COSA 635 0 units****Microsoft Office****54 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

This course studies the concepts and features of Microsoft Office software in today's business office with hands-on application projects. Topics covered include computer concepts, operating systems, file management browser fundamentals, MS Word, MS Excel, MS Access and MS PowerPoint.

**COSA 640 0 units****Introduction to Cryptocurrency****18 hours lecture**

Grading: non graded.

This course introduces the concepts and technologies behind cryptocurrency and blockchain. Topics include the basis of cryptocurrency, the relation to blockchain technology, the acquisition, management, and technology used in securing cryptocurrency in open and distributed financial systems. This course is for students who want to understand the role cryptocurrency plays in society.

**COSA 641 0 units****Cryptocurrency Financial Software****18 hours lecture**

Grading: non graded.

This course covers the software applications and platforms currently used in the field of Cryptocurrency. Topics will include the types of software commonly used to research, analyze, invest, and manage Cryptocurrency assets. This course is designed for anyone considering entering into Cryptocurrency financial services and investing.

**COSA 650 0 units****Intro to IT Concepts & Applications****72 hours lecture**

Recommended Preparation: COSA 601.

Grading: non graded.

This course is an introduction to information systems and the common use of office applications. Internet, Word processing, spreadsheets, databases, presentation software, and basic internet use will be covered. Spreadsheet use for business will be emphasized. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam. This course satisfies the technology portion of the Information Competency graduation requirement.

**COSA 651 0 units****Data Analytics with Power BI****54 hours lecture**

Grading: non graded.

This course is designed to provide a comprehensive understanding of Power BI, a powerful data visualization and business analytics tool developed by Microsoft. This course equips students with the skills to transform raw data into meaningful insights, create interactive visualizations, and effectively communicate findings to stakeholders. Through hands-on exercises, real-world examples, and engaging discussions, students will learn how to leverage Power BI's capabilities to make data-driven decisions and enhance overall business performance.

**COSA 652 0 units****Data Analytics with Tableau****54 hours lecture**

Grading: non graded.

This course provides a comprehensive understanding of Tableau, a leading data visualization tool. This course is suitable for beginners with little to no experience in data visualization or Tableau, as well as intermediate users looking to deepen their knowledge. Students will master the art of creating captivating visualizations, interactive dashboards, and informative reports, all while uncovering valuable insights from data.

**COSA 653 0 units****Introduction to Google Analytics****54 hours lecture**

Grading: non graded.

This course provides an introduction to the field of data analytics using Google Analytics as a primary tool for data collection and analysis. It covers fundamental concepts and techniques of data analytics, data visualization, and data-driven decision-making. Students will gain hands-on experience in data collection, data cleaning, data analysis, and data visualization using Google Analytics and other relevant tools. The course also explores real-world applications of data analytics in various fields.