



2018-2019 Curriculum Catalog

Career and Technical Education Series

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Middle School

Career Explorations I

The Career Explorations I course is designed to give seventh- and eighth-grade students an opportunity to explore various CTE subjects. Specifically, students will be able to learn about careers involving human-related services.

Each unit introduces one particular field and explains its past, present, and future. The goal is to whet students' appetites for these careers. Students can then explore that career in more detail as a high school student.

- **Unit 1: Career Management:** This unit examines the elements of employment, from the purpose and personal benefits of work to lifelong learning and technology. Students learn about wages and employment benefits, find out how to maintain a time sheet, set lifestyle goals that match their work goals, and attain problem-solving skills. Students will also explore career clusters and begin a project that helps them which career clusters best match their talents and life goals.
- **Unit 2: Introduction to Careers in Health Sciences:** In this unit, students learn about the history of health care and its shift from a focus on religion and culture to one a more scientific approach. Students also explore important medical discoveries of the 17th and 18th centuries, and the integration of technology into medicine.
- **Unit 3: Hospitality and Tourism Systems:** Travel and tourism is the largest industry in the world, and it continues to grow each year. Employing 7.5 million people in the United States, the travel and tourism industry depends on visitors traveling to or within the United States. In 2010, sixty million international visitors came to the United States and spent \$134 billion. Travel is divided into two broad categories: leisure travel and business travel.

The industry is made up of various sectors that provide services to people going on vacation, taking a business trip, or visiting an attraction. These sectors include accommodations, transportation, entertainment and attractions, sightseeing and guide services, dining services, and shopping and retail. Within the travel industry, the types of vacation packages or travel products people buy are either considered commodities or experiences.

- **Unit 4: Human Services:** In this unit, students will learn about the human services professional who usually works for a government agency or nonprofit organization. He or she provides assistance, counseling, and training to help people change and acquire better coping skills. These professionals do not rescue people; they empower people, and they respect people's right to self-determination.

Some of the populations targeted for help by human services professionals include those living in poverty, those suffering from substance abuse and alcoholism, the homeless, victims of domestic abuse, the mentally or physically disabled, and the elderly. Organizations that seek to help such people and employ human services professionals include federal and state agencies, drug and alcohol treatment centers, nursing homes and elder care facilities, women's shelters, hospitals, psychiatric facilities, schools and universities, police departments, prisons, courts, and many others.

- **Unit 5: Consumer Services:** Consumer services organizations are those that provide services to individual consumers, as opposed to businesses. There are many industries represented in consumer services, offering careers in fields such as advertising, apparel, consulting, entertainment, health care, hospitality, law, personal services, online services, real estate, and travel.

The largest part of any consumer services job is working well with people to solve problems, which requires a positive attitude and good communications skills. Because of the wide range of opportunities and types of jobs in consumer services, educational requirements can vary from a high school diploma and on-the-job training to internships and graduate degrees. Some consumer services career paths, particularly in counseling or sales, require licenses or certifications.

Unit 1: Career Management		
Career Explorations I	Assignments	
	1. Course Overview	14. Project: Basic Employability Skills*
	2. The Purpose of Work	15. Problem Solving
	3. Personal Benefits of Work	16. Project: Problem Solving*
	4. Wages and Employment Benefits	17. Lifelong Learning and Technology
	5. Project: Time Sheet	18. Career Clusters
	6. Project: Earnings Statement	19. Project: Career Clusters Research Tri-fold Brochure*
	7. Lifestyle Goals	20. Quiz: Elements of Work
	8. Project: Lifestyle Budget	21. Special Project*
	9. Societal Benefits of Work	22. Review
	10. Quiz: What is Work?	23. Test
	11. Basic Work Qualifications	24. Glossary and Credits
	12. Work Environment	
	13. Basic Employability Skills	

Unit 2: Introduction to Careers in Health Sciences		
Career Explorations I	Assignments	
	1. Medicine from Ancient Times Through the Middle Ages	8. Advances in Medical Imaging
	2. Medicine in the Seventeenth and Eighteenth Centuries	9. Innovations in Transplantation
	3. The Rise of Modern Medicine	10. Project: Genetics
	4. Project: Ancient vs. Modern Medical Practices	11. Project: How Technology is Used in Medicine
	5. Project: Different Health Career Possibilities	12. Quiz: Recent Advances in Science and Technology
	6. Quiz: History of Medicine and Medical Discovery	13. Special Project*
	7. Molecular Technology: Gene Chips	14. Test
		15. Glossary and Credits

Unit 3: Introduction to Hospitality and Tourism Systems		
Career Explorations I	Assignments	
	1. Travel Terms	9. The Countries We Visit — Part 2
	2. Segments of the Travel Industry	10. Project: Geographic Basics and Where We Travel
	3. Travel Product Distribution and Why We Travel	11. Project: The Countries We Visit
	4. Project: Travel Terminology	12. Quiz: The Geography of Travel
	5. Project: Segments of the Travel Industry	13. Special Project*
	6. Quiz: The Foundations of Travel	14. Test
	7. Geographic Basics and Where We Travel	15. Glossary and Credits
	8. The Countries We Visit — Part 1	

Unit 4: Introduction to Human Services		
Career Explorations I	Assignments	
	1. Solving Problems vs. Teaching Problem-Solving Skills	8. Policy and Program-Planning Interventions
	2. Types of Populations, Services, and Fulfilling Needs	9. Project: Designing A Human Services Organization
	3. Project: Let's Get Happy and Let's Get Rich	10. Administration
	4. What Human Services Organizations Do	11. Project: Life After High School
	5. Project: Know Your Surroundings	12. Quiz: Providers of Human Services
	6. Quiz: History, Standards, and Overarching Mission	13. Special Project*
	7. Direct Service Interventions	14. Test
		15. Glossary and Credits
Unit 5: Introduction to Consumer Services		
Career Explorations I	Assignments	
	1. What are Consumer Services?	8. Safety Within the Organization
	2. Customer Service and Consumer Advocacy	9. Project: Drafting a Safety Policy
	3. Project: Personal Skills Evaluation	10. External Influences on Consumer Services
	4. Professional Organizations, Certifications, and Resources	11. Project: Interview-based Article on Sustainability
	5. Project: Building a Portfolio	12. Quiz: Organizational Structure
	6. Quiz: Introduction and Basic Competencies	13. Special Project*
	7. Organizational Structures	14. Test
		15. Glossary and Credits
Unit 6: Course Review, Project, and Exam		
CE1	Assignments	
	1. Course Project: Decisions, Decisions*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Career Explorations II

The Career Explorations II course is designed to give seventh- and eighth-grade students an opportunity to explore various CTE subjects. Specifically, students will be able to learn about careers involving various technical fields from computers to agriculture.

Each unit introduces one particular field and explains its past, present, and future. The goal is to whet students' appetites for these careers. Students can then explore that career in more detail as a high school student.

Objectives

- Identify the basic components of a computer system and its use within a networking/communications environment.
- Discuss the history, development, and use of the Internet and mobile computing technology in business and society.
- Explore systems design and implementation.
- State the purpose of a computer network, and explain the role of network hardware in achieving that purpose.
- Identify the advancement of agriculture to the present day.
- Explain sustainable agriculture and its impact on society.
- Understand the STEM field along with the concepts, theories, practical applications, and STEM careers.

Unit 1: Information Technology		
Career Explorations II	Assignments	
	1. Course Overview	8. Internet in Business and Society
	2. Computer Systems and Networks	9. Human-Centered Technology
	3. Network Ethics and Security	10. Project: Biometrics Report
	4. Project: Benefit Analysis Study: Small Business Expansion	11. Mobile Computing
	5. Information Storage	12. Project: Geocache Treasure Hunt
	6. Project: Correspondence Between Stringer and Newspaper Editor: Media Preview	13. Quiz: Internet in Business and Society
	7. Quiz: Computer Systems and Networks	14. Special Project*
		15. Test
		16. Glossary and Credits

Unit 2: Introduction to Information Support and Services		
Career Explorations II	Assignments	
	1. Supporting the Business Workflow Model	8. Public Clouds
	2. Project: Understanding Software Development Models	9. Project: Moving to the Cloud
	3. Operating Systems, Hardware, and Software Selection	10. Private Clouds
	4. Project: Building a Mind Map	11. Hybrid Clouds
	5. Implementation and End-User Training	12. Project: Companies in the Hybrid Cloud
	6. Project: Preparing a Support Plan	13. Quiz: Cloud-Based Systems
	7. Quiz: On-Premise Systems	14. Special Project*
		15. Test
		16. Glossary and Credits

Unit 3: Introduction to Network Systems		
Career Explorations II	Assignments	
	1. Networking Concepts	9. Project: Slide Show: Networking Layers
	2. Project: Report: Technology Devices	10. Data Encapsulation
	3. Network Devices and Components	11. Project: Slide Show: Data Encapsulation
	4. Network Topologies	12. Quiz: OSI and TCP/IP Networking Models
	5. Project: Hardware Awareness	13. Special Project*
	6. Quiz: Computer Networks	14. Test
	7. The OSI Reference Model	15. Glossary and Credits
	8. The TCP/IP Networking Model	

Unit 4: Introduction to Agriculture, Food, and Natural Resources		
Career Explorations II	Assignments	
	1. People and Agriculture	9. Agriculture and the Economy
	2. Project: People, Agriculture, and Society	10. Project: Research and Learn: Commodities and Exchanges
	3. Advances in Agriculture	11. Food Distribution and Safety
	4. Today's Agricultural Consumer	12. Quiz: Agriculture's Role in Society
	5. Project: Percent Spent	13. Special Project*
	6. Quiz: Overview of Agriculture	14. Test
	7. Sustainable Agriculture	15. Glossary and Credits
	8. Project: Research and Learn: The Power of Pool	

Unit 5: Introduction to Stem		
Career Explorations II	Assignments	
	1. What is STEM Education?	8. Project: Create a Google Website
	2. The Great Discoverers and Discoveries	9. Get Organized: Mind Maps and Mind Mapping!
	3. Project: Timeline of Great Discoverers and Discoveries in the STEM Field	10. Education and Training in STEM
	4. Identify Careers in Science, Technology, Engineering, and Mathematics	11. Project: Mind Map of Personal STEM Education and Career Plan
	5. Project: Exploring Careers in the STEM Field	12. Quiz: What Lies Ahead?
	6. Quiz: Introduction	13. Special Project*
	7. Get Organized: Outlines and Outliners!	14. Test
		15. Glossary and Credits

Unit 6: Course Project, Review and Final Exam		
CE2	Assignments	
	1. Course Project: And the Results Are...*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Career Explorations III

The Career Explorations III course is designed to give seventh- and eighth-grade students an opportunity to explore various CTE subjects. Specifically, students will be able to learn about careers involving human-related services.

Each unit introduces one particular field and explains its past, present, and future. The goal is to whet students' appetites for these careers. Students can then explore that career in more detail as a high school student.

Objectives

- Understand the components of establishing a business.
- Describe the value of manufacturing to and its impact on American society and economy.
- Describe the nature and scope of the Transportation, Distribution, and Logistics Career Cluster and the role of transportation, distribution, and logistics in society and the economy.
- Identify skills, abilities, and talents needed for careers in Architecture and Construction and analyze how these relate to interest profiles.
- Understand what marketing is and its role both within the company and society.

Unit 1: Introduction to Business and Finance		
Career Explorations III	Assignments	
	1. Course Overview	10. Management and Leadership
	2. Introduction to Principles of Business	11. Project: Manager of the Year
	3. Project: NAICS!	12. Entrepreneurship
	4. Business Structures	13. Project: Entrepreneurship
	5. Business Ethics	14. Quiz 2: Leaders and Staffers
	6. Project: Business Ethics	15. Special Project*
	7. Quiz 1: Structure and Philosophy	16. Test
	8. Human Resources	17. Glossary and Credits
	9. Project: Creating a Job Application	
Unit 2: Introduction to Manufacturing		
Career Explorations III	Assignments	
	1. The Evolution of Manufacturing	9. Manufacturing Technologies
	2. How Manufacturers Are Organized	10. Project: The Impact of a New Technology
	3. Project: Learning About Your Interests	11. Manufacturing Operations
	4. The Impact of Manufacturing	12. Quiz 2: The Structure of Manufacturing
	5. Project: Emerging Technologies	13. Special Project*
	6. Quiz 1: Manufacturing's Impact on the Economy	14. Test
	7. Manufacturing Industries	15. Glossary and Credits
	8. Project: Learning More about a Manufacturing Subsection	

Unit 3: Introduction to Transportation, Distribution, and Logistics		
Career Explorations III	Assignments	
	1. Characteristics of Each Transportation Mode	9. The Regulatory and Competitive Environment for Transportation
	2. Project: Create a Shipping Plan	10. Careers in Transportation That Move People
	3. A Brief History of Transportation, Logistics, and the Economic Environment	11. Project: Understanding Educational Requirements for Specific Jobs
	4. Careers in Transportation	12. Quiz 2: Transportation of People and the Regulatory Environment
	5. Project: A Week in the Life of a Transportation Worker	13. Special Project*
	6. Quiz 1: Modes of Transportation	14. Test
	7. Mass Transportation	15. Glossary and Credits
	8. Project: FAA Guidelines for Pilots	

Unit 4: Introduction to Architecture and Construction		
Career Explorations III	Assignments	
	1. Design and Pre-Construction: The Field at a Glance	10. Job Zones and Resources
	2. Project: Exploring Nonprofit Construction	11. Project: Learning to Teach Others About What You Know
	3. Construction Site Management	12. The Bigger Picture: The Role of Architecture and
	4. Project: Analyze a Local Construction Project	13. Construction in the US Economy
	5. Maintenance and Operations	14. Quiz 2: How You Can Shape the Built Environment
	6. Quiz 1: Pathways: The Built Environment as an Interrelated System	15. Special Project*
	7. Department of Labor O*NET Career Tools	16. Test
	8. Design and Pre-Construction: The Field at a Glance	17. Glossary and Credits
	9. Project: Maker Essay	

Unit 5: Introduction to Marketing		
Career Explorations III	Assignments	
	1. Marketing	9. Project: Protecting Consumers from Harmful Products
	2. Project: Is There Truth in Advertising?	10. Sustainability
	3. The Marketing Process	11. Project: Sustainability Initiative
	4. Marketing Research	12. Quiz 2: Ethics and Sustainability
	5. Project: Identifying a Market	13. Special Project*
	6. Quiz 1: Marketing	14. Test
	7. Ethics	15. Glossary and Credits
	8. Ethical Issues	

Unit 6: Course Project, Review, and Final Exam		
	Assignments	
	1. Course Project	3. Exam
	2. Review	

(*) Indicates alternative assignment

Keyboarding and Applications

Keyboarding and Applications is a semester-long elective that teaches students keyboarding skills, technical skills, effective communication skills, and productive work habits. In this course, students will learn about proper keyboarding technique. Once students have been introduced to keyboarding skill, lessons will include daily practice of those skills. Students will gain an understanding of computer hardware, operating systems, file management, and the Internet. In addition, they will apply their keyboarding skills and create a variety of business documents, including word processing documents and electronic presentations.

Objectives

- Identify various technologies, current and emerging.
- Select the appropriate technology to complete a task.
- Use the computer's operating system to execute work responsibilities.
- Demonstrate proper keyboarding technique.
- Improve speed and accuracy of keyboarding skills.
- Create word-processing documents with columns, graphics, and bulleted lists.
- Create and deliver an effective presentation following presentation guidelines.
- Effectively navigate the Internet and search for information.
- Evaluate a Web site in terms of reliability.
- Demonstrate communication skills for obtaining and conveying information.
- Send and receive information using electronic mail, following appropriate guidelines.

Unit 1: Computer Hardware	
Keyboarding and Applications	Assignments
	1. Course Overview
	2. Hardware and Software
	3. Current Business Technology
	4. Quiz 1: Overview of Hardware and Software
	5. Alternate Quiz 1—Form A: Overview of Hardware and Software *
	6. Alternate Quiz 1—Form B: Overview of Hardware and Software*
	7. Case Studies
	8. Emerging Technology
	9. Project: Defining Technical Terms
Keyboarding and Applications	10. Quiz 2: Business Solutions
	11. Alternate Quiz 2—Form A: Business Solutions*
	12. Alternate Quiz 2—Form B: Business Solutions*
	13. Project: Technology in Business
	14. Special Project*
	15. Review
	16. Test
	17. Alternate Test—Form A*
	18. Alternate Test—Form B *
	19. Glossary and Credits
Unit 2: Keyboarding	
Keyboarding and Applications	Assignments
	1. Keyboarding Pretest
	2. Keyboarding Exercises
	3. Number Keypad
	4. Keyboarding Practice
	5. Project: Timed Typing Tests
	6. Special Project*
	7. Review
	8. Test
	9. Alternate Test—Form A*
	10. Alternate Test—Form B*
	11. Glossary and Credits

Keyboarding and Applications	Unit 3: Computer Operating Systems	
	Assignments	
	1. What Is an Operating System?	8. Project: Customize Your Desktop
	2. Getting Started—Exploring the Desktop	9. Special Project*
	3. Using the Interface	10. Review
	4. File Management	11. Test
	5. Quiz 1: Operating Systems and File Management	12. Alternate Test—Form A*
	6. Alternate Quiz 1—Form A: Keyboarding Skills*	13. Alternate Test—Form B*
	7. Alternate Quiz 1—Form B: Keyboarding Skills*	14. Glossary and Credits

Keyboarding and Applications	Unit 4: Word Processing	
	Assignments	
	1. Word Processing Basics	10. Newsletters
	2. Writing and Editing a Document	11. Project: Creating a Newsletter
	3. Project: Creating a Memo	12. Quiz 2: Keyboarding Skills
	4. Formatting	13. Alternate Quiz 2—Form A: Keyboarding Skill*
	5. Project: Writing Assignment	14. Alternate Quiz 2—Form B: Keyboarding Skill*
	6. Quiz 1: Introduction to Word Processing	15. Special Project*
	7. Alternate Quiz 1—Form A: Introduction to Word Processing*	16. Review
	8. Alternate Quiz 1—Form B: Introduction to Word Processing*	17. Test
	9. Copying, Cutting, and Pasting	18. Alternate Test—Form A*
		19. Alternate Test—Form B*
		20. Glossary and Credits

Keyboarding and Applications	Unit 5: Presentation Technology	
	Assignments	
	1. What is Presentation Technology?	12. Content
	2. How is Presentation Technology Used?	13. Layout
	3. Quiz 1: An Introduction to Presentation Technology	14. Putting It All Together
	4. Alternate Quiz 1—Form A: An Introduction to Presentation Technology*	15. Quiz 3: Presentation Planning
	5. Alternate Quiz 1—Form B: An Introduction to Presentation Technology*	16. Alternate Quiz 3—Form A: Presentation Planning*
	6. Working with Text	17. Alternate Quiz 3—Form B: Presentation Planning*
	7. Working with Graphics	18. Project: Creating a Presentation
	8. Working with Special Effects	19. Special Project*
	9. Quiz 2: Presentation Guidelines	20. Review
	10. Alternate Quiz 2—Form A: Presentation Guidelines*	21. Test
	11. Alternate Quiz 2—Form B: Presentation Guidelines*	22. Alternate Test—Form A*
		23. Alternate Test—Form B*
		24. Glossary and Credits

Unit 6: Internet	
Keyboarding and Applications	Assignments
	1. Internet Browsers
	2. Internet Strategies
	3. Finding Reliable Internet Resources
	4. Quiz: Introduction to the Internet
	5. Alternate Quiz—Form A: Introduction to the Internet*
	6. Alternate Quiz—Form B: Introduction to the Internet*
	7. Project: The History of the Internet
	8. Special Project*
	9. Review
	10. Test
	11. Alternate Test—Form A*
	12. Alternate Test—Form B*
	13. Glossary and Credits

Unit 7: Communication Skills	
Keyboarding and Applications	Assignments
	1. Communication Skills
	2. Electronic Communication Skills
	3. Beyond E-mail
	4. Project: Revising E-mail
	5. Quiz 1: Overview of Effective Communication Skills
	6. Alternate Quiz 1—Form A: Overview of Effective Communication Skills*
	7. Alternate Quiz 1—Form B: Overview of Effective Communication Skills*
	8. Workplace Skills, Habits, and Attitudes
	9. Active Listening
	10. Quiz 2: Desirable Workplace Skills, Habits, and Attitudes
	11. Alternate Quiz 2—Form A: Desirable Workplace Skills, Habits, and Attitudes*
	12. Alternate Quiz 2—Form B: Desirable Workplace Skills, Habits, and Attitudes*
	13. Special Project*
	14. Review
	15. Test
	16. Alternate Test—Form A *
	17. Alternate Test—Form B*
	18. Glossary and Credits

Unit 8: Course Review and Exam	
K&A	Assignments
	1. Review
	2. Exam
	3. Alternate Exam—Form A*
	4. Alternate Exam—Form B*

(*) Indicates alternative assignment

Principles of Coding

Principles of Coding is designed to introduce middle school students to the power of coding. Computer literacy has become just as important as reading and math literacy in the 21st Century. No matter what career students select, learning even the basics of coding and computers will benefit them. Additionally, every year there is a standing demand for 120,000 people who are trained in computer science. Jobs in this industry are growing at more than two times the national average of any other field ⁱ.

Throughout this course, students are not only introduced to the basics of coding, but delve deeply into the thought processes behind designing technology. Right from the start, students learn the Engineering Design Process and follow this process to create games, simulations, and even a mobile application. Students learn the connection between the core subjects of English Language Arts and Math to Computer Science. Students also examine the impact of technology from a global perspective. The content was written to be highly-engaging for the middle-school audience. Multimedia and interactive elements are built into every lesson to ensure a high-level of student engagement throughout.

Curriculum designed for this course was guided by the standards from the Computer Science Teacher's Association. These nationally recognized standards are designed to "provide the foundation for a complete computer science curriculum and its implementation at the K–12 level." These standards integrate computer science learning with core subjects.

More specifically student will learn the following.

Unit 1 – Computational Thinking. Students are introduced to the course by learning that problems are all around us and that programming can offer many solutions to these problems. Students learn the Engineering Design Process and Creative Problem Solving Process. Students are also introduced to *Scratch*. This visual coding program will be the basis for the coding work in the first part of the course. Students apply their understanding of algorithms and programming language to build an animated music video in Scratch. Students also begin to develop a game using Scratch by applying the computational thinking and practices of experimenting and iterating, testing, debugging, reusing and remixing, abstracting, and modularizing.

Unit 2 – Computer Practice and Programming. Students delve deeper into computers as machines. Students will differentiate computers with other kinds of machine systems. Students will also deepen their understanding of code and explain how it aids in analog-to-digital transformations. Students apply this understanding by designing a computing system. Students also analyze the positive and negative impacts of computing on human culture. Learners continue to build in Scratch, learning how to create interactive art and graphic effects.

Unit 3 – Data and Information. Students are introduced to computer modeling and simulations. They will begin to identify the kinds of problems that could be solved using modeling and simulations. Simulation games that model physics phenomena are examined to convey the concept that real-world phenomena can be simulated in a computer game or app. Learners will then explore issues related to the concepts of equity, access, and power of technology and the Internet in a global society. A discussion on cybersecurity and digital citizenship follow. Students will apply their learning by creating a game or interactive story by using variable and models within *Scratch*.

Unit 4 – Connecting Math and Computer Science. Math is the “fuel” that runs computers. In this unit, students will explore this idea more deeply. Students build on their understanding of modeling by looking more closely at the types and elements of models. Students are introduced to the important topic of Cyber Ethics, as well as robotics and artificial intelligence. Students will apply their learning by choosing a real-world problem and developing a simulation that attempts to solve the problem *using Scratch*. Students will also discover the basic building block of programming – logic. Mathematical topics of Boolean algebra, binary numbers, logic, sets, and functions are also taught. For the final project in this unit, students will use combinational logic to illustrate how the design of complex binary logic functions make up the components inside a digital device, such as the buzzer on a car, a blender, or a washing machine.

Unit 5 – Mobile Technology and Society. For the final instructional unit of the course, students will be introduced to mobile technology such as mobile computing tablets and smartphones. Learners will also explore the impact of technology on education, the workplace, and society. Students apply their skills by creating a mobile app using App Inventor.

Unit 1: Computational Thinking		
Principles of Coding	Assignments	
	1. Course Overview	12. Quiz 2: Parallelization, Multiple Paths, Search/Sort, and Sequences
	2. Introduction to Creative Computing	13. Alternate Quiz 2 - Form A: Parallelization, Multiple Paths, Search/Sort, and Sequences*
	3. Introduction to Scratch	14. Alternate Quiz 2 - Form B: Parallelization, Multiple Paths, Search/Sort, and Sequences*
	4. Exploring in Scratch	15. Project: Animated Music Video
	5. Project: Debugging 101	16. Broadcast Messages
	6. Quiz 1: Basic Algorithmic Problem Solving and Sequencing	17. Project: Make a Game in Scratch
	7. Alternate Quiz 1 - Form A: Basic Algorithmic Problem Solving and Sequencing*	18. Special Project*
	8. Alternate Quiz 1 - Form B: Basic Algorithmic Problem Solving and Sequencing*	19. Unit Review
	9. Project: Storytelling Through Dialogue	20. Test
	10. Computational Concepts	21. Alternate Test - Form A*
	11. Animation Concepts	22. Alternate Test - Form B*
		23. Glossary and Credits
Unit 2: Computer Practice and Programming		
Principles of Coding	Assignments	
	1. What is a Computer?	12. Alternate Quiz 2 - Form A: Career Connections and Graphic Solutions*
	2. Computers Are Everywhere	13. Alternate Quiz 2 - Form B: Career Connections and Graphic Solutions*
	3. Project: Design a Computing Device	14. Project: Customized Design Project
	4. Quiz 1: Computing Devices	15. Special Project*
	5. Alternate Quiz 1 - Form A: Computing Devices*	16. Unit Review
	6. Alternate Quiz 1 - Form B: Computing Devices*	17. Test
	7. Career Connections	18. Alternate Test - Form A*
	8. Computing: A Double-Edged Sword	19. Alternate Test - Form B*
	9. Interactive Art and Graphic Effects	20. Glossary and Credits
	10. Graphic Design in Scratch	
	11. Quiz 2: Career Connections and Graphic Solutions	

Unit 3: Data and Information		
Principles of Coding	Assignments	
	1. Introduction to Computer Modeling and Simulation	12. Alternate Quiz 2 - Form A: Value, Security, Responsibility, and Citizenship*
	2. Simulation Game Examples	13. Alternate Quiz 2 - Form B: Value, Security, Responsibility, and Citizenship*
	3. Exploration of Simulation Modeling Games	14. Variable Types, Classes, and Models
	4. Quiz 1: Modeling, Simulation, Games	15. Game or Interactive Story Using Variables and Models
	5. Alternate Quiz 1 - Form A: Modeling, Simulation, Games*	16. Project: Group Evaluation / Peer Evaluation
	6. Alternate Quiz 1 - Form B: Modeling, Simulation, Games*	17. Special Project*
	7. Project: Evaluation of Simulation Modeling Problems	18. Unit Review
	8. Global Citizenship	19. Test
	9. Project: Value and Security	20. Alternate Test - Form A*
	10. Project: Responsible Citizens	21. Alternate Test - Form B*
	11. Quiz 2: Value, Security, Responsibility, and Citizenship	22. Glossary and Credits

Unit 4: Connecting Math and Computer Science		
Principles of Coding	Assignments	
	1. Computer Model Analysis	15. Alternate Quiz 2 - Form B: Historical Perspectives, Ethics, Human/Machine Differentiation, Abstraction, Interdisciplinary Applications, and Run Analysis*
	2. Evaluate Industry Models	16. Introduction of the Full Network Stack
	3. Limitations of Modeling and Simulations	17. Introduction to Digital Logic Elements
	4. Select Computer Model of Real-World Simulation	18. Boolean Algebra
	5. Project: Evaluating Models	19. Project: Digital Design Project
	6. Quiz 1: Representational Accuracy	20. Quiz 3: Hierarchy and Abstraction, Math/Science Connections, Interdisciplinary Thinking
	7. Alternate Quiz 1 - Form A: Representational Accuracy*	21. Alternate Quiz 3 - Form A: Hierarchy and Abstraction, Math/Science Connections, Interdisciplinary Thinking*
	8. Alternate Quiz 1 - Form B: Representational Accuracy*	22. Alternate Quiz 3 - Form B: Hierarchy and Abstraction, Math/Science Connections, Interdisciplinary Thinking*
	9. Cyber Ethics	23. Special Project*
	10. The Interconnected Human Race	24. Unit Review
	11. Introduction to Digital Media - Graphics Software - Robotics - Artificial Intelligence	25. Test
	12. Project: Scratch Simulation Project	26. Alternate Test - Form A*
	13. Quiz 2: Historical Perspectives, Ethics, Human/Machine Differentiation, Abstraction, Interdisciplinary Applications, and Run Analysis	27. Alternate Test - Form B*
	14. Alternate Quiz 2 - Form A: Historical Perspectives, Ethics, Human/Machine Differentiation, Abstraction, Interdisciplinary Applications, and Run Analysis*	28. Glossary and Credits

Unit 5: Mobile Technology and Society		
Principles of Coding	Assignments	
	1. Hardware Design and Function	12. Quiz 2: Elements of Designing, Developing, Publishing, and Presenting Products
	2. Corrective Troubleshooting	13. Alternate Quiz 2 - Form A: Elements of Designing, Developing, Publishing, and Presenting Products*
	3. Mobile Devices and Applications	14. Alternate Quiz 2 - Form B: Elements of Designing, Developing, Publishing, and Presenting Products*
	4. Mobile Applications in Society	15. Bouncing Ball App Inventor
	5. Technology as a Tool	16. Finger Painting Without the Mess
	6. Quiz 1: Hardware vs Software, Systems, Networks, Tools, and Problem Diagnostics	17. Special Project*
	7. Alternate Quiz 1 - Form A: Hardware vs Software, Systems, Networks, Tools, and Problem Diagnostics*	18. Unit Review
	8. Alternate Quiz 1 - Form B: Hardware vs Software, Systems, Networks, Tools, and Problem Diagnostics*	19. Test
	9. Project: Open Design	20. Alternate Test - Form A*
	10. Introduction to App Inventor	21. Alternate Test - Form B*
	11. Talk to Me App	22. Glossary and Credits
Unit 6: Review and Exam		
POC	Assignments	
	1. Course Review	3. Alternate Final Exam - Form A*
	2. Final Exam	4. Alternate Final Exam - Form B*

(*) Indicates alternative assignment

Architecture and Construction

Introduction to Careers in Architecture and Construction

The goal of this course is to provide students with an overview of careers in Architecture and Construction in order to assist with informed career decisions. This dynamic, rapidly evolving career cluster is comprised of three pathways (fields): Design and Pre-Construction (Architecture and Engineering); Construction (Construction and Extraction); and Maintenance and Operations (Installation, Maintenance, and Repair). The Architecture and Construction career cluster is defined as careers in building, designing, managing, maintaining, and planning the built environment.

The built environment is not limited to buildings and structures—or to urban environments. A much broader view of the built environment helps students gain a better and more holistic understanding of the impact of the Architecture and Construction industries. The built environment encompasses all zones of human activity—from natural conservation areas with minimal human intervention to highly dense areas with tall skyscrapers and intricate highway systems to suburban cul-de-sacs. The interrelated components that make up the built environment are as varied and unique as the professionals who help shape it.

Objectives

- Differentiate each Pathway within the Career Cluster and describe the careers in each pathway
- Locate and evaluate career information in order to make an informed decision about career goals
- Identify skills, abilities, and talents needed for careers in Architecture and Construction and analyze how these relate to interest profiles
- Describe and characterize key technical and creative requisites for each educational path that fits the student's primary area (or areas) of interest
- Analyze the impact of the "green economy" on careers in Architecture and Construction.
- Research and predict the growth of industries that comprise the Career Cluster; analyze the ways that technology, innovation, and creative thinking have impacted these industries
- Describe and differentiate key attributes of careers
- Argue how Architecture and Construction careers may change as the economy grows or shrinks
- Evaluate the impact and importance of the regulation of Architecture and Construction in the following areas: planning and zoning, environmental regulations, OSHA regulations, building codes, and regulations ensuring equal access such as the Americans with Disabilities Act (ADA)

This is an introductory course in careers in architecture and construction. As such, there are no prerequisites other than interest in the subject for the student. Students will need online access in order to locate the research materials they will need to review. Some course projects also require online research. Microsoft Office software or the equivalent is required since the student will create presentations using PowerPoint.

Certain projects suggest some minimal physical field work, but virtual alternatives are available should students lack access to the suggested physical sites.

Communications skills, personal skills in recall and observation, experience assessment, and self-analysis are part of certain projects. Some projects direct students to interact with others to some extent; this should be within reach for any student.

Intro. to Careers in Architecture and Construction	Unit 1: Introduction to Careers in Architecture and Construction	
	Assignments	
	1. Course Overview	11. Project: Learning to Teach Others About What You Know
	2. Design and Pre-Construction: The Field at a Glance	12. The Bigger Picture: The Role of Architecture and Construction in the US Economy
	3. Project: Exploring Nonprofit Construction	13. Quiz 2: How You Can Shape the Built Environment
	4. Construction Site Management	14. Special Project*
	5. Project: Analyze a Local Construction Project	15. Test
	6. Maintenance and Operations	16. Course Project Part 1: Architecture and Construction: Industry and Careers in Focus*
	7. Quiz 1: Pathways: The Built Environment as an Interrelated System	17. Glossary and Credits
	8. Department of Labor O*NET Career Tools	
	9. Project: Maker Essay	
	10. Job Zones and Resources	
Intro. to Careers in Architecture and Construction	Unit 2: Building the Future: The Art and Science of Buildings	
	Assignments	
	1. The Architect and Engineer	9. Commercial Construction
	2. Project: Visualization for Architects and Engineers	10. The Role of Innovation in the Built Environment
	3. Education for Licensed Professions: Architects and Engineers	11. Project: Materials
	4. The Design-Build Revolution	12. Quiz 2: The Evolution of Buildings
	5. Project: Design Professionals Doing Humanitarian Work	13. Special Project*
	6. Quiz 1: The Architect and the Engineer	14. Test
	7. Residential Construction	15. Course Project Part 2: Understanding LEED Certification and Green Building: Preparing Your Building for LEED Certification*
	8. Project: New Directions in Residential Construction	16. Glossary and Credits
Intro. to Careers in Architecture and Construction	Unit 3: Green Jobs in Architecture and Construction	
	Assignments	
	1. Green Building	9. Project: Preparing Your Own Emergency Kit
	2. Regulation and Assessment of Green Building	10. Green Certification and Green Skills
	3. Project: Find a LEED Certified Building and Analyze It	11. Project: Design a New School Locker
	4. Research and Development and its Impact on Green Building and Construction	12. Quiz 2: Green Jobs
	5. Project: Home Energy Audit Assignment	13. Special Project
	6. Quiz 1: The Green Economy	14. Test
	7. Green Economy	15. Course Project Part 3: Courses of Study for Architecture and Construction Careers
	8. Green Jobs	16. Glossary and Credits

Intro. to Careers in Architecture and Construction	Unit 4: The Arts and the Built Environment: Jobs for Creatives	
	Assignments	
	1. Pre-Construction and Design Specialists	9. The Trades: The Almost-Lost Arts of Master Craftsmen
	2. Project: Landscape Architecture in Large-Scale Action Essay	10. Project: Master Craftsmen Resources
	3. Interdisciplinary Work Within Specializations	11. The Future of the Past
	4. Project: Drawing and Geometry: Sketching Exercise	12. Quiz 2: History and Tradition of the Building Arts
	5. The Role of Art, History, and Research in Design	13. Special Project*
	6. Quiz 1: Pre-Construction and Design Specialists	14. Test
	7. Historical Research and Preservation in Architecture and Construction	15. Course Project Part 4: Sustainable Development Presentation*
	8. Project: National Register of Historic Places Project	16. Glossary and Credits

Intro. to Careers in Architecture and Construction	Unit 5: Building the City	
	Assignments	
	1. Planning	10. Project: The Well-Photographed Bridge Assignment
	2. Project: Future City Design	11. The Need for Resilient Infrastructure
	3. Zoning	12. Quiz 2: Civil Engineering
	4. Project: Retrofitting Urban Sprawl Assignment	13. Special Project*
	5. Overview of Prevailing Planning Trends	14. Test
	6. Quiz 1: Planning	15. Course Project Part 5: Computer-Aided Design and You*
	7. Evolution of Civil Engineering	16. Glossary and Credits
	8. Project: Tinkercad 3D Modeling Assignment	
	9. Environmental and Civil Engineering	

ICAC	Unit 6: Course Review, and Exam	
	Assignments	
	1. Course Project Part 6: Now That You Know: Where Do You See Yourself in the Architecture and Construction Career Cluster?*	2. Review
		3. Exam

(*) Indicates alternative assignment

Construction Careers

This course in Construction Technology introduces students to the basics of construction, building systems, engineering principles, urban planning, and sustainability. Students will learn the key techniques in building all types of buildings, as well as the key individuals involved in each step of the process. Many lessons present information on green building techniques and concepts that are becoming a standard part of the construction industry. Safety practices are emphasized in several lessons because construction is one of the most dangerous industries; students will learn that there is no way to be successful in construction without taking such issues seriously. Toward this end, the lessons also explore regulatory agencies and guidelines established for the purpose of protecting not only construction workers but also the occupants of a building.

The evolution of building types and materials informs a discussion on modern techniques and materials, as the technology developed through the field of building science makes advances allowing buildings to be more efficient, more comfortable, and more impervious to natural disasters. We consider traditional and sustainable building materials, which are sometimes one and the same. This includes lumber, masonry, glass, steel, tar, and asphalt. Concrete deserves special mention as the world's most common building material and its importance in a building's foundation. In terms of engineering concepts, we study how buildings and structures handle forces of compression, tension, and shear. Building processes include shell and core construction, curtain walls, heavy timber frame construction, light frame construction, different types of foundations, and different truss systems for roofs.

Highlighted careers include hands-on construction positions such as carpenter, ironworker, mason, and plumber, but also those involved in the design of a building, such as architects and engineers, and those involved in the regulatory aspects of the built environment, including urban planners and building inspectors. Toward that end, the development and adoption of model building codes are discussed, along with the work of the Occupational Safety and Health Administration (OSHA), which is the primary regulatory agency devoted to workplace safety. Mechanical engineers, civil engineers, historical preservationists, developers, and general contractors are some of the other professionals that influence the design and construction of buildings.

To better understand how a building impacts the environment, we study the formal process of life-cycle assessment, which considers how resources are created, maintained, used, and disposed of throughout the life of a building. The cradle-to-grave process of a building is discussed. How a foundation is laid, then how shell and core construction works, then the installation of systems—HVAC, electric, plumbing—including a roof, curtain walls, and cladding. We discuss how buildings are designed for efficient operation for the bulk of their life cycle, and finally how they are demolished. We discuss how a proper building envelope functions and how different cladding systems help prevent thermal transfer while allowing a building to breathe.

Urban planning and land use are increasingly part of the dialogue in which builders, developers, and construction workers are engaged. Every building is bound by zoning ordinances and building codes, which is an element all construction workers must understand in order to have sufficient insight into their jobs.

Two specialty construction fields that are becoming increasingly mainstream are green construction and historical preservation, driven by the U.S. Green Building Council's LEED rating system and the National Historical Preservation Act, respectively. We discuss the rise of green building systems, including solar roofs, green roofs, and grey-water systems, and the processes integral to historical preservation, which include lead and asbestos abatement, renovation, and adaptive reuse. These are growth areas for those interested in construction, and each offers individuals many options for specialization in cutting-edge techniques or in historical preservation techniques, both of which are highly valued in today's construction climate.

Objectives

- Describe the career opportunities available in construction and construction technology and the educational path for each profession or trade.
- Chart how a construction project proceeds from beginning to end, naming the stakeholders and workers necessary at each stage of the process.
- Explain the concept of life-cycle assessment and its role in sustainable construction.
- Compare the different techniques and materials involved in building a residence with those involved in building a commercial structure or civil engineering project.
- Evaluate and explain various laws, regulations, and professions designed to make construction sites safe for workers and buildings safe for their inhabitants.
- Summarize shell and core construction, beginning with an explanation of various types of foundations and by examining wood-frame construction versus steel-frame construction.
- Explain how a building functions as a system by describing the purpose of a building's envelope, roof, and cladding materials.
- Identify trends in sustainable construction, urban planning, and historical preservation.

This class has no prerequisites, but students should be interested in the built environment and skilled jobs that are very hands-on. Experience conducting online research is a plus, and having access to a digital camera of some sort is important for completing several of the lesson projects. Students will need a computer and reliable access to the Internet, as well as a dedicated notebook for use as a journal.

A couple of projects involve going out into the community and conducting interviews. Thus, good communication skills and a sense of professionalism are a plus. Knowledge of or experience with power tools, carpentry, or any skilled trades is useful but not necessary.

Unit 1: Introduction to Careers in Construction Technology		
Construction Careers	Assignments	
	1. Course Overview	9. Plumbers, Electricians, and HVAC Professionals
	2. Construction Technology: Past, Present, and Future	10. Project: Create a Fact Sheet on Plumbing Tip: How to Fix a Running Toilet
	3. Project: Site View, Elevation View, and Plan View of Your House	11. Carpenters, Glaziers, and Other Tradespeople
	4. The Civil Engineer: Construction, Function, and Assessment	12. Project: Using Carpentry Skills to Create a Corrugated Cardboard Shadow Box
	5. Project: Be a Structural Engineer	13. Quiz 2: Building Systems and the Evolution of the Trades
	6. Contractors, Managers, and Foremen: Coordinating a Building Project	14. Special Project*
	7. Quiz 1: From Plans to Permanence: How Buildings Get Made	15. Test
	8. Excavators, Masons, and Ironworkers	16. Course Project Part 1: Design and Build Your Dream House*
		17. Glossary and Credits

Unit 2: Building Life-Cycle Assessment and Regulation		
Construction Careers	Assignments	
	1. Life-Cycle Assessment: Materials Manufacturing	8. Building Codes and Inspection
	2. Project: Analyze a Life-Cycle Assessment Case Study	9. Project: Interview a Building Inspector
	3. Life-Cycle Assessment and Construction Methods	10. Urban Planning and Zoning
	4. Life-Cycle Assessment: Demolition	11. Project: Plan Your Own Town
	5. Project: Construction and Demolition Materials in Single-Family Homes: Analyze an EPA Report	12. Quiz 2: Building Codes and Regulation
	6. Quiz 1: Life-Cycle Assessment: from Cradle to Grave	13. Special Project*
	7. Job-Site Safety and OSHA	14. Test
		15. Course Project Part 2: Your Dream House: Site Plan and Foundation*
		16. Glossary and Credits

Unit 3: Building Materials and Methods of Construction 1		
Construction Careers	Assignments	
	1. Shell and Core Construction: Foundations	9. Light-Frame Construction
	2. Project: Foundation Investigation: What's Beneath These World Landmarks	10. The Business of Building
	3. Shell and Core Construction: Concrete and Masonry	11. Project: Seattle's SR 99: The Alaskan Way Viaduct Replacement Tunnel
	4. Project: How to Build a Concrete-Framed Building	12. Quiz 2: Heavy- and Light-Frame Construction
	5. Steel-Frame Construction	13. Special Project*
	6. Quiz 1: Foundations and Shell and Core Construction	14. Test
	7. Heavy Timber-Frame Construction	15. Course Project Part 3: Your Dream House and Sustainable Design: Materials*
	8. Project: Joinery with Soap and Foam Board	16. Glossary and Credits

Unit 4: Building Materials and Methods of Construction 2		
Construction Careers	Assignments	
	1. Roof Structures and Styles	10. Building Science
	2. Roofing Trusses and Materials	11. Project: Hurricane Sandy and Building Science
	3. Project: The Triangle vs. The Rectangle	12. Quiz 2: The Envelope and External Finishes
	4. Green Roofs and Solar Roofs	13. Special Project*
	5. Project: Exploring Cool Roofs	14. Test
	6. Quiz 1: The Roof: Engineering Principles and Materials	15. Course Project Part 4: Your Dream House and Sustainable Design: Components of Green Building*
	7. The Building Envelope	16. Glossary and Credits
	8. Types of Building Cladding	
	9. Project: Do-It-Yourself Cladding	

Unit 5: Green Technology, Sustainability, and Preservation		
Construction Careers	Assignments	
	1. Sustainable Construction and Green Construction Codes	9. Project: Adaptive Reuse in Your Community
	2. Project: Sustainable Shelter: The FEMA Trailer vs. the Katrina Cottage	10. Preservation Trades Education and Safety
	3. Green and Not-So-Green Building Materials	11. Project: Finding Work in the Field of Historic Preservation
	4. Green Construction Jobs	12. Quiz 2: Historical Preservation and Construction
	5. Project: Interview a Green Builder	13. Special Project*
	6. Quiz 1: Green Construction Technology	14. Test
	7. Historic Preservation	15. Course Project Part 5: Schedule Your Dream Home Build*
	8. Adaptive Reuse	16. Glossary and Credits
Unit 6: Course Review, and Exam		
CC	Assignments	
	1. Course Project Part 6: Your Dream House: Putting It All Together*	2. Review
		3. Exam

(*) Indicates alternative assignment

Arts, A/V Technology and Communications

Introduction to Careers in Arts, A/V Technology and Communications

This introductory course provides comprehensive information on five separate areas of arts and communications as potential educational and career pathways. Students who are interested in careers across a broad spectrum of professional positions, including fine artist, telecommunications administrator, magazine editor, broadcast journalist, or computer graphics artist, will gain useful perspective on industry terminology, technology, work environment, job outlook, and guiding principles.

Each of the five units covers a specific area within its two chapters. Unit 1 focuses on audiovisual (A/V) technology in film, the arts, and businesses such as advertising. Students learn about job opportunities in a variety of settings and the training programs, degrees, and experience they may need to qualify for them. Unit 2 covers the performing arts, including careers both on and offstage. Unit 3 examines the exciting field of visual arts in depth, with discussions of artistic design principles, animation design, the work and training of multimedia artists, and developments in the burgeoning field of special effects and animation in studios worldwide. Unit 4 enters the world of printing technology and print publishing, including digital media. Students study technological evolution and advancements in printing since the invention of paper. A timeline of (predominantly U.S.) journalism gives students a glimpse into magazine editing, digital printing technology, broadcast journalism, and the legal and ethical issues of news reporting today. Finally, in Unit 5, students examine the telecommunications industry and learn more about careers in networking, phone technology, and communications and the training or certification needed for various specific positions.

Objectives

- Analyze the impact of the news media on society.
- Discuss the job responsibilities of various careers within the performing arts.
- Analyze the principles of animation and how and why imagery moves on the screen.
- Describe various A/V technology careers and their job requirements.
- Analyze various careers in printing technology, including educational and training requirements.
- Argue how art history influences modern visual arts.
- Outline the principles of design and assess their influence in all aspects of the visual arts.
- Demonstrate technical skills and the use of various equipment and tools used in audio/video production.
- Demonstrate the importance of mastering software tools used in digital art.
- Describe how art directors differ from fine artists.
- Describe key positions in film production and explain the duties and responsibilities of each position.
- Evaluate the influence of digital technology on the work of visual artists.
- Evaluate the economic outlook of careers in A/V technology and film.
- Examine the career opportunities and requirements in performing arts.
- Examine the educational requirements of various careers in A/V technology in film.
- Examine the interdependent relationship between editorial and technical elements in the news media.
- Explain skills needed to operate equipment and tools used in technical positions.
- Explain the dynamics of art created by collaborative teams compared to that of an individual multimedia artist.
- Explore career pathways in the production and distribution of media.
- Identify careers in fine arts and how to supplement income with artistic skills.
- Summarize the effects of technological advances on the news media and the communications industry.
- Summarize features of transmission lines and network connectivity.

As this course targets students interested in potential careers in the arts, some artistic ability or experience is assumed. However, there are many technical and writing careers presented in this course as well, so the course offers

a wealth of information for all students interested in working in arts management, in printing publishing, in news, and in communications fields (such as advertising, marketing, or sales, and in telecommunications).

Most of the careers and professional fields outlined in this course stress the need to understand terminology, the roles of others, and the importance of working as a team. Students need to consider interpersonal skills and should be able to discuss or consider workplace issues, including ethical and legal responsibilities, when working with others. Combining training and work experience during post-secondary education is a winning pathway in many of the careers evaluated. The course explores viable options and gives students opportunities to research specifics for their own plans.

Students need an aptitude for independent research, creative and critical thinking skills, and the ability to understand technical vocabulary and procedures at a foundational level.

Intro. to Careers in Arts, A/V Technology and Communications	Unit 1: Audio/Video Technology and Film	
	Assignments	
	1. Course Overview	10. Careers in Film: The Production Phase
	2. A/V Technology - Through the Years	11. Careers in Film: Post-Production
	3. Project: A Moment in Film or Audio History	12. Project: Filmmaking: Then and Now
	4. A/V Technology at Work	13. Quiz 2: Careers in A/V Technology in Film
	5. Project: Research Careers in Your Dream Field	14. Special Project*
	6. A/V Technology - Careers and Education	15. Test
	7. Quiz 1: Careers in Audio/Video Technology	16. Course Project Part 1: A/V Tech and You*
	8. Careers in Film: Development and Pre-Production	17. Glossary and Credits
	9. Project: Screenwriting 101	

Intro. to Careers in Arts, A/V Technology and Communications	Unit 2: Performing Arts	
	Assignments	
	1. Performing Arts in the Past	9. Project: Actors' Career Pathways
	2. Performing Arts in the Present	10. Designers: Set, Costume, Lighting and Sound
	3. Project: Creative Fundraising Online	11. Project: Set and Clothing Design Styles: 1970s and Today
	4. Overview of Production Managers in the Performing Arts	12. Quiz 2: Careers in A/V Technology in Film
	5. Project: Academic Programs in Production Management	13. Special Project*
	6. Quiz 1: Overview of Performing Arts	14. Test
	7. Playwrights, Screenwriters and Directors	15. Course Project Part 2: Your Pathway to Performing Arts*
	8. Actors, Dancers and Musicians	16. Glossary and Credits

Unit 3: Visual Arts		
Intro. to Careers in Arts, A/V Technology and Communications	Assignments	
	1. Principles of Design and Motion in Visual Arts	10. Project: The Latest Thing in Digital Art Technology
	2. Project: Analyze a Work of Art	11. Working Alone, in Collaboration, and in Teams
	3. The Art Director	12. Quiz 2: Multimedia and the Emergence of Digital Art
	4. Project: And the Art Direction Award Goes to...	13. Special Project*
	5. Being a Fine Artist	14. Test
	6. Quiz 1: Foundations of Visual Arts through Art Direction and Fine Arts	15. Course Project Part 3: Are You an Artist?*
	7. Multimedia Artists in the Workplace	16. Glossary and Credits
	8. Project: Your Dream Job as a Multimedia Artist	
	9. Keeping Up with Technology	

Unit 4: Printing Technology, Journalism, and Broadcasting		
Intro. to Careers in Arts, A/V Technology and Communications	Assignments	
	1. Printing Technology Through the Years	10. Journalism and Broadcast Careers
	2. Project: Printing with an Old Technology	11. Project: Reporter, News Anchor, or Technician?
	3. Digital Technology at Work	12. Quiz 2: Introduction to Journalism and Broadcasting
	4. Project: Digital Print Project	13. Special Project*
	5. Printing Technology: Careers and Education	14. Test
	6. Quiz 1: Introduction to Careers in Printing Technology	15. Course Project Part 4: Your Career in the Printing or News Industry*
	7. Journalism in the 20th Century	16. Glossary and Credits
	8. Project: A Major Moment in Journalism	
	9. Editing in the Media	

Unit 5: Telecommunications Systems		
Intro. to Careers in Arts, A/V Technology and Communications	Assignments	
	1. Regulations in the Telecommunications Industry	10. Project: Choose a Work Environment, Find a Job
	2. Project: Web Security Now and in the Future	11. Training and Certification in Telecommunications Careers
	3. Telecommunications Timeline from Telephone to Videoconference	12. Quiz 2: Overview of Careers in Telecommunications
	4. Telecommunications Transmission Methods	13. Special Project*
	5. Project: Explain the Cloud to Your Mom	14. Test
	6. Quiz 1: Overview of Telecommunications Systems	15. Course Project Part 5: Telecommute to Your Dream Job!*
	7. The Changing Nature of Telecommunications Technology	16. Glossary and Credits
	8. Project: Future Telecom Trends	
	9. Telecommunication Careers	

Unit 6: Course Project, Review, and Exam		
IAAVTC	Assignments	
	1. Course Project Part 6: Describing Plans for Exhibition or Distribution*	2. Review
		3. Exam

(*) Indicates alternative assignment

A/V Technology and Film Careers

This course discusses careers in audio/visual (AV) technology and film, and provides students with background about the required skills, education, equipment, and technology in this industry. Students will understand the collaborative team effort of many different professionals who make films, videos, audio, and TV programming. The course begins with an introduction to the history and development of AV technology and film, with subsequent units focusing on specific sectors of the industry and the stages for producing film and media. The concluding unit focuses on the finishing stages for exhibition, distribution, and reaching a market. In addition, the course will provide information about many different careers that are available to students who are interested in AV technology and film.

Objectives

- apply understanding of the technical and artistic elements of various careers
- analyze the importance of health, safety and environmental management systems, policies, and procedures common in arts, AV technology, and communications activities and facilities
- analyze the lifestyle implications and physical demands required in the arts, AV technology, and communications workplace
- evaluate the legal and ethical responsibilities required in the arts, AV technology, and communications workplace
- describe the career opportunities and means to achieve those opportunities in each of the arts, AV technology, and communications pathways.
- evaluate technological advancements and tools that are essential to occupations within the arts, AV technology, and communications career cluster.
- analyze the technical, artistic, critical thinking, and creative skills that are required to have successful careers in a competitive arts and communications environment

For topics in this course, it is helpful to students to be familiar with general concepts about the entertainment, broadcast, and information technology industries, as well as the basic skills for conducting research on websites.

If students are not familiar with these topics, it is important for them to familiarize themselves with online resources for audio, film, and technology concepts by visiting such sites as aes.org, or aicp.com. These websites will provide an introduction to audio production and filmmaking.

Unit 1: The History and Practices of A/V Technology and Film		
A/V Technology and Film Careers	Assignments	
	1. Course Overview	10. Project: Design a Multimedia Website for a Film Museum
	2. The History of Sound and Film	11. Policy and Regulations in Film, TV, and Media Creation
	3. The Development of the A/V Industries and Emergence of Corporations	12. Project: Short Video Report: Analyze a Commercial or TV Program
	4. Project: Mini-Documentary on a Hollywood Studio	13. Quiz 2: Principles and Practices in AV Technology and Film
	5. Technological Advances in Film and Sound into Modern Era	14. Special Project*
	6. Project: Diagramming a Piece of Film	15. Test
	7. Quiz 1: The History and Development of AV Technology and Film	16. Course Project Part 1: Developing a Film Treatment or Storyboard*
	8. Basic Tools, Techniques, and Equipment for Production	17. Glossary and Credits
	9. Basic Techniques for Synchronizing Audio and Video	

Unit 2: Equipment and Tools In A/V Technology and Film		
A/V Technology and Film Careers	Assignments	
	1. Audio Production: Basic Tools and Techniques	9. Project: Short Video Tutorial: How to Light an Interview
	2. Fundamentals of Electronics, Acoustics, Sound, and Video	10. Systems and Techniques for Post-production
	3. Project: Audio Documentary: History of Analog and Digital Audio	11. Project: Report: Video/Film Editing Software Products
	4. Tools, Technology, and Equipment to Produce in Audio and Video Formats	12. Quiz 2: Video Equipment and Technology
	5. Project: Illustrate an Audio Software User's Guide	13. Special Project*
	6. Quiz 1: Audio Equipment and Technology	14. Test
	7. Tools, Technology, and Equipment to Produce in Video and Film	15. Course Project Part 2: Writing a Pre-Production Plan Based on Your Storyboard or Treatment*
	8. Basic Operation and Set up of Camera and Lighting	16. Glossary and Credits
Unit 3: Pre-Production Planning and A/V & Film Technical Support		
A/V Technology and Film Careers	Assignments	
	1. Pre-Planning for Production	10. Pre-Planning Techniques and Requirements for Post-Production
	2. Scripts, Screenplays, and Treatments	11. Project: Write Instructions for Setting Bars and Tone
	3. Project: Write a Script or Screenplay	12. Quiz 2: Pre-Production Planning: Equipment and Technology
	4. Pre-Planning: Tools, Technology, and Equipment	13. Special Project*
	5. Project: Write Pre-Production Checklists	14. Test
	6. Quiz 1: The Importance of Pre-Production Planning	15. Course Project Part 3: Production Plan*
	7. Scripts, Screenplays, and Treatments and How They Inform Production	16. Glossary and Credits
	8. Project: Design a Storyboard	
	9. Equipment and Techniques for Video and Film	
Unit 4: Applying Equipment and Technology in the Production Stage		
A/V Technology and Film Careers	Assignments	
	1. Production	8. Camera, Sound, and Lighting, and Techniques and Process
	2. Project: Produce a Plan for a Production	9. Project: Make a Multimedia Presentation
	3. The Ways People Work Together During Production	10. Technicians and Support Roles During Production
	4. Technical Support Functions and Visual Technical Staff During Production	11. Project: Make a How-To Video or Instruction Guide
	5. Project: Develop a Gaffer Kit	12. Quiz 2: Video Equipment and Technology
	6. Quiz 1: Performing Tasks and Applying Skills During Production	13. Special Project*
	7. The Role and Function of the Management Team and Production Tasks	14. Test
		15. Course Project Part 4: Post-Production Plan*
		16. Glossary and Credits

AVTFC	Unit 6: Course Project, Review, and Exam	
	Assignments	
	1. Course Project Part 6: Describing Plans for Exhibition or Distribution*	2. Review 3. Exam

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Business Management and Administration

Business Law

This course is designed to provide students with the knowledge of some of the vital legal concepts that affect commerce and trade. First, they will gain some familiarity with how laws are created and interpreted. Then, they will be introduced to the types of businesses that can be created to engage in commerce as well as the contractual and liability considerations that can impact a business. Laws that affect how a business is regulated will also be reviewed, particularly the impact of administrative rules and regulations on a business.

As the students work through matters of law and business, they will also consider scriptural principles.

Global commerce and international agreements, treaties, organizations, and courts that can affect business will be discussed to get a better sense of what it means to "go global" with a business. This global emphasis will also survey what is prophesied in the Bible about buying and selling in the last days.

Consumer and environmental protections will be explained as well as bankruptcy options, should a business go insolvent. In particular, students will look at what the Bible has to say about the ethics of bankruptcy. Lastly, no business exists without experiencing some kind of dispute or another, and so we will review the options that exist for dispute resolution and alternative dispute resolution to provide a better understanding of how best to deal with such matters.

Objectives

- Develop a general overview of the legal system in the United States.
- Understand the types of businesses and corporations that exist.
- Develop insight into the formation of contracts.
- Learn about torts and liability considerations regarding torts.
- Develop an understanding of ethics and civil and criminal procedures.
- Develop an appreciation of the administrative law process along with the Commerce Clause and its effect on employment law.
- Comprehend the information about intellectual property law and e-commerce.
- Understand the global picture of international agreements and sources of international law, international trade, the UN and key organs and commissions, and the international courts created by treaties.
- Gain insight into consumer, environmental, and bankruptcy laws that can affect an individual and his or her business.
- Learn how to resolve disputes that may arise in the transaction of business through traditional or alternative means.

While there are no formal requirements for this course, it is important to understand that this is a challenging course requiring your best critical-thinking skills. The ability to conduct research, make lateral connections, and consider options not clearly outlined is a function of those who successfully practice the law. This course uses scenarios and case studies to apply the concepts offered and encourage creative thinking within the confines of the legal and ethical parameters. For the Christian student who is considering a career in the law, this course is a good primer.

Unit 1: Role of Law and Its Impact on Business		
Business Law	Assignments	
	1. Course Overview	10. Project: Starting a Business
	2. Law Sources: The Legislative and the Executive Branches	11. Partnerships
	3. Project: Drafting a Bill	12. Project: Partnerships
	4. Law Sources: The Constitution and the Judicial Branch	13. Corporations
	5. Project: A Supreme Court Case	14. Project: Understanding the Tender Offer
	6. The Bill of Rights and Fundamental Guarantees	15. Quiz 2: Corporations
	7. Project: A Comparison of Human Rights Bills	16. Special Project*
	8. Quiz 1: Sources Of Law and The Bill Of Rights	17. Test
	9. Sole Proprietorships and Agency	18. Course Project – Part 1: Role of Law and Its Impact on Business*
		19. Glossary and Credits
Unit 2: Legal Considerations in Business Law		
Business Law	Assignments	
	1. Contracts: Basic Elements of Contracts	11. Project: Lulu the Runaway Dog
	2. Project: Identifying Internet Agreements	12. Torts: Strict Liability and Nuisance
	3. Contracts: Uniform Commercial Code	13. Project: You be the Author: Write Your Own Newspaper Articles
	4. Project: Buyers, Sellers, and Warranties	14. Quiz 2: Torts
	5. Contract Defenses	15. Special Project*
	6. Project: Defensible Defenses	16. Test
	7. Quiz 1: Contracts	17. Course Project – Part 2: Legal Considerations in Business Law*
	8. Torts: Intentional Torts	18. Glossary and Credits
	9. Project: Review the Lemonade Stand Fact Pattern	
	10. Torts: Negligence	
Unit 3: Regulating a Business		
Business Law	Assignments	
	1. Ethics and the Law: Crimes Against Persons	10. Administrative Law and Adjudication
	2. Project: Know Your State's Penal or Criminal Code and Create Your Own Law	11. Project: News Stories on Federal Agencies
	3. Ethics and the Law: Crimes Against Property	12. Employment, Regulation, and Discrimination in the Workplace
	4. Project: Know Your White Collar Crimes	13. Prepare Scenarios Using Gidgits Galore
	5. Criminal Procedure	14. Quiz 2: Administrative Law, The Commerce Clause, and Employment Law
	6. Project: Create Your Own Crime	15. Special Project
	7. Quiz 1: Ethics and The Law – Criminal and Civil Procedure	16. Test
	8. Introduction to Administrative Law	17. Course Project – Part 3: Regulating a Business
	9. Project: Federal Agencies and Their Functions	18. Glossary and Credits

Unit 4: Global Commerce		
Business Law	Assignments	
	1. Intro to Intellectual Property: Patents	10. International Trade, GATT, and the WTO
	2. Project: Developing a Patent	11. Governmental Systems of the United Nations
	3. Intro to Intellectual Property: Trademarks and Copyrights	12. Project: International Courts and Adjudication
	4. Project: Applying for a Trademark	13. Quiz 2: International Governmental Systems and Law
	5. Electronic Commerce	14. Special Project*
	6. Project: Privacy Issues	15. Test
	7. Quiz 1: Intellectual Property and E-Commerce	16. Course Project – Part 4: Global Commerce*
	8. Sources of International Law	17. Glossary and Credits
	9. Project: Look Up a Treaty	

Unit 5: Protections and Resolutions		
Business Law	Assignments	
	1. Consumer Law	11. Project: Constructing a Dispute, Arbitration, and Resolution
	2. Project: Consumer Protection in Action	12. Career Opportunities in Business Law
	3. Environmental Law	13. Project: Career Assessment
	4. Project: Global Issues: The Future We Want?	14. Quiz 2: Dispute Resolution and Alternative Dispute Resolution
	5. Business Protection – Bankruptcy	15. Special Project*
	6. Project: Bankrupt Your Business	16. Test
	7. Quiz 1: Consumer Law, Environmental Law, and Bankruptcy Law	17. Course Project – Part 5: Protections and Resolutions*
	8. Dispute Resolution	18. Glossary and Credits
	9. Project: Create a Business Dispute, and Resolve It	
	10. Alternative Dispute Resolution	

Unit 6: Course Review and Exam		
Business Law	Assignments	
	1. Course Project – Part 6: Pitching Your Product*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Career Management

Career Management assists students in their preparation for career selection. The course is designed to improve workforce skills needed in all careers including:

- communication
- leadership
- teamwork
- decision making
- problem solving
- goal setting
- time management

Students will complete activities that help identify personal interests, aptitudes, and learning styles. Students will use results of self-assessments to determining careers that may prove personally satisfying. Students will complete an in-depth career research activity that can be repeated for each future career decision. Students will also create a career portfolio as they work through the curriculum.

Objectives

- Examine the idea of work and what work entails.
- Analyze personal skills, aptitudes, and interests in order to choose a compatible career.
- Conduct career research while utilizing a variety of resources, both print and online.
- Create a lifestyle budget and career plan.
- Identify the steps necessary to prepare for chosen careers.
- Identify important elements of a resume and cover letter.
- Analyze and implement steps for problem solving and decision making.

Students will have to research different aspects of careers and will rely heavily on the Career Clusters developed by the U.S. Department of Education. They also will be asked to find and summarize job related information such as potential income, job requirements, and basic employability skills.

Some of the tasks in the chapter projects ask for answers that can be found in the lessons themselves, while others require research using the Internet. Students should have access to a computer with Internet and a good working knowledge of how to find information on the Web. While sample URLs are usually presented as a starting point, the student should have a basic knowledge of using search engines to find specific information.

Unit 1: What Is Work?		
Career Management	Assignments	
	1. Course Overview	16. Project: Basic Employability Skills*
	2. The Purpose of Work	17. Problem Solving
	3. Personal Benefits Of Work	18. Project: Problem Solving*
	4. Wages and Employment Benefits	19. Lifelong Learning and Technology
	5. Project: Time Sheet	20. Career Clusters: Part 1
	6. Project: Earnings Statement	21. Project: Hospitality and Tourism Brochure*
	7. Lifestyle Goals	22. Quiz 2: Elements of Work
	8. Project: Lifestyle Budget	23. Alternate Quiz 2: Form A: Elements of Work*
	9. Societal Benefits of Work	24. Alternate Quiz 2: Form B: Elements of Work*
	10. Quiz 1: What is Work?	25. Special Project*
	11. Alternate Quiz 1: Form A: What is Work?*	26. Review
	12. Alternate Quiz 1: Form B: What is Work?*	27. Test
	13. Basic Work Qualifications	28. Alternate Test: Form A*
	14. Work Environment	29. Alternate Test: Form B*
	15. Basic Employability Skills	30. Glossary and Credits

Unit 2: Self-Assessment		
Career Management	Assignments	
	1. Your Interests	16. Teamwork and Collaboration
	2. Skills and Aptitudes	17. Project: Teamwork*
	3. Project: Extended Activity - Play Web-based Aptitude, Skill, and Value Game*	18. Career Clusters: Part 2
	4. Project: Interests, Skills, and Aptitudes	19. Project: Arts, AV Technology and Communications Brochure*
	5. Personality Traits and Values	20. Quiz 2: Developing Interpersonal Skills
	6. Project: Extended Activity - Inherited Values*	21. Alternate Quiz 2: Form A: Developing Interpersonal Skills*
	7. Learning Styles	22. Alternate Quiz 2: Form B: Developing Interpersonal Skills*
	8. Project: Complete a Transferable and Self-Management Skills Inventory	23. Special Project*
	9. Quiz 1: Assessing Yourself	24. Review
	10. Alternate Quiz 1: Form A: Assessing Yourself*	25. Test
	11. Alternate Quiz 1: Form B: Assessing Yourself*	26. Alternate Test: Form A*
	12. Listening	27. Alternate Test: Form B*
	13. Speaking	28. Glossary and Credits
	14. Writing	
	15. Project: Giving and Receiving Directions	

Unit 3: Career Research		
Career Management	Assignments	
	1. Project: Predict Career Information	16. Alternate Quiz 2: Form A: Research Sources and Skills*
	2. Career Skills, Tasks, and Tools	17. Alternate Quiz 2: Form B: Research Sources and Skills*
	3. Project: Career Skills, Tasks, and Tools*	18. Project: Career Research
	4. Career Education, Training, and Qualifications	19. Project: Career Portfolio
	5. Career Wages and Benefits	20. Project: Post-Secondary Education Portfolio
	6. Career Outlook	21. Career Clusters: Part 3
	7. Project: Extended Activity: Career Outlook*	22. Project: Transportation, Distribution and Logistics Brochure*
	8. Quiz 1: Research Criteria	23. Special Project*
	9. Alternate Quiz 1: Form A: Research Criteria*	24. Review
	10. Alternate Quiz 1: Form B: Research Criteria*	25. Test
	11. Internet Research	26. Alternate Test: Form A*
	12. Library and Print Resources	27. Alternate Test: Form B*
	13. Additional Research Resources	28. Glossary and Credits
	14. Evaluate and Use Multiple Resources	
	15. Quiz 2: Research Sources and Skills	

Unit 4: Planning for Your Career		
Career Management	Assignments	
	1. Workplace Etiquette	15. Project: Thinking Skills
	2. Project: Work Poem*	16. Extracurricular Activities
	3. Workplace Trends	17. Quiz 2: Decision Making
	4. Emerging Careers	18. Alternate Quiz 2: Form A: Decision Making*
	5. Adjusting to Workplace Trends	19. Alternate Quiz 2: Form B: Decision Making*
	6. Self-improvement	20. Project: Academics Portfolio
	7. Quiz 1: Workplace Considerations	21. Project: Activities Portfolio
	8. Alternate Quiz 1: Form A: Workplace Considerations*	22. Career Clusters: Part 4
	9. Alternate Quiz 1: Form B: Workplace Considerations*	23. Project: Marketing Brochure*
	10. Decision-making Steps	24. Special Project*
	11. Goal Setting	25. Review
	12. Project: Setting Goals	26. Test
	13. Conflict Management	27. Alternate Test: Form A*
	14. Thinking Skills	28. Alternate Test: Form B*
		29. Glossary and Credits

Unit 5: Preparing for Your Career		
Career Management	Assignments	
	1. Resumes	13. What to Expect During an Interview
	2. Project: Resume*	14. Researching Potential Employers
	3. Cover Letters	15. Interview Behavior/Skills
	4. Project: Cover Letters*	16. Interview Follow-up
	5. Job Applications	17. Quiz 2: Contact with Employers
	6. Project: Job Application*	18. Alternate Quiz 2: Form A: Contact with Employers*
	7. Your Professional Online Presence	19. Alternate Quiz 2: Form B: Contact with Employers*
	8. Project: Professional Presence*	20. Special Project*
	9. Quiz 1: Creating Employment Documents	21. Review
	10. Alternate Quiz 1: Form A: Creating Employment Documents*	22. Test
	11. Alternate Quiz 1: Form B: Creating Employment Documents*	23. Alternate Test: Form A*
	12. Finding Job Leads	24. Alternate Test: Form B*
		25. Glossary and Credits
Unit 6: Course Review and Exam		
CM	Assignments	
	1. Course Review	3. Alternate Exam: Form A*
	2. Exam	4. Alternate Exam: Form B*

(*) Indicates alternative assignment

Office 2013 Applications I

Office 2013 Applications I is a semester-length, high school elective that explores the use of application skills in Microsoft® Word®, Publisher®, and PowerPoint® 2013. Students will use these applications to design, develop, create, edit, and share business documents, publications, and presentations. This course provides key knowledge and skills in the following Microsoft Office® applications:

1. Microsoft Word: Students are provided with an introduction to advanced skills in Microsoft Word that range from simply developing an understanding of the various uses of Word to more complex explorations of mail merge, tab stops, reference resources, and additional features available in backstage view.
2. Microsoft Publisher: Students learn to create publications, insert and edit publication items, and view, review, and share those publications.
3. Microsoft PowerPoint: Students will learn how to create presentations, enter and modify content, modify and deliver presentations, and collaborate and share PowerPoint presentations.

Objectives

- Create, modify, save, and format styles, text, font, pages, and folders in Microsoft Word.
- Demonstrate use of the Cut, Copy, and Paste commands and the Show/Hide button while editing documents.
- Show how to use Spell Check, Find and Replace, and AutoCorrect in the Word application.
- Know how to track changes and add comments in a document.
- Demonstrate how to insert, format, modify, and edit elements of a Word document.
- Demonstrate knowledge of Microsoft Word advanced skills.
- Understand the basics of references in Word.
- Modify document properties including templates.
- Recognize how to navigate, modify, edit, and review elements of the Microsoft Publisher application.
- Recall how to print and share a publication electronically.
- Demonstrate knowledge of how to open, modify, insert, create, present, and save elements of a PowerPoint presentation.

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Unit 1: Microsoft Word Beginning Skills

Assignments

- | | | | | |
|----------------------------|-----|--|-----|---|
| Office 2013 Applications I | 1. | Course Overview | 16. | Backgrounds and Themes |
| | 2. | Microsoft Word and the Documents it can Create | 17. | Project: Microsoft Word Page and Paragraph Formatting |
| | 3. | Navigating the Word Screen | 18. | Quiz 3: Formatting Paragraphs and Pages |
| | 4. | Open, Enter Text, Save and Print | 19. | Alternate Quiz 3—Form A: Formatting Paragraphs and Pages* |
| | 5. | Quiz 1: Word Introduction | 20. | Alternate Quiz 3—Form B: Formatting Paragraphs and Pages* |
| | 6. | Alternate Quiz 1—Form A: Word Introduction* | 21. | Project: Unit 1 - Capstone |
| | 7. | Alternate Quiz 1—Form B: Word Introduction* | 22. | Special Project* |
| | 8. | Font: Basic Editing Features | 23. | Review |
| | 9. | Font Styles and the Clipboard | 24. | Test |
| | 10. | Project: Microsoft Word Document Formatting | 25. | Alternate Test—Form A* |
| | 11. | Quiz 2: Formatting Font | 26. | Alternate Test—Form B* |
| | 12. | Alternate Quiz 2—Form A: Formatting Font* | 27. | Glossary and Credits |
| | 13. | Alternate Quiz 2—Form B: Formatting Font* | | |
| | 14. | Paragraph Formatting Features | | |
| | 15. | Page Setup Features | | |

Unit 2: Microsoft Word Intermediate Skills

Assignments

- | | | | | |
|----------------------------|-----|--|----------------------|---|
| Office 2013 Applications I | 1. | Inserting Images into Documents | 14. | Spell Check and Find and Replace |
| | 2. | Inserting Shapes, SmartArt and Text Boxes | 15. | Insert Comments and Track Changes |
| | 3. | Special Parts in the Word Application | 16. | Autocorrect Options |
| | 4. | Project: Inserting and Modifying Content | 17. | Project: Review Tab Skills |
| | 5. | Quiz 1: Word Intermediate Skills | 18. | Quiz 3: Autocorrect Options |
| | 6. | Alternate Quiz 1—Form A: Word Intermediate Skills* | 19. | Alternate Quiz 3—Form A: Autocorrect Options* |
| | 7. | Alternate Quiz 1—Form B: Word Intermediate Skills* | 20. | Alternate Quiz 3—Form B: Autocorrect Options* |
| | 8. | Inserting Tables | 21. | Project: Collaborating on a Word Document* |
| | 9. | Organizing Content in Tables | 22. | Project: Unit 2 - Capstone |
| | 10. | Project: Tables | 23. | Special Project* |
| | 11. | Quiz 2: Working with Tables | 24. | Review |
| | 12. | Alternate Quiz 2—Form A: Working with Tables* | 25. | Test |
| | 13. | Alternate Quiz 2—Form B: Working with Tables* | 26. | Alternate Test—Form A* |
| | | | 27. | Alternate Test—Form B* |
| | | 28. | Glossary and Credits | |

Unit 3: Microsoft Word Advanced Skills		
Office 2013 Applications I	Assignments	
	1. Recording a Macro	16. Share, Protect, and Modify Document Properties
	2. Project: Record a Macro	17. Using and Creating a Template
	3. Merging to Create Letters	18. Project: Creating a document template
	4. Project: Creating a Merge	19. Quiz 3: Backstage View
	5. Quiz 1: Word Advanced Skills	20. Alternate Quiz 3—Form A: Backstage View*
	6. Alternate Quiz 1—Form A: Word Advanced Skills*	21. Alternate Quiz 3—Form B: Backstage View*
	7. Alternate Quiz 1—Form B: Word Advanced Skills*	22. Project: Unit Simulation*
	8. Endnotes and Footnotes	23. Project: Unit 3 – Capstone
	9. Citations and Captions	24. Special Project*
	10. Hyperlinks	25. Review
	11. Table of Contents	26. Test
	12. Project: Inserting Special Report Features	27. Alternate Test—Form A*
	13. Quiz 2: References	28. Alternate Test—Form B*
	14. Alternate Quiz 2—Form A: References*	29. Glossary and Credits
	15. Alternate Quiz 2—Form B: References*	
Unit 4: Microsoft Publisher Application		
Office 2013 Applications I	Assignments	
	1. Opening and Navigating Publisher	14. Project: Modify and Share a Publication
	2. Designing Pages	15. Quiz 2: Publications
	3. Inserting Text	16. Alternate Quiz 2—Form A: Publications*
	4. Project: Open Publisher, Browse, and Select a Template	17. Alternate Quiz 2—Form B: Publications*
	5. Quiz 1: Publisher	18. Project: Design, Edit and Share a Publication
	6. Alternate Quiz 1—Form A: Publisher*	19. Project: Unit 4 - Capstone
	7. Alternate Quiz 1—Form B: Publisher*	20. Special Project*
	8. Graphics	21. Review
	9. Tables and Building Blocks	22. Test
	10. Project: Inserting Enhancements	23. Alternate Test—Form A*
	11. Viewing a Publication	24. Alternate Test—Form B*
	12. Reviewing a Publication	25. Glossary and Credits
	13. Sharing and Printing Publications	

Unit 5: Microsoft PowerPoint Application		
Office 2013 Applications I	Assignments	
	1. PowerPoint Layout and Modifying Views	15. Saving, Printing, Sharing, and Protecting a Presentation
	2. Entering Text and Formatting Slides	16. Project: Simulation: Modify, Share, and Deliver a Show
	3. Quiz 1: PowerPoint Layout and Views	17. Quiz 3: Modify, Share, Deliver a Show
	4. Alternate Quiz 1—Form A: PowerPoint Layout and Views*	18. Alternate Quiz 3—Form A: Modify, Share, Deliver a Show*
	5. Alternate Quiz 1—Form B: PowerPoint Layout and Views*	19. Alternate Quiz 3—Form B: Modify, Share, Deliver a Show*
	6. Images, WordArt, and SmartArt	20. Project: Simulation: Design and Create a Presentation
	7. Charts and Tables	21. Project: Unit 5 - Capstone
	8. Project: Simulation: Creating a Presentation	22. Special Project*
	9. Quiz 2: Charts and Tables	23. Review
	10. Alternate Quiz 2—Form A: Charts and Tables*	24. Test
	11. Alternate Quiz 2—Form B: Charts and Tables*	25. Alternate Test—Form A*
	12. Transitions and Animations	26. Alternate Test—Form B*
	13. Set up Show and Timings	27. Glossary and Credits
	14. Presentation Tools	
OA-2013I	Unit 6: Course Review, and Final Exam	
	Assignments	
	1. Course Review	3. Alternate Final Exam: Form A*
	2. Final Exam	4. Alternate Final Exam: Form B*

(*) Indicates alternative assignment

Office 2013 Applications II

Office 2013 Applications II is a semester-length, high school elective course that explores the use of application skills in the 2013 versions of Microsoft® Excel® and Microsoft® Access®. Students will use these applications to design, develop, create, edit, and share business spreadsheet and database documents. This course provides key knowledge and skills in the following areas:

1. Introduction to advanced skills in Microsoft® Excel® ranging from basic spreadsheet terminology to exploring data entry, formatting, formulas, functions, charts, graphics, and additional features available in backstage view.
2. Skills in Microsoft® Access®, ranging from basic relational database terminology to creating and modifying tables, forms, queries, and reports.

Objectives

- Recognize the elements of an Excel spreadsheet.
- Demonstrate use of Excel navigation and protection tools.
- Know how to modify, edit, save, create, and format Excel spreadsheets.
- Use tools to manage Excel worksheets.
- Define the rules for creating formulas and functions in Excel worksheets.
- Demonstrate how to create, modify, and edit charts and shapes in Microsoft Excel.
- Demonstrate knowledge of database design.
- Manage the Access Environment.
- Create an Access database.
- Create, modify, and edit Access forms, queries, and reports.

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Unit 1: Microsoft Excel Spreadsheets Basics	
Assignments	
1. Course Overview	16. Sharing Worksheet Data with Other Users
2. What is a Spreadsheet and What Are Its Uses?	17. Managing Comments
3. Spreadsheet Design and the Microsoft Excel Screen	18. Printing Worksheets and Workbooks
4. Quiz 1: Overview of Spreadsheet Basics	19. Project: Saving and Printing Microsoft Excel Files
5. Alternate Quiz 1—Form A: Overview of Spreadsheet Basics*	20. Quiz 3: Managing File Settings
6. Alternate Quiz 1—Form B: Overview of Spreadsheet Basics*	21. Alternate Quiz 3—Form A: Managing File Settings*
7. Navigating in a Worksheet	22. Alternate Quiz 3—Form B: Managing File Settings*
8. Microsoft Excel Workbook Views	23. Supplemental Lesson 1: Financial Terms*
9. Microsoft Excel Window Views	24. Supplemental Lesson 2: Financial Statements*
10. Project: Managing the Worksheet Environment	25. Special Project*
11. Quiz 2: Spreadsheet Basics	26. Review
12. Alternate Quiz 2—Form A: Spreadsheet Basics*	27. Test
13. Alternate Quiz 2—Form B: Spreadsheet Basics*	28. Alternate Test—Form A*
14. Workbook Properties	29. Alternate Test—Form B*
15. Saving and File Formats	30. Glossary and Credits

Office 2013 Applications II

Unit 2: Creating Microsoft Excel Spreadsheets		
Office 2013 Applications II	Assignments	
	1. Microsoft Excel Data Types	21. Alternate Quiz 3—Form A: Creating Formulas*
	2. Entering and Editing Cell Data	22. Alternate Quiz 3—Form B: Creating Formulas*
	3. Selecting, Filling, Moving, and Copying Cell Data	23. Functions in Microsoft Excel
	4. AutoFill	24. Function Wizard and Linking Formulas
	5. Project: Stock Market Project Part 1 – Researching and Recording Stock Prices	25. Analyzing Data by Sorting and Filtering
	6. Quiz 1: Data Entry	26. Project: Stock Market Project 4 – Entering Functions
	7. Alternate Quiz 1—Form A: Data Entry*	27. Quiz 4: Utilizing Functions and Data Commands
	8. Alternate Quiz 1—Form B: Data Entry*	28. Alternate Quiz 4—Form A: Utilizing Functions and Data Commands*
	9. Cell Formats	29. Alternate Quiz 4—Form B: Utilizing Functions and Data Commands*
	10. Editing Cells, Rows, and Columns	30. Project: Budget Project – Career Search
	11. Managing Worksheets	31. Project: Budget Project – Housing Research
	12. Project: Stock Market Project 2 – Formatting a Spreadsheet	32. Project: Budget Project – Vehicle Research
	13. Quiz 2: Formatting Cells and Worksheets	33. Project: Budget Project – Utilities, Vacation, and Miscellaneous Expense Research*
	14. Alternate Quiz 2—Form A: Formatting Cells and Worksheets*	34. Project: Budget Project – Final
	15. Alternate Quiz 2—Form B: Formatting Cells and Worksheets*	35. Special Project*
	16. Order of Operations	36. Review
	17. Microsoft Excel Formulas	37. Test
	18. Types of Cell References in Formulas	38. Alternate Test—Form A*
	19. Project: Stock Market Project 3 – Entering Formulas	39. Alternate Test—Form B*
	20. Quiz 3: Creating Formulas	40. Glossary and Credits

Unit 3: Microsoft Excel Graphical Representations		
Office 2013 Applications II	Assignments	
	1. Why Use Graphical Representations of Data?	15. Project: Stock Market Project Part 6 – Creating Advanced Charts
	2. Creating Charts	16. Quiz 3: Advanced Charting Options
	3. Quiz 1: Creating Charts in Microsoft Excel	17. Alternate Quiz 3—Form A: Advanced Charting Options*
	4. Alternate Quiz 1—Form A: Data Entry*	18. Alternate Quiz 3—Form B: Advanced Charting Options*
	5. Alternate Quiz 1—Form B: Data Entry*	19. Project: Research and Chart Product Price Comparisons*
	6. Formatting Charts	20. Project: Chart Budget Expenses*
	7. Enhancing Charts with Illustrations	21. Special Project*
	8. Formatting Illustrations	22. Review
	9. Project: Stock Market Project Part 5 – Creating and Enhancing Charts	23. Test
	10. Quiz 2: Enhancing Microsoft Excel Charts	24. Alternate Test—Form A*
	11. Alternate Quiz 2—Form A: Enhancing Microsoft Excel Charts*	25. Alternate Test—Form B*
	12. Alternate Quiz 2—Form B: Enhancing Microsoft Excel Charts*	26. Glossary and Credits
	13. Creating Picture Charts	
	14. Sparklines	

Unit 4: Microsoft Access Database Basics		
Office 2013 Applications II	Assignments	
	1. What is a Database and Its Uses?	18. Modifying a Table
	2. Database Design	19. Importing Data from an Excel File
	3. Field Names, Data Types, and Properties	20. Sorting and Filtering
	4. Project: Designing a Customer Information Database	21. Creating Relationships
	5. Quiz 1: Database Design	22. Project: Creating a Customer Information Database
	6. Alternate Quiz 1—Form A: Database Design*	23. Quiz 3: Creating an Access Database
	7. Alternate Quiz 1—Form B: Database Design*	24. Alternate Quiz 3—Form A: Creating an Access Database*
	8. The Access Screen	25. Alternate Quiz 3—Form B: Creating an Access Database*
	9. Navigating in Table Datasheets, Forms, and Reports	26. Project: Designing an Address List Database*
	10. Working in the Navigation Pane	27. Project: Creating an Address List Database*
	11. Save Options and Compact and Repair	28. Project: Designing and Creating an Inventory Database*
	12. Project: Managing the Access Environment	29. Special Project*
	13. Quiz 2: Managing the Access Environment	30. Review
	14. Alternate Quiz 2—Form A: Managing the Access Environment*	31. Test
	15. Alternate Quiz 2—Form B: Managing the Access Environment*	32. Alternate Test—Form A*
	16. Creating an Access Database and Table	33. Alternate Test—Form B*
	17. Entering Data	34. Glossary and Credits

Unit 5: Microsoft Access Forms, Queries, and Reports		
Office 2013 Applications II	Assignments	
	1. Creating Forms	19. Editing the Design of a Report
	2. Editing the Design of a Form	20. Sorting and Filtering Records in a Report
	3. Creating Multi-table Forms	21. Creating Multi-table Reports
	4. Editing Multi-table Forms	22. Editing the Design of a Multi-Table Report
	5. Project: Address List Forms	23. Project: Address List Reports
	6. Quiz 1: Microsoft Access Forms	24. Quiz 3: Microsoft Access Reports
	7. Alternate Quiz 1—Form A: Microsoft Access Forms*	25. Alternate Quiz 3—Form A: Microsoft Access Reports*
	8. Alternate Quiz 1—Form B: Microsoft Access Forms*	26. Alternate Quiz 3—Form B: Microsoft Access Reports*
	9. Creating Simple Queries	27. Project: Creating Forms for the Address List Database*
	10. Creating Advanced Queries	28. Project: Creating Queries for the Address List Database*
	11. Creating Multi-table Queries	29. Project: Creating Reports for the Address List Database*
	12. Calculating Totals in a Query	30. Special Project*
	13. Creating Calculated Fields in a Query	31. Review
	14. Project: Address List Queries	32. Test
	15. Quiz 2: Microsoft Access Queries	33. Alternate Test—Form A*
	16. Alternate Quiz 2—Form A: Microsoft Access Queries*	34. Alternate Test—Form B*
	17. Alternate Quiz 2—Form B: Microsoft Access Queries*	35. Glossary and Credits
	18. Creating Reports	

OA 2013II	Unit 6: Course Review, and Final Exam	
	Assignments	
	1. Course Review	3. Alternate Final Exam: Form A*
	2. Final Exam	4. Alternate Final Exam: Form B*

(*) Indicates alternative assignment

Office 2010 Applications I

Office 2010 Applications I is a semester-length, high school elective that explores the use of application skills in Microsoft® Word®, Publisher®, and PowerPoint® 2010. Students will use these applications to design, develop, create, edit, and share business documents, publications, and presentations. This course provides key knowledge and skills in the following Microsoft Office® applications:

1. Microsoft Word: Students are provided with an introduction to advanced skills in Microsoft Word that range from simply developing an understanding of the various uses of Word to more complex explorations of mail merge, tab stops, reference resources, and additional features available in backstage view.
2. Microsoft Publisher: Students learn to create publications, insert and edit publication items, and view, review, and share those publications.
3. Microsoft PowerPoint: Students will learn how to create presentations, enter and modify content, modify and deliver presentations, and collaborate and share PowerPoint presentations.

Objectives

- Create, modify, save, and format styles, text, font, pages, and folders in Microsoft Word.
- Demonstrate use of the Cut, Copy, and Paste commands and the Show/Hide button while editing documents.
- Show how to use Spell Check, Find and Replace, and AutoCorrect in the Word application.
- Know how to track changes and add comments in a document.
- Demonstrate how to insert, format, modify, and edit elements of a Word document.
- Demonstrate knowledge of Microsoft Word advanced skills.
- Understand the basics of references in Word.
- Modify document properties including templates.
- Recognize how to navigate, modify, edit, and review elements of the Microsoft Publisher application.
- Recall how to print and share a publication electronically.
- Demonstrate knowledge of how to open, modify, insert, create, present, and save elements of a PowerPoint presentation.

Students must be computer literate and have Internet access. Students should have basic research skills, as well as the ability to conduct online searches and access recommended websites. Word processing and presentation software is required to produce projects.

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Unit 1: Microsoft® Word® Beginning Skills		
Office 2010 Applications I	Assignments	
	1. Course Overview	16. Backgrounds and Themes
	2. Microsoft Word and the Documents it can Create	17. Project: Microsoft Word Page and Paragraph Formatting
	3. Navigating the Word Screen	18. Quiz 3: Formatting Paragraphs and Pages
	4. Open, Enter Text, Save and Print	19. Alternate Quiz 3: Form A: Formatting Paragraphs and Pages*
	5. Quiz 1: Word Introduction	20. Alternate Quiz 3: Form B: Formatting Paragraphs and Pages*
	6. Alternate Quiz 1: Form A: Word Introduction*	21. Supplemental Lesson*
	7. Alternate Quiz 1: Form B: Word Introduction*	22. Special Project*
	8. Font: Basic Editing Features	23. Review
	9. Font Styles and the Clipboard	24. Test
	10. Project: Microsoft Word Document Formatting	25. Alternate Test: Form A*
	11. Quiz 2: Formatting Font	26. Alternate Test: Form B*
	12. Alternate Quiz 2: Form A: Formatting Font*	27. Glossary and Credits
	13. Alternate Quiz 2: Form B: Formatting Font*	
	14. Paragraph Formatting Features	
	15. Page Setup Features	

Unit 2: Microsoft® Word® Intermediate Skills		
Office 2010 Applications I	Assignments	
	1. Inserting Images into Documents	15. Insert Comments and Track Changes
	2. Inserting Shapes, SmartArt and Text Boxes	16. Autocorrect Options
	3. Special Parts in the Word Application	17. Project: Review Tab Skills
	4. Project: Inserting and Modifying Content	18. Quiz 3: Autocorrect Options
	5. Quiz 1: Word Intermediate Skills	19. Alternate Quiz 3: Form A: Autocorrect Options*
	6. Alternate Quiz 1: Form A: Word Intermediate Skills*	20. Alternate Quiz 3: Form B: Autocorrect Options*
	7. Alternate Quiz 1: Form B: Word Intermediate Skills*	21. Project: Collaborating on a Word Document*
	8. Inserting Tables	22. Project: Supplemental Projects*
	9. Organizing Content in Tables	23. Special Project*
	10. Project: Tables	24. Review
	11. Quiz 2: Working with Tables	25. Test
	12. Alternate Quiz 2: Form A: Working with Tables*	26. Alternate Test: Form A*
	13. Alternate Quiz 2: Form B: Working with Tables*	27. Alternate Test: Form B*
	14. Spell Check and Find and Replace	28. Glossary and Credits

Unit 3: Microsoft® Word® Advanced Skills		
Office 2010 Applications I	Assignments	
	1. Merging to Create Labels	15. Using and Creating a Template
	2. Merging to Create Letters	16. Project: Creating a document template
	3. Project: Creating a Merge	17. Quiz 3: Backstage View
	4. Quiz 1: Word Advanced Skills	18. Alternate Quiz 3: Form A: Backstage View*
	5. Alternate Quiz 1: Form A: Word Advanced Skills*	19. Alternate Quiz 3: Form B: Backstage View*
	6. Alternate Quiz 1: Form B: Word Advanced Skills*	20. Project: Unit Simulation*
	7. Endnotes and Footnotes	21. Project: Supplemental Materials*
	8. Hyperlinks	22. Special Project*
	9. Table of Contents	23. Review
	10. Project: Inserting Special Report Features	24. Test
	11. Quiz 2: References	25. Alternate Test: Form A*
	12. Alternate Quiz 2: Form A: References*	26. Alternate Test: Form B*
	13. Alternate Quiz 2: Form B: References*	27. Glossary and Credits
	14. Share, Protect, and Modify Document Properties	

Unit 4: Microsoft® Publisher® Application		
Office 2010 Applications I	Assignments	
	1. Opening and Navigating Publisher	13. Sharing and Printing Publications
	2. Designing Pages	14. Project: Modify and Share a Publication
	3. Inserting Text	15. Quiz 2: Publications
	4. Project: Open Publisher, Browse, and Select a Template	16. Alternate Quiz 2: Form A: Publications*
	5. Quiz 1: Publisher	17. Alternate Quiz 2: Form B: Publications*
	6. Alternate Quiz 1: Form A: Publisher*	18. Project: Design, Edit and Share a Publication
	7. Alternate Quiz 1: Form B: Publisher*	19. Project: Supplemental Activities
	8. Graphics	20. Special Project*
	9. Tables and Building Blocks	21. Review
	10. Project: Inserting Enhancements	22. Test
	11. Viewing a Publication	23. Alternate Test: Form A*
	12. Reviewing a Publication	24. Alternate Test: Form B*
		25. Glossary and Credits

Unit 5: Microsoft® PowerPoint® Application	
Assignments	
Office 2010 Applications I	1. PowerPoint Layout and Modifying Views
	2. Entering Text and Formatting Slides
	3. Quiz 1: PowerPoint Layout and Views
	4. Alternate Quiz 1: Form A: PowerPoint Layout and Views*
	5. Alternate Quiz 1: Form B: PowerPoint Layout and Views*
	6. Images, WordArt, and SmartArt
	7. Charts and Tables
	8. Project: Simulation: Creating a Presentation
	9. Quiz 2: Charts and Tables
	10. Alternate Quiz 2: Form A: Charts and Tables*
	11. Alternate Quiz 2: Form B: Charts and Tables*
	12. Transitions and Animations
	13. Set up Show and Timings
	14. Presentation Tools
	15. Saving, Printing, Sharing, and Protecting a Presentation
	16. Project: Simulation: Modify, Share, and Deliver a Show
	17. Quiz 3: Modify, Share, Deliver a Show
	18. Alternate Quiz 3: Form A: Modify, Share, Deliver a Show*
	19. Alternate Quiz 3: Form B: Modify, Share, Deliver a Show*
	20. Project: Simulation: Design and Create a Presentation
	21. Project: Supplemental Activities
	22. Special Project*
	23. Review
	24. Test
	25. Alternate Test: Form A*
	26. Alternate Test: Form B*
	27. Glossary and Credits

Unit 6: Course Review, and Exam	
Assignments	
O2010A I	1. Course Review
	2. Final Exam
	3. Alternate Final Exam: Form A*
	4. Alternate Final Exam: Form B*

(*) Indicates alternative assignment

Office 2010 Applications II

Office 2010 Applications II is a semester-length, high school elective course that explores the use of application skills in Microsoft® Excel® and Microsoft® Access®. Students will use these applications to design, develop, create, edit, and share business spreadsheet and database documents. This course provides key knowledge and skills in the following areas:

1. Introduction to advanced skills in Microsoft® Excel® ranging from basic spreadsheet terminology to exploring data entry, formatting, formulas, functions, charts, graphics, and additional features available in backstage view.
2. Skills in Microsoft® Access®, ranging from basic relational database terminology to creating and modifying tables, forms, queries, and reports.

Objectives

- Recognize the elements of an Excel spreadsheet.
- Demonstrate use of Excel navigation and protection tools.
- Know how to modify, edit, save, create, and format Excel spreadsheets.
- Use tools to manage Excel worksheets.
- Define the rules for creating formulas and functions in Excel worksheets.
- Demonstrate how to create, modify, and edit charts and shapes in Microsoft Excel.
- Demonstrate knowledge of database design.
- Manage the Access Environment.
- Create an Access database.
- Create, modify, and edit Access forms, queries, and reports.

Students must be computer literate and have Internet access. Students should have basic research skills, as well as the ability to conduct online searches and access recommended websites. Word processing and presentation software might be required to produce projects.

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Unit 1: Microsoft Excel Spreadsheets Basics		
Office 2010 Applications II	Assignments	
	1. Course Overview	15. Saving and File Formats
	2. What is a Spreadsheet and What Are Its Uses?	16. Sharing Worksheet Data with Other Users
	3. Spreadsheet Design and the Microsoft Excel Screen	17. Managing Comments
	4. Quiz 1: Overview of Spreadsheet Basics	18. Printing Worksheets and Workbooks
	5. Alternate Quiz 1: Form A: Overview of Spreadsheet Basics*	19. Project: Saving and Printing Microsoft Excel Files
	6. Alternate Quiz 1: Form B: Overview of Spreadsheet Basics*	20. Quiz 3: Managing File Settings
	7. Navigating in a Worksheet	21. Alternate Quiz 3: Form A: Managing File Settings*
	8. Microsoft Excel Workbook Views	22. Alternate Quiz 3: Form B: Managing File Settings*
	9. Microsoft Excel Window Views	23. Supplemental Lesson 1: Financial Terms*
	10. Project: Managing the Worksheet Environment	24. Supplemental Lesson 2: Financial Statements*
	11. Quiz 2: Spreadsheet Basics	25. Special Project*
	12. Alternate Quiz 2: Form A: Spreadsheet Basics*	26. Review
	13. Alternate Quiz 2: Form B: Spreadsheet Basics*	27. Test
	14. Workbook Properties	28. Alternate Test: Form A*
		29. Alternate Test: Form B*
		30. Glossary and Credits
Unit 2: Creating Microsoft Excel Spreadsheets		
Office 2010 Applications II	Assignments	
	1. Microsoft Excel Data Types	21. Alternate Quiz 3: Form A: Creating Formulas*
	2. Entering and Editing Cell Data	22. Alternate Quiz 3: Form B: Creating Formulas*
	3. Selecting, Filling, Moving, and Copying Cell Data	23. Functions in Microsoft Excel
	4. AutoFill	24. Function Wizard and Linking Formulas
	5. Project: Stock Market Project Part 1 - Researching and Recording Stock Prices	25. Analyzing Data by Sorting and Filtering
	6. Quiz 1: Data Entry	26. Project: Stock Market Project 4 - Entering Functions
	7. Alternate Quiz 1: Form A: Data Entry*	27. Quiz 4: Utilizing Functions and Data Commands
	8. Alternate Quiz 1: Form B: Data Entry*	28. Alternate Quiz 4: Form A: Utilizing Functions and Data Commands*
	9. Cell Formats	29. Alternate Quiz 4: Form B: Utilizing Functions and Data Commands*
	10. Editing Cells, Rows, and Columns	30. Project: Budget Project - Career Search
	11. Managing Worksheets	31. Project: Budget Project - Housing Research
	12. Project: Stock Market Project 2 - Formatting a Spreadsheet	32. Project: Budget Project - Vehicle Research
	13. Quiz 2: Formatting Cells and Worksheets	33. Project: Budget Project - Utilities, Vacation, and Miscellaneous Expense Research*
	14. Alternate Quiz 2: Form A: Formatting Cells and Worksheets*	34. Project: Budget Project - Final
	15. Alternate Quiz 2: Form B: Formatting Cells and Worksheets*	35. Special Project*
	16. Order of Operations	36. Review
	17. Microsoft Excel Formulas	37. Test
	18. Types of Cell References in Formulas	38. Alternate Test: Form A*
	19. Project: Stock Market Project 3 - Entering Formulas	39. Alternate Test: Form B*
	20. Quiz 3: Creating Formulas	40. Glossary and Credits

Unit 3: Microsoft Excel Graphical Representations		
Office 2010 Applications II	Assignments	
	1. Why Use Graphical Representations of Data?	15. Project: Stock Market Project Part 6 – Creating Advanced Charts
	2. Creating Charts	16. Quiz 3: Advanced Charting Options
	3. Quiz 1: Creating Charts in Microsoft Excel	17. Alternate Quiz 3: Form A: Advanced Charting Options*
	4. Alternate Quiz 1: Form A: Data Entry*	18. Alternate Quiz 3: Form B: Advanced Charting Options*
	5. Alternate Quiz 1: Form B: Data Entry*	19. Project: Research and Chart Product Price Comparisons*
	6. Formatting Charts	20. Project: Chart Budget Expenses*
	7. Enhancing Charts with Illustrations	21. Special Project*
	8. Formatting Illustrations	22. Review
	9. Project: Stock Market Project Part 5 - Creating and Enhancing Charts	23. Test
	10. Quiz 2: Enhancing Microsoft Excel Charts	24. Alternate Test: Form A*
	11. Alternate Quiz 2: Form A: Enhancing Microsoft Excel Charts*	25. Alternate Test: Form B*
	12. Alternate Quiz 2: Form B: Enhancing Microsoft Excel Charts*	26. Glossary and Credits
	13. Creating Picture Charts	
	14. Sparklines	

Unit 4: Microsoft Access Database Basics		
Office 2010 Applications II	Assignments	
	1. What is a Database and Its Uses?	18. Modifying a Table
	2. Database Design	19. Importing Data from an Excel File
	3. Field Names, Data Types, and Properties	20. Sorting and Filtering
	4. Project: Designing a Customer Information Database	21. Creating Relationships
	5. Quiz 1: Database Design	22. Project: Creating Customer Information Database
	6. Alternate Quiz 1: Form A: Database Design*	23. Quiz 3: Creating an Access Database
	7. Alternate Quiz 1: Form B: Database Design*	24. Alternate Quiz 3: Form A: Creating an Access Database*
	8. The Access Screen	25. Alternate Quiz 3: Form B: Creating an Access Database*
	9. Navigating in Table Datasheets, Forms, and Reports	26. Project: Designing an Address List Database*
	10. Working in the Navigation Pane	27. Project: Creating an Address List Database*
	11. Save Options and Compact and Repair	28. Project: Designing and Creating an Inventory Database*
	12. Project: Managing the Access Environment	29. Special Project*
	13. Quiz 2: Managing the Access Environment	30. Review
	14. Alternate Quiz 2: Form A: Managing the Access Environment*	31. Test
	15. Alternate Quiz 2: Form B: Managing the Access Environment*	32. Alternate Test: Form A*
	16. Creating an Access Database and Table	33. Alternate Test: Form B*
	17. Entering Data	34. Glossary and Credits

Unit 5: Microsoft Access Forms, Queries, and Reports		
Office 2010 Applications II	Assignments	
	1. Creating Forms	20. Sorting and Filtering Records in a Report
	2. Editing the Design of a Form	21. Creating Multi-table Reports
	3. Creating Multi-table Forms	22. Editing the Design of a Multi-Table Report
	4. Editing Multi-table Forms	23. Project: Address List Reports
	5. Project: Address List Forms	24. Quiz 3: Microsoft Access Reports
	6. Quiz 1: Microsoft Access Forms	25. Alternate Quiz 3: Form A: Microsoft Access Reports*
	7. Alternate Quiz 1: Form A: Microsoft Access Forms*	26. Alternate Quiz 3: Form B: Microsoft Access Reports*
	8. Alternate Quiz 1: Form B: Microsoft Access Forms*	27. Project: Creating Forms for the Address List Database*
	9. Creating Simple Queries	28. Project: Creating Queries for the Address List Database*
	10. Creating Advanced Queries	29. Project: Creating Reports for the Address List Database*
	11. Creating Multi-table Queries	30. Special Project*
	12. Calculating Totals in a Query	31. Review
	13. Creating Calculated Fields in a Query	32. Test
	14. Project: Address List Queries	33. Alternate Test: Form A*
	15. Quiz 2: Microsoft Access Queries	34. Alternate Test: Form B*
	16. Alternate Quiz 2: Form A: Microsoft Access Queries*	35. Glossary and Credits
	17. Alternate Quiz 2: Form B: Microsoft Access Queries*	
	18. Creating Reports	
	19. Editing the Design of a Report	
O2010A II	Unit 6: Course Review, and Exam	
	Assignments	
	1. Review	3. Alternate Final Exam: Form A*
	2. Test	4. Alternate Final Exam: Form B*

(*) Indicates alternative assignment

Small Business Entrepreneurship

This semester-long course is designed to provide the skills needed to effectively organize, develop, create, and manage your own business, while exposing you to the challenges, problems, and issues faced by entrepreneurs. Throughout this course, you will be given the chance to see what kinds of opportunities exist for small business entrepreneurs and become aware of the necessary skills for running a business. You will become familiar with the traits and characteristics that are found in successful entrepreneurs, and you will see how research, planning, operations, and regulations can affect small businesses. You will learn how to develop plans for having effective business management and marketing strategies.

Small Business Entrepreneurship will teach you basic principles of entrepreneurship and business ethics. You'll look at the major steps relevant to starting a new business. These steps include financing, marketing, and managing. Knowing how to analyze a business plan will help you develop one, while at the same time making it easier for you to understand the reasons businesses have to write one. Small Business Entrepreneurship is designed to give you an overview on running a business from start to finish.

Objectives

- Understand the basic aspects of entrepreneurship.
- Recognize the legal environment of a small business.
- Describe basic economic principles.
- Understand scarcity and forecasting.
- Identify different kinds of costs.
- Explain the principles of financing.
- Identify kinds of financial records.
- Know the sources of financing.
- Explain target markets.
- Analyze market research and competition.
- Describe marketing mix.
- Recognize the roles of management.
- Construct a business plan.

Students must be computer literate and have Internet access. Students should have basic research skills, as well as the ability to conduct online searches and access recommended websites. Word processing and presentation software may be required to produce projects.

Unit 3: Financing		
Small Business Entrepreneurship	Assignments	
	1. Start-Up Costs	16. Alternate Quiz 2 - Form B: Financial Records*
	2. Costs of Goods Sold	17. Sources of Financing
	3. Operating Expenses	18. Assess Collateral
	4. Gross Income, Net Income, and Break-Even Point	19. Project: Financing Sources
	5. Quiz 1: Principles of Financing	20. Interest Rate and Monthly Payments
	6. Alternate Quiz 1 - Form A: Principles of Financing*	21. Quiz 3: Sources of Financing
	7. Alternate Quiz 1 - Form B: Principles of Financing*	22. Alternate Quiz 3 - Form A: Sources of Financing*
	8. Income Statement	23. Alternate Quiz 3 - Form B: Sources of Financing*
	9. Project: Income Statement	24. Unit Project: Business Ventures - Part 3
	10. Balance Sheet	25. Special Project*
	11. Project: Balance Sheet	26. Review
	12. Profitability and Projecting Cash Flow	27. Test
	13. Project: Financial Records	28. Alternate Test - Form A*
	14. Quiz 2: Financial Records	29. Alternate Test - Form B*
	15. Alternate Quiz 2 - Form A: Financial Records*	30. Glossary and Credits

Unit 4: Marketing		
Small Business Entrepreneurship	Assignments	
	1. Analyze a Market's Customers	15. Marketing Terminology
	2. Target Market	16. Marketing Functions
	3. Project: Target Market	17. 4P's and 7P's
	4. Quiz 1: Target Markets	18. Project: Marketing Mix
	5. Alternate Quiz 1 - Form A: Target Markets*	19. Project: Promotion
	6. Alternate Quiz 1 - Form B: Target Markets*	20. Marketing Plan
	7. Steps of Market Research	21. Quiz 3: Marketing Mix
	8. Uses for Market Research	22. Alternate Quiz 3 - Form A: Marketing Mix*
	9. Project: Current Event - Market Research	23. Alternate Quiz 3 - Form B: Marketing Mix*
	10. Project: Assessing Competitors' Strengths and Weaknesses	24. Unit Project: Business Ventures - Part 4
	11. Industry Characteristics	25. Special Project*
	12. Quiz 2: Market Research and Competition	26. Review
	13. Alternate Quiz 2 - Form A: Market Research and Competition*	27. Test
	14. Alternate Quiz 2 - Form B: Market Research and Competition*	28. Alternate Test - Form A*
		29. Alternate Test - Form B*
		30. Glossary and Credits

Unit 5: Management and Business Plans		
Small Business Entrepreneurship	Assignments	
	1. Functions of Management	14. Project: Analyze a Business Plan - Part 3
	2. Project: Leadership Styles	15. Project: Analyze a Business Plan - Part 4
	3. Organization Structure	16. Quiz 2: Business Plan
	4. Project: Organizational Chart	17. Alternate Quiz 2 - Form A: Business Plan*
	5. Regulations to Protect Employees	18. Alternate Quiz 2 - Form B: Business Plan*
	6. Quiz 1: Management	19. Unit Project: Business Ventures - Part 5
	7. Alternate Quiz 1 - Form A: Management*	20. Special Project*
	8. Alternate Quiz 1 - Form B: Management*	21. Review
	9. Business Plan	22. Test
	10. Project: Business Plan	23. Alternate Test - Form A*
	11. Project: Business Plan Sources	24. Alternate Test - Form B*
	12. Project: Analyze a Business Plan - Part 1	25. Glossary and Credits
	13. Project: Analyze a Business Plan - Part 2	
Unit 6: Course Review, and Exam		
SBE	Assignments	
	1. Review	3. Alternate Exam - Form A*
	2. Exam	4. Alternate Exam - Form B*

(*) Indicates alternative assignment

Technology and Business

Technology and Business is a year-long, high school elective that teaches students technical skills, effective communication skills, and productive work habits needed to make a successful transition into the workplace or postsecondary education. In this course, students gain an understanding of emerging technologies, operating systems, and computer networks. In addition, they create a variety of business documents, including complex word-processing documents, spreadsheets with charts and graphs, database files, and electronic presentations.

This course provides key knowledge and skills in the following areas:

1. Emerging Technologies
2. Operating Systems
3. Word Processing
4. Spreadsheets
5. Databases
6. Communication Skills
7. Telecommunications
8. Electronic Presentations
9. Computer Networks
10. Project Management

By the end of the course, the student should be able to do the following:

- Select the appropriate technology to address business needs.
- Describe and compare types of operating systems.
- Use the computer's operating system to execute work responsibilities.
- Identify the purpose and style of various business documents.
- Create complex word-processing documents with columns, bulleted lists, tables, and graphs.
- Improve speed and accuracy of keyboarding.
- Use spreadsheets to calculate, graph, solve business problems, and make predictions.
- Perform data-management procedures using database technology.
- Demonstrate communication skills for obtaining and conveying information.
- Send and receive information using electronic mail, following appropriate guidelines.
- Describe and identify components of the telecommunications industry.
- Create and deliver an effective presentation following presentation guidelines.
- Describe the components required to establish a network.

- Identify the information management requirements and business needs of an organization.
- Use project-management tools and processes to manage a business project successfully.

Unit 1: Business Technology		
Technology and Business	Assignments	
	1. Course Overview	10. Project: Defining Technical Terms
	2. Hardware versus Software	11. Quiz 2: Business Solutions
	3. Current Business Technology	12. Alternate Quiz 2—Form A: Business Solutions*
	4. Equipment Maintenance	13. Alternate Quiz 2—Form B: Business Solutions*
	5. Quiz 1: Overview of Business Technology	14. Report: Technology in Business
	6. Alternate Quiz 1—Form A: Overview of Business Technology*	15. Special Project*
	7. Alternate Quiz 1—Form B: Overview of Business Technology*	16. Review
	8. Business Solutions Case Studies	17. Test
	9. Emerging Technology	18. Alternate Test—Form A*
		19. Alternate Test—Form B*
		20. Glossary and Credits

Unit 2: Computer Operating Systems		
Technology and Business	Assignments	
	1. What Is an Operating System?	12. Getting Started—Exploring the Desktop
	2. Utilities	13. Using the Interface
	3. Quiz 1: An Introduction to Operating Systems	14. File Management
	4. Alternate Quiz 1—Form A: An Introduction to Operating Systems*	15. Quiz 3: Using the Operating System
	5. Alternate Quiz 1—Form B: An Introduction to Operating Systems*	16. Alternate Quiz 3—Form A: Using the Operating System*
	6. Mac	17. Alternate Quiz 3—Form B: Using the Operating System*
	7. Windows	18. Project: Customize Your Desktop
	8. Linux	19. Special Project*
	9. Quiz 2: Types of Operating Systems	20. Review
	10. Alternate Quiz 2—Form A: Types of Operating Systems*	21. Test
	11. Alternate Quiz 2—Form B: Types of Operating Systems*	22. Alternate Test—Form A*
		23. Alternate Test—Form B*
		24. Glossary and Credits

Unit 5: Databases		
Technology and Business	Assignments	
	1. Comparing Databases and Spreadsheets	14. Project: Data Warehouse*
	2. Understanding Database Terms	15. Project: Using a Database to Create a Business Report*
	3. Project: Creating a Database	16. Quiz 2: Database Features
	4. Working with Data and Records	17. Alternate Quiz 2—Form A: Database Features*
	5. Project: Creating a Database	18. Alternate Quiz 2—Form B: Database Features*
	6. Quiz 1: Database Basics	19. Special Project*
	7. Alternate Quiz 1—Form A: Database Basics*	20. Review
	8. Alternate Quiz 1—Form B: Database Basics*	21. Test
	9. Using Databases to Search and Query	22. Alternate Test—Form A*
	10. Project: Working with Queries	23. Alternate Test—Form B*
	11. Project: Using a Database to Generate Mailings*	24. Glossary and Credits
	12. Importing and Exporting Data	
	13. Data Analysis	

Unit 6: Semester Review and Exam		
T&B	Assignments	
	1. Review	3. Alternate Exam—Form A*
	2. Exam	4. Alternate Exam—Form B*

Unit 7: Communication Skills		
Technology and Business	Assignments	
	1. Communication Skills	14. Finding Reliable Internet Resources
	2. Electronic Communication Skills	15. Paraphrasing and Summarizing
	3. Project: Revising E-mail Messages	16. Organizing Information
	4. Quiz 1: Overview of Effective Communication Skills	17. Quiz 3: Using Written Information
	5. Alternate Quiz 1—Form A: Overview of Effective Communication Skills*	18. Alternate Quiz 3—Form A: Using Written Information*
	6. Alternate Quiz 1—Form B: Overview of Effective Communication Skills*	19. Alternate Quiz 3—Form B: Using Written Information*
	7. Workplace Skills, Habits, and Attitudes	20. Report: Business Skills
	8. Active Listening	21. Special Project*
	9. Constructive Feedback	22. Review
	10. Project: Employee Action Plan	23. Test
	11. Quiz 2: Desirable Workplace Skills, Habits, and Attitudes	24. Alternate Test—Form A*
	12. Alternate Quiz 2—Form A: Desirable Workplace Skills, Habits, and Attitudes*	25. Alternate Test—Form B*
	13. Alternate Quiz 2—Form B: Desirable Workplace Skills, Habits, and Attitudes*	26. Glossary and Credits

Unit 8: Telecommunications Technology		
Technology and Business	Assignments	
	1. The Parts and the Pieces	11. Project: Analyze It
	2. Case Studies	12. Quiz 2: Using and Choosing Telecommunication Technology
	3. Quiz 1: The Telecommunications Industry – An Overview	13. Alternate Quiz 2—Form A: Using and Choosing Telecommunication Technology*
	4. Alternate Quiz 1—Form A: The Telecommunications Industry – An Overview*	14. Alternate Quiz 2—Form B: Using and Choosing Telecommunication Technology*
	5. Alternate Quiz 1—Form B: The Telecommunications Industry – An Overview*	15. Special Project*
	6. E-mail	16. Review
	7. Beyond E-mail	17. Test
	8. E-mail Ethics and Work Habits	18. Alternate Test—Form A*
	9. Netiquette	19. Alternate Test—Form B*
	10. Evaluating Telecommunication Technologies	20. Glossary and Credits

Unit 9: Presentation Technology		
Technology and Business	Assignments	
	1. What is Presentation Technology?	12. Content
	2. How is Presentation Technology Used?	13. Layout
	3. Quiz 1: An Introduction to Presentation Technology	14. Putting It All Together
	4. Alternate Quiz 1—Form A: An Introduction to Presentation Technology*	15. Quiz 3: Presentation Planning
	5. Alternate Quiz 1—Form B: An Introduction to Presentation Technology*	16. Alternate Quiz 3—Form A: Presentation Planning*
	6. Working with Text	17. Alternate Quiz 3—Form B: Presentation Planning*
	7. Working with Graphics	18. Project: Creating a Presentation
	8. Working with Special Effects	19. Special Project*
	9. Quiz 2: Presentation Guidelines	20. Review
	10. Alternate Quiz 2—Form A: Presentation Guidelines*	21. Test
	11. Alternate Quiz 2—Form B: Presentation Guidelines*	22. Alternate Test—Form A*
		23. Alternate Test—Form B*
		24. Glossary and Credits

Unit 10: Computer Networks		
Technology and Business	Assignments	
	1. What is Project Management?	10. Career Paths in Information Technology
	2. Project Management Tools	11. Quiz 2: Managing a Project
	3. Quiz 1: Introduction to Project Management	12. Alternate Quiz 2—Form A: Managing a Project*
	4. Alternate Quiz 1—Form A: Introduction to Project Management*	13. Alternate Quiz 2—Form B: Managing a Project*
	5. Alternate Quiz 1—Form B: Introduction to Project Management*	14. Special Project*
	6. Initiating and Planning a Project	15. Review
	7. Project: Initiating a Project	16. Test
	8. Executing and Closing a Project	17. Alternate Test—Form A*
	9. Project: Project Meeting	18. Alternate Test—Form B*
		19. Glossary and Credits

Unit 13: Course Review and Exam			
T&B	Assignments		
	1. Review	3. Alternate Exam—Form A*	
	2. Exam	4. Alternate Exam—Form B*	

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Education and Training

Introduction to Careers in Education and Training

The Introduction to Careers in Education and Training course will introduce students to the field of education and training, and the opportunities available for early-childhood care, primary school, secondary school, higher education, vocational training, and adult and continuing education. The students will gain an understanding of the career options available in teaching, administrative work, and support services. They will also explore the education and background experience needed to succeed in these careers.

Students will learn about the evolution of the modern educational system in the United States, and the policies and laws that govern educational institutions. They will also discover the similarities and differences between the ethical and legal obligations of working with adults versus working with children.

Students will learn about the skills needed to be effective communicators. They will also learn how to differentiate between different types of learning theories, and they will explore how to implement current principles from educational psychology into the classroom.

Students will also learn how to create a safe and healthy learning environment. They will discover the federal laws and agencies that set health-and-safety standards, and they will learn how these regulations are enforced in the workplace.

The objective of this course is to introduce the student to the field of education and training, and to explain the career opportunities that are available in this field.

Objectives

- Apply communication skills with students, parents, and other groups to enhance learning and a commitment to learning.
- Demonstrate critical-thinking skills while processing educational communications, perspectives, policies, and/or procedures.
- Categorize risks to safety, health, and the environment in education and training settings.
- Demonstrate group-collaboration skills to enhance professional education and training practice.
- Analyze ethical and legal policies of professional education and training practice.
- Describe legal rights that apply to individuals and practitioners within education and training settings.
- Define state and federal professional development requirements to maintain employment and to advance in an education and training career.
- Apply organizational skills and logic to enhance professional education and training practice.
- Demonstrate group-management skills that enhance professional education and training practice.

Intro. to Careers in Education and Training	Unit 1: Education and Training: Historical Perspectives, Introduction and Critical Skills	
	Assignments	
	1. Course Overview	10. Overcoming Communication Barriers
	2. Historical Foundations of Education and Training	11. Educational Funding Opportunities to Improve Schools
	3. Project: What Did Children Learn	12. Project: Write an Educational Grant Proposal
	4. Current Trends and Social, Political, and Economic Goals of Education and Training	13. Quiz 2: Communication Skills in Education and Training
	5. Overview of Careers in Education and Training	14. Special Project*
	6. Project: Create a Job Advertisement	15. Test
	7. Quiz 1: Education and Training: Historical Perspectives, Introduction, and Critical Skills	16. Course Project Part 1: You are the Teacher*
	8. Communication Skills 101	17. Glossary and Credits
	9. Project: Evaluate Communication Skills	
Intro. to Careers in Education and Training	Unit 2: Learning Styles and Collaborative Learning	
	Assignments	
	1. Learning and Learning Theories	10. Careers in Instructional Design
	2. Project: Write a Classroom Activity	11. Project: Write a Resume for an Instructional Designer
	3. How to Encourage Students to Want to Learn	12. Quiz 2: Collaborative Learning and Group Skills in Education and Training
	4. How to Encourage Students to Think about Their Thinking	13. Special Project*
	5. Project: Develop Your Metacognitive Skills	14. Test
	6. Quiz 1: Cognition and Learning	15. Course Project Part 2: Design a Student Activity*
	7. Group Dynamics	16. Glossary and Credits
	8. Project: Diagram your Groups	
	9. When Teachers and Students Learn Together	
Intro. to Careers in Education and Training	Unit 3: Educational Policy and Human Resource Development	
	Assignments	
	1. Careers in Educational Research and Policy	9. Meeting Models
	2. Project: Investigate Career Options	10. Careers in Human Resources Development
	3. Federal Policies on Primary and Secondary Education	11. Project: Design Your Undergraduate Curriculum
	4. Federal Policies on Adult Education	12. Quiz 2: Human Resource Development
	5. Project: Create an Informational Poster	13. Special Project*
	6. Quiz 1: Perspectives in Educational Policy	14. Test
	7. Conflict Management and Resolution	15. Course Project Part 3: Resolve Potential Conflicts*
	8. Project: Design a Conflict Resolution Pamphlet	16. Glossary and Credits

Unit 4: Ethical and Legal Policies of Careers in Education and Training		
Intro. to Careers in Education and Training	Assignments	
	1. Legal Responsibilities of Working with Children and Adolescents	9. Ethics in Higher Education
	2. Project: The People Behind the Laws	10. Careers in Higher Education
	3. Ethical Responsibilities in Education and Training	11. Project: Biography of a College President
	4. Careers in Social Work, Psychology, and School Counseling	12. Quiz 2: Ethical and Legal Responsibilities of Working with Adults
	5. Project: Interview a Professional	13. Special Project*
	6. Quiz 1: Ethical and Legal Responsibilities of Working with Children and Adolescents	14. Test
	7. Laws Governing Higher Education	15. Course Project Part 4: Research Local, State, and Federal Education Laws*
	8. Project: Research a School's Financial Aid Options	16. Glossary and Credits
Unit 5: Health and Safety in Education and Training		
Intro. to Careers in Education and Training	Assignments	
	1. Health and Safety Regulations in Early Child-care Settings	9. Training for Health and Safety in the Workplace
	2. Project: Create an Informational Brochure	10. Careers in Health and Safety
	3. Health and Safety Regulations in K-12 Schools	11. Project: Create a Chart Comparing Careers in Health and Safety
	4. Careers in Health and Safety in Schools	12. Quiz 2: Health and Safety in the Workplace
	5. Project: Write a School Newspaper Article that Highlights the Contributions of School Health and Safety Personnel	13. Special Project*
	6. Quiz 1: Health and Safety in the School Setting	14. Test
	7. Health and Safety Regulations in the Workplace	15. Course Project Part 5: Design a Safe and Healthy Learning Space*
	8. Project: Create an Informational Poster	16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
ICET	Assignments	
	1. Course Project Part 6: Write an Educational Grant Proposal *	2. Review
		3. Exam

(*) Indicates alternative assignment

Teaching and Training Careers

This course introduces students to the art and science of teaching. It provides a thorough exploration of pedagogy, curriculum, standards and practices, and the psychological factors shown by research to affect learners. In five units of study, lessons, and projects, students engage with the material through in-depth exploration and hands-on learning, to prepare them for teaching and training careers. Students are given many opportunities to be the teacher or trainer, and to explore the tasks, requirements, teaching strategies, and research-based methods that are effective and high-quality.

Unit One provides foundational information on the evolution of education, educational formats, learning theories and theorists, and the interconnectedness of knowledge areas in teaching and training careers. In Unit Two, students become teachers, creating courses and lesson plans to standards, in their exploration of instructional design and planning. They investigate resources and types of materials teachers select, use, and create.

Unit Three focuses on classroom strategies, as students role-play in simulations to devise methods of handling classroom issues and engage individual learners. They assess student and teacher performance through assessments themselves, examining the effectiveness of various methods. Unit Four focuses on the importance of a positive environment, as evidenced through research, and students identify elements that achieve this outcome. Students contrast inclusion-based education with previous instructional models from educational history. Unit Five completes the 30 lesson segments with student investigation of data collection; rankings; student records; and how data is collected, compiled, used, and stored. Students research outreach methods and accountability regulations and practices, to see how data use affects community standing and relationships, policy reform, and school reputation.

Students complete the course with a comprehensive knowledge of what is required in educational qualifications, preparing for, obtaining, and excelling in a teaching and training career they are encouraged to determine for themselves. They gain an informed awareness of research-based methods, effective strategies, the needs of individual learners, and the challenges teachers and trainers face in today's educational landscape.

Objectives

- Categorize uses of statistics, evaluations, and reports.
- Compare learning styles and effective tools.
- Compare presentation and preparation attributes of teaching with other professions.
- Compare training and teaching goals and learning strategies.
- Identify components or types of lesson segments.
- Argue the importance of engaged learners and a positive environment.
- Describe the benefits of inclusive classrooms.
- Describe the importance of well-planned lessons for holding attention.
- Describe knowledge areas in training in contrast to teaching.
- Describe learning theory and theorists.
- Describe research on individual learners and school readiness.
- Describe teaching styles and lesson planning.
- Differentiate training pedagogy from that of teaching.
- Evaluate the needs of individual learners.
- Identify teacher-parent interactions.
- Identify the value of effective teaching styles.
- Summarize the effectiveness of balanced lesson flow.
- Summarize the evolution of learning theories.
- Summarize factors important to adult learning.

- Summarize factors in classroom environments that affect learning.
- Summarize the theory of multiple intelligences.
- Summarize ways in which materials assist individual learners.
- Summarize Worldviews in learning theory.

Unit 1: Foundations of Pedagogy		
Teaching and Training Careers	Assignments	
	1. Course Overview	10. Assessing Instructional Standards
	2. Educational Knowledge Areas	11. Individual Learning in Standardized Classrooms
	3. Project: Your Pet Theory	12. Project: Classroom Anecdotes as Research
	4. Learning Theories and Student Experiences	13. Quiz 2: Standards and Standardized Learning
	5. The Difference Between Teaching and Training	14. Special Project*
	6. Project: Training Day	15. Test
	7. Quiz 1: History, Learning Theories and Theorists	16. Course Project Part 1: Your Educational Approach*
	8. Defining Instructional Standards	17. Glossary and Credits
	9. Project: Pick a Subject and Plan a Class to Standards	

Unit 2: Planning and Preparing a Lesson		
Teaching and Training Careers	Assignments	
	1. Creating the Lesson Plan	10. Project: Explore Teacher-Created Materials
	2. Project: Build Your Lesson Plan	11. Resources: Evaluating the Source
	3. Revising Lesson Plans for Effectiveness	12. Quiz 2: Curriculum Resources
	4. Project: Revise Your Lesson Plan	13. Special Project*
	5. Using Bloom's Taxonomy	14. Test
	6. Quiz 1: The Lesson Plan	15. Course Project Part 2: Your Daily Plan as a Teacher*
	7. Choosing and Using Resources: Textbooks	16. Glossary and Credits
	8. Project: Find a Great Textbook for Your Class	
	9. Resources: Teacher-Created Materials	

Unit 3: Delivering and Assessing		
Teaching and Training Careers	Assignments	
	1. Teaching Skills for Effective Lessons	9. Types of Assessments
	2. Project: Think Fast!	10. Creating Assessment Activities
	3. Lesson Components for Success	11. Project: Create an Awesome Assessment
	4. Project: Rethink Your Lesson Plan for Successes	12. Quiz 2: Assessments
	5. Active Learning Strategies	13. Special Project*
	6. Quiz 1: Teaching Styles	14. Test
	7. Focus on Assessments	15. Course Project Part 3: You're the Teacher, What's Your Style? *
	8. Project: Research Assessment Requirements in Your State	16. Glossary and Credits

Teaching and Training Careers	Unit 4: Managing the Learning Environment	
	Assignments	
Teaching and Training Careers	1. Schools in the Community	9. Improving Learning Environments
	2. Project: A Moment in School History	10. Inclusion of Multiple Intelligences
Teaching and Training Careers	3. Developmentally Appropriate Materials	11. Project: Multiple Intelligences in Action
	4. Creating Positive School Environments	12. Quiz 2: Inclusive Classroom Strategies
Teaching and Training Careers	5. Project: Create a Positive Environment	13. Special Project*
	6. Quiz 1: School Environments in the Community	14. Test
Teaching and Training Careers	7. The Inclusive Classroom	15. Course Project Part 4: Meet the Principal: You! *
	8. Project: The Non-Inclusive Classroom: A Cautionary Tale	16. Glossary and Credits
Teaching and Training Careers	Unit 5: Data and Use in School Relations	
	Assignments	
Teaching and Training Careers	1. Keeping Track of Performance	9. Teacher-Parent Communication
	2. Project: School Report Cards and Rankings Check	10. Accountability in Education
Teaching and Training Careers	3. Data Collection Systems	11. Project: Accountability Project
	4. Project: Data Collection Systems Hunt	12. Quiz 2: Education Outreach
Teaching and Training Careers	5. How Data Affects Policy in Education	13. Special Project*
	6. Quiz 1: Data Collection in Schools	14. Test
Teaching and Training Careers	7. Education Advocacy	15. Course Project Part 5: Peer Evaluations*
	8. Project: You're the Advocate	16. Glossary and Credits
TTC	Unit 6: Course Project, Review, and Exam	
	Assignments	
TTC	1. Course Project Part 6: Putting it All Together*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Finance

Introduction to Careers in Finance

The Introduction to Careers in Finance course provides the fundamentals of the financial services industry in the United States and explores the jobs and career opportunities that the industry offers.

Unit 1 introduces the financial services industry and the financial systems that operate in the US and internationally.

Unit 2 examines securities markets and investment companies, looks at how companies evaluate and mitigate risk, and discusses the valuation of stocks and bonds.

Unit 3 discusses the roles and responsibilities of corporate finance and accounting, analysis of financial statements, capital budgeting, and capital structure.

Unit 4 focuses on banking services, including how the industry is organized and regulated and how risks are managed.

Unit 5 looks at the insurance industry, including how it is organized and regulated, how it addresses risks, and the career opportunities it offers.

Objectives

- Explain the financial system.
- Evaluate career opportunities in financial services.
- Describe the role of intermediaries in finance.
- Examine and define the key agencies governing US banking and securities industries.
- Characterize the impact of international finance on US financial system regulations.
- Review the attributes of a well-functioning financial system.
- Evaluate the role of regulatory bodies in ensuring compliance with regulations.
- Identify the importance of transparency in the financial system.
- Identify different types of securities and markets.
- Describe how diversification works with risk and return.
- Discuss how to analyze a bond for investment purposes.
- Describe, compare, and apply the main techniques used for equity valuation.
- Analyze the methods used to assess the value of a futures contract.
- Discuss the roles and responsibilities of corporate finance.
- Create a framework to understand the analysis of financial statements.
- Describe how money grows over time when invested through compounding.
- Identify issues affecting the cost of capital.
- Describe the elements of a company's capital structure.
- Explain how a company can use its profits to increase its value.
- Describe the nature, structure, and functions of banking firms.
- Explain how banks mitigate their risks.
- Describe the role of the Federal Reserve in supporting banks.
- Summarize the nature and types of risks faced by businesses and how they use insurance to manage those risks.
- Explain nontraditional risks and how companies address them.
- Summarize the types of jobs and careers offered by insurance companies.
- Discuss the role of state insurance commissioners in regulating insurance companies.

Unit 1: Finance Overview and Financial Services		
Intro. to Careers in Finance	Assignments	
	1. Course Overview	11. Project: The Fiscal Cliff
	2. Introduction to the Financial Services Industry	12. International Finance
	3. Project: Exploring Careers in Financial Services	13. Project: When Financial Services Fail to serve the Consumer
	4. Financial System and Financial Intermediaries	14. Quiz 2: Constantly Changing Financial Systems
	5. Project: Exploring Stock Market Fraud	15. Special Project*
	6. Dynamics of Financial Services Systems	16. Test
	7. Quiz 1: Market Organization and Structure	17. Course Project Part 1: Find the Right Company*
	8. Traits for a Healthy Financial System	18. Glossary and Credits
	9. Project: Mortgage Meltdown	
	10. Financial Regulation and Compliance	

Unit 2: Securities Analysis and Investments		
Intro. to Careers in Finance	Assignments	
	1. Securities Markets and Investment Companies	9. Equity Valuation
	2. Project: When It All Goes Wrong on Wall Street	10. Project: Researching Stock Valuations
	3. Risk and Return, Efficient Diversification	11. Options and Futures Valuation
	4. Introduction to the Financial Services Industry	12. Quiz 2: Securities Valuation
	5. Project: Risk Analysis	13. Special Project*
	6. Quiz 1: Basics of Securities Analysis	14. Test
	7. Bond Valuation	15. Course Project Part 2: Explore Jobs and Careers*
	8. Project: Evaluating Bonds	16. Glossary and Credits

Unit 3: Principles of Corporate Finance		
Intro. to Careers in Finance	Assignments	
	1. Introduction to Financial Statement Analysis	9. Project: Financial Condition of the Energy Industry
	2. Project: Financial Statement Analysis	10. Dividends and Payout Policy
	3. Financial Statement Analysis	11. Project: Effects of the Mortgage Meltdown
	4. Project: Application of Ratio Analysis	12. Quiz 2: Capital Structure
	5. The Time Value of Money	13. Special Project*
	6. Quiz 1: The Finance Function and Financial Reporting and Analysis	14. Test
	7. Capital Budgeting and the Cost of Capital	15. Course Project Part 3: Prepare a Learning Plan*
	8. Financial Leverage and Capital Structure Policy	16. Glossary and Credits

Unit 4: Banking Services		
Intro. to Careers in Finance	Assignments	
	1. Organization and Structure of the Banking Industry	10. Project: Bailing Out Troubled Banks
	2. Project: Bitcoin: A New Approach to Currency	11. Asset-backed Securities, Loan Sales, and Derivatives
	3. Banking Regulation	12. Project: Bank Financial Positions
	4. Project: Exploring the Dodd-Frank Act	13. Quiz 2: Bank Risk Management
	5. Bank Financial Statements and Performance	14. Special Project*
	6. Project: Bank Solvency and Risk Measures	15. Test
	7. Quiz 1: Introduction to Banking	16. Course Project Part 4: Understand Risk*
	8. Managing Liability and Liquidity Risk	17. Glossary and Credits
	9. Managing Deposit Insurance: Bank Capital and Capital Regulation	

Unit 5: Risk Management and Insurance		
Intro. to Careers in Finance	Assignments	
	1. The Role of Insurance in Addressing Risk	9. Project: Advising the Client on an Annuity.
	2. Project: Keystone: Yes, or No?	10. Government Regulation of Insurance
	3. Introduction to Risk Management	11. Project: Client Advice for Health Care Compliance
	4. Project: Risk Assessment and Mitigation	12. Quiz 2: Insurance
	5. Advanced Topics in Risk Management	13. Special Project*
	6. Quiz 1: Risk Management	14. Test
	7. Careers in Insurance	15. Course Project Part 5: Be Aware of Regulations*
	8. Financial Operations of Insurance	16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
ICF	Assignments	
	1. Course Project Part 6: Look to the Future*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Banking Services Careers

The exchange of money in the United States is generally managed with the services of banks and other financial institutions, whose reputations depend greatly on customer satisfaction and trust. Many of the products we use on a daily basis, like checking and savings accounts, debit cards, credit cards, and loans, are the backbone of the banking industry. This course will provide an overview of how the banking system works, what the Federal Reserve is, and the technical and social skills needed to work in banking and related services. Students will explore career paths and the required training or higher education necessary, and will gain an understanding of the basic functions of customer transactions (i.e., setting up an account, processing a loan, or establishing a business), cash drawer activity, check collection processes, and other customer service–related transactions. This course will also discuss how technology has changed banking in the 21st century. The banking industry is responsible for many of the products that we use on a daily basis, from checking and savings accounts to debit cards, credit cards, and loans.

This course will focus on the specific skills related to banking and related services. In addition, you will explore career paths and the required training or higher education preparation necessary to obtain a career in banking and related services. Also, you will gain an understanding of the basic functions of customer transactions, cash drawer activity, check collection processes, and other customer service–related transactions. This course will also discuss how technology has changed the banking and related services industry. Finally, this course will provide an overview of the technical and people skills necessary to aid consumers with setting up an account, processing a loan, or establishing a business.

Objectives

- Examine laws and regulations to manage business operations and transactions in the banking services industry.
- Identify positive, ongoing relationships with banking customers.
- Analyze the use of financial resources to enhance banking performance.
- Demonstrate the use of banking technology and equipment.
- Plan the day-to-day activities within a banking organization to ensure secure operations.
- Evaluate career-planning concepts, tools, and strategies to explore, obtain, and/or develop a career in banking services.
- Label client needs and wants and compose a response through planned, personalized communication to guide purchase decisions and enhance future business opportunities in banking services.

Unit 1: Description of the Banking Industry	
Banking Services Careers	Assignments
	1. Course Overview
	2. Overview of the Federal Reserve System
	3. The Money Supply and Monetary Policy
	4. Project: Fed Decision Making
	5. Banking Regulations and Oversight
	6. Project: Factors of a CAMELS Rating
	7. Quiz 1: The Federal Reserve
	8. Overview of Bank Charters
	9. State-Chartered Versus Federally-Chartered Banks
	10. Project: Open a New Bank
	11. Credit Unions
	12. Project: Compare and Contrast
	13. Quiz 2: Types of Financial Institutions
	14. Special Project*
	15. Test
	16. Course Project Part 1: Introduction of Your Product or the Improvement to a Product*
	17. Glossary and Credits

Unit 2: Bank Performance		
Banking Services Careers	Assignments	
	1. Overview of Bank Performance	10. Reporting Financial Information
	2. Specific Criteria for Measuring Bank Performance	11. Project: Investigating Bank Violations
	3. Project: Bank Analysis	12. Quiz 2: Financial Information and Laws and Regulations
	4. Customers and Bank Performance and Profitability	13. Special Project*
	5. Project: Bank Ranking Analysis	14. Test
	6. Quiz 1: Maximizing Bank Performance	15. Course Project Part 2: Choosing a Charter*
	7. Overview of Financial Reports	16. Glossary and Credits
	8. Project: Reviewing a Federal Reserve Report	
	9. Income Statements and Balance Sheets	

Unit 3: Bank Products		
Banking Services Careers	Assignments	
	1. Checking Accounts	10. Project: Research a Loan
	2. Project: Checking Account Comparison	11. Finding the Right Loan and Bank to Meet Your Needs
	3. Savings Operations	12. Project: Find the Best Loan
	4. Project: Research Savings Options	13. Quiz 2: Lending
	5. Banks and Technology	14. Special Project*
	6. Project: Bank Comparisons	15. Test
	7. Quiz 1: Deposit Accounts and e-Banking	16. Course Project Part 3: Bank Services*
	8. Overview of Lending Products	17. Glossary and Credits
	9. The Lending Process	

Unit 4: Customer Relationships		
Banking Services Careers	Assignments	
	1. Overview of Personal Financial Planning	9. Being Involved to Increase Profitability
	2. Services Offered by Banks	10. Designing the CSR Program
	3. Project: Financial Planning Services	11. Project: CSR Investigation
	4. Technology, Personal Financial Planning, and Customer Retention	12. Quiz 2: The Bank and the Community
	5. Project: Explore Personal Finance Software	13. Special Project*
	6. Quiz 1: Personal Financial Planning	14. Test
	7. Overview of CSR	15. Course Project Part 4: Corporate Social Responsibility Strategy*
	8. Project: Researching CSR	16. Glossary and Credits

Unit 5: Banking and Consumers		
Banking Services Careers	Assignments	
	1. The Role of Bank Employees	9. Skills, Experience, and Education
	2. Project: What Do Bank Employees Do?	10. Project: Job Research
	3. Bank Employees and their Customers	11. Bank Career Trends
	4. Project: New Bank Customer Service Code	12. Quiz 2: Bank Employee Careers
	5. Building Relationships and Earning a Profit	13. Special Project*
	6. Quiz 1: Overview of Bank Employees	14. Test
	7. Career Opportunities	15. Course Project Part 5: Finding Key Employees*
	8. Project: Exploring Careers in a Bank	16. Glossary and Credits

Unit 5: Banking and Consumers		
BSC	Assignments	
	1. Course Project Part 6: Planning for the Trends*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Government and Public Administration

Introduction to Career in Government and Public Administration

The Introduction to Government and Public Administration course will provide students with an overview of American politics and public administration, including how political institutions and public management systems at the local, state, and federal levels exercise supervisory authority and maintain accountability.

Students will learn about the foundations of the U.S. government, the separation of powers, the federal civil service system, and the relationship between the government and state and local officials.

They will also learn about governmental powers of the states and of local governments, such as education, law enforcement, and transportation.

Students will learn about politics in the United States and the electoral process, political attitudes and opinions, and American political parties.

They will also learn about the structure of U.S. federal governmental institutions, the nature of bureaucracy, and the functions of the executive, legislative, and judicial branches of government.

Students will also learn about policy making in American government, including discussions of foreign and defense policies.

After completing this course, students will have a fundamental understanding of U.S. government and public administration. They will be able to explain the history and structure of the government, how the government functions and relates to state and local governments, and how the government creates and enforces public policies.

Objectives

- Explain the missions, responsibilities, and type of government agencies.
- Describe the federal civil service and the importance of intergovernmental cooperation.
- Identify ideas behind the federal system, including how the federal government interacts with state and local governments.
- Explain the political party system
- Discuss the electoral process and the role of mass media.
- Compare and contrast the three branches of U.S. federal government—executive, legislative, and judicial.
- Describe the policy making process and the differences between types of public policies.

Unit 1: Administrative and Political Systems in the United States		
Intro. to Careers in Government and Public Administration	Assignments	
	1. Course Overview	10. Project: Workforce Development Planning
	2. Foundations of U.S. Government and Democracy	11. Promoting Inter-Agency Coordination
	3. Project: The Founding Fathers	12. Project: The Hometown Federal Government
	4. A History of U.S. Public Administration	13. Quiz 2: The Federal Career Service
	5. The Modern Civil Service	14. Special Project*
	6. Project: Cabinet-level Departments	15. Test
	7. Quiz 1: History and Constitutional Foundations of Democratic Governance	16. Course Project Part 1: The Foundations of the U.S. Government*
	8. Public Service Roles and Responsibilities	17. Glossary and Credits
	9. Career Development in Federal Agencies	

Unit 2: Overlapping Powers of Governments		
Intro. to Careers in Government and Public Administration	Assignments	
	1. Understanding Federal, State, and Local Roles and Responsibilities	10. Project: Create a Video or Report about a Local Agency
	2. Federalism and Separation of Powers	11. Job Performance
	3. Project: Organize a Debate on Federalism	12. Quiz 2: Employment Opportunities with Local and State Governments
	4. Contemporary Intergovernmental Relations	13. Special Project*
	5. Project: Will You Collect Social Security?	14. Test
	6. Quiz 1: Federalism and Intergovernmental Relationships	15. Course Project Part 2: Separation of Powers Between the States and Federal Government*
	7. Number, Size, and Scope of Governments	16. Glossary and Credits
	8. Project: Conduct a Mock Public Hearing	
	9. Sources of Revenue and Spending Priorities	

Unit 3: Politics, Elections, and Democratic Participation		
Intro. to Careers in Government and Public Administration	Assignments	
	1. Formation of Public Opinion	9. Voter Turnout and the Electoral College
	2. The American Voter	10. Project: Election Day
	3. Project: Make Two Data Graphics About Social Media for Public Engagement	11. Redistricting, Reapportionment, and Gerrymandering
	4. Participation and Political Parties	12. Quiz 2: Campaigns, Elections, and the Role of Mass Media
	5. Project: Write and Design a Voter Guide	13. Special Project*
	6. Quiz 1: Public Opinion, Political Parties, and Interest Groups	14. Test
	7. Political Campaigns, Financing Elections, and Role of Social Media	15. Course Project Part 3: The American Voter*
	8. Project: Interview with a Politician	16. Glossary and Credits

Intro. to Careers in Government and Public Administration	Unit 4: Governmental Institutions: Executive, Legislative, and Judicial	
	Assignments	
	1. Changing Role of the Chief Executive	10. Judicial Review
	2. Project: Rewriting History Report	11. Project: Understanding the State Court System
	3. The Executive Bureaucracy	12. Quiz 2: The Legislative and Judicial Branches: Congress and the Courts
	4. Joint Control of Executive Agencies	13. Special Project*
	5. Project: Freedom of Information	14. Test
	6. Quiz 1: Executive Branch Responsibilities and Restraints	15. Course Project Part 4: How the Executive Branch Interacts with the Legislative Branch*
	7. Congressional Authority	16. Glossary and Credits
	8. Legislative and Budget Processes	
	9. Project: Making a Law	

Intro. to Careers in Government and Public Administration	Unit 5: Public Policy and Program Implementation	
	Assignments	
	1. Domestic and Social Policies	10. Presidential Direction in Foreign and Defense Policy
	2. Project: Analyze a Policy	11. Project: A Job in the State Department
	3. Regulatory Policies	12. Quiz 2: Protecting the Homeland: U.S. Foreign and Defense Policy
	4. Fiscal and Monetary Policies	13. Special Project*
	5. Project: How the Federal Reserve Implements Monetary Policy	14. Test
	6. Quiz 1: Putting Government Policies into Action	15. Course Project Part 5: Domestic Policy Issues*
	7. Making Foreign and Defense Policy	16. Glossary and Credits
	8. Project: Negotiating a Treaty	
	9. Protecting the United States	

ICGPA	Unit 6: Course Project, Review, and Exam	
	Assignments	
	1. Course Project Part 6: Serving the People: The Final Product *	2. Review
		3. Exam

(*) Indicates alternative assignment

National Security Careers

This course discusses careers in national security. It provides you with the history, background, and recent advances in this field. Millions of people work in national security positions, from military enlisted personnel, writers, politicians, photographers, and law enforcement personnel to agents, investigators, scientists, and administrative personnel. Just about any career you can imagine is available in national security.

In Unit 1, students learn that the term national security means much more than just U.S. military, the CIA, or the FBI. National security includes the actions of the president, Congress, law enforcement, and many agencies working together to ensure the safety of the United States and our allies. The unit covers the major departments and agencies responsible for national security. It also presents the history, laws, and policies that guide these groups. In many cases, these laws and policies directly affect the lives of most Americans.

Unit 2 presents the policymakers and agencies that make up the national security bureaucracy. It outlines the national security roles of the president, presidential cabinet and advisors, the 17 national security agencies, and Congress. Oversight and funding are also discussed in this unit.

Unit 3 provides information on the history and national security roles of the U.S. armed forces. It covers the Army, Air Force, Navy, Marines, National Guard, and Coast Guard. Technological advancements are presented, as well as careers within these branches of the military.

Unit 4 covers intelligence agencies and federal law enforcement. It covers the roles, responsibilities, and legal limitations of intelligence and law enforcement. Intelligence gathering (operations) and analysis are presented, including careers with various intelligence and law enforcement agencies.

Unit 5 discusses national security challenges in the 21st century. Rising threats such as terrorism, rogue nations, and weapons of mass destruction are presented. The unit also explores chemical, biological, nuclear, and radiological weapons examples and threats.

Objectives

- Analyze and interpret the theories behind various national security policies.
- Understand the duties of the various career paths in the national security field.
- Recognize and be able to apply the different laws and regulations affecting national security policies.
- Develop the interpersonal, conflict resolution, communication, and critical-thinking skills that are required for successful careers in an ever-changing economic, technological, political, and social environment.
- Understand how various agencies interact to ensure the safety of the United States.
- Demonstrate an understanding of military, intelligence, and law enforcement practices.
- Apply analytical methods to understand the process of gathering and utilizing intelligence to detect threats to national security.
- Understand the evolution of national security in the United States.
- Recognize the importance of technology as part of the overall process of providing national security.
- Develop an appreciation for the variety of roles and responsibilities associated with a career in a national security organization.

Unit 1: Introduction to Legal, Political, and Historical Aspects of National Security		
National Security Careers	Assignments	
	1. Course Overview	10. America's Rise as a World Power
	2. What Is National Security?	11. Project: U.S. Rise as World Power After 1898
	3. Laws Guiding National Security	12. The Legacy of the Cold War and War on Terror
	4. Project: National Security Laws Chart	13. Quiz 2: History of National Security Policy and Modern Concerns
	5. Philosophies of National Security	14. Special Project*
	6. Project: Isolationism vs. Interventionism Venn Diagram	15. Test
	7. Quiz 1: Theories, Laws, and Politics of National Security	16. Course Project Part 1: Investigate a National Security Career*
	8. U.S. National Security Policy Before 1898	17. Glossary and Credits
	9. Project: U.S. Diplomacy, Foreign Policy, and National Security Timeline (1607-1898)	
Unit 2: The National Security Bureaucracy		
National Security Careers	Assignments	
	1. The Role and Responsibility of the President in National Security	9. Congressional Committees, Oversight, and Appropriations
	2. Project: President's National Security Response Analysis	10. Project: Personal Reaction to Congressional Committee Work
	3. U.S. Executive Departments	11. Declaring War and Authorization for Use of Force
	4. Project: Executive Department National Security Issues and Solutions Chart	12. Quiz 2: The Legislative Branch
	5. Presidential Advisors	13. Special Project*
	6. Quiz 1: The Executive Branch	14. Test
	7. Roles and Responsibilities of the U.S. Senate and House of Representatives	15. Course Project Part 2: An Interview of National Security Personnel*
	8. Project: Roles of Congress: Similarities and Differences	16. Glossary and Credits
Unit 3: The Armed Forces		
National Security Careers	Assignments	
	1. The U.S. Military	8. Project: The National Guard in Your State
	2. The Impact of Technology on Combat and Non-Combat Operations	9. Roles of the Coast Guard
	3. Project: Military Technologies and Combat Operations	10. Project: Coast Guard Missions Chart
	4. Military Careers and Benefits	11. National Guard and Coast Guard Careers
	5. Project: Personal Military Career Plan	12. Quiz 2: The National Guard, Air National Guard, and Coast Guard
	6. Quiz 1: The United States Army, Navy, Marine Corps, and Air Force	13. Special Project*
	7. History, Organization, and Role of the National Guard	14. Test
		15. Course Project Part 3: National Security Career Chart*
		16. Glossary and Credits

Unit 4: Intelligence and Law Enforcement Agencies		
National Security Careers	Assignments	
	1. Understanding the Reality of Intelligence Operations	8. Project: Federal Law Enforcement Interview
	2. Project: Film Critique: Spy Movie	9. Federal Law Enforcement Operations
	3. The Impact of Technology on Intelligence Gathering	10. Federal Law Enforcement Career Paths
	4. Project: Declassified Intelligence Technologies Research	11. Project: Federal Law Enforcement Career Plan
	5. Legal Constraints and Accountability of Intelligence Agencies	12. Quiz 2: Law Enforcement Agencies
	6. Quiz 1: Intelligence Agencies	13. Special Project*
	7. Organization of Federal Law Enforcement Agencies	14. Test
		15. Course Project Part 4: Storyboard of a National Security Scenario & Response*
		16. Glossary and Credits
Unit 5: National Security Challenges in the 21st Century		
National Security Careers	Assignments	
	1. Identifying Terrorist Organizations	10. Project: Nuclear WMD Research
	2. Preventing Acts of Terrorism	11. The Threat of Chemical, Biological, Nuclear, and Radiological (CBNR) Weapons
	3. Project: Reaction to Terrorism Prevention	12. Quiz 2: Weapons of Mass Destruction
	4. Responding to Acts of Terrorism	13. Special Project*
	5. Project: Response to a Terrorist Attack	14. Test
	6. Quiz 1: Terrorism and Non-State Actors	15. Course Project Part 5: Create a Multimedia Presentation*
	7. Understanding the History and Policies Regarding Weapons of Mass Destruction	16. Glossary and Credits
	8. Project: WMD: History, Uses, and Regulations	
	9. Recognizing Nuclear Weapons Proliferation	
Unit 6: Course Project, Review, and Exam		
NSC	Assignments	
	1. Course Project Part 6: Give a Multimedia Presentation *	2. Review
		3. Exam

(*) Indicates alternative assignment

Health Science

Careers in Allied Health

As a Christian, it is important to do your best in whatever career path you choose. Your desire should be to help others achieve and maintain a healthy lifestyle. A career in allied health provides you the opportunity to meet the physical needs of many people. What is allied health in relation to the healthcare industry?

Allied health is the term for the area of healthcare (and health care professions) that provide support and care services other than specific doctoring and nurse care. At times, the line between allied health and "non-allied health" may seem to be separated by level of degree/education, although this is not always true.

Allied health career paths can be divided into general roles like diagnostic (testing to see what is wrong), technical (taking care of technology aspects), therapeutic (moving the patient toward healing) and direct patient care (caring for the patient in other ways), although there is some overlap in a few roles. There are a few hundred potential jobs and dozens of potential settings that one could work in.

The career field is important for several reasons. First, the care and support that allied health professionals provide is integral to the health care system. In addition, it is estimated that these professionals make up more than half of the entire health care field. This representation within the industry shows how very important the various roles are.

In this course, we will focus on select allied health careers, studying a variety of different levels, responsibilities, settings, education needs and amounts of patient contact. We will look at things like the degree or training needed for each job, the environment one would work in, how much money the position could make, and the facts of the actual working day.

Then, within each job group, we will explore important aspects that are applicable to the entire field of allied health, such as behaving ethically, working as a team, keeping patients safe and free from infections and germs, honoring diverse needs of diverse patients, and following laws and policies.

The last unit will then include several activities that allow the student to seriously engage with their career exploration and selection.

Objectives

- Learn about allied health careers, academic preparation, lifestyle, skills needed, licensing and credentialing, employment potential, and continuing education.
- Explore ethical and legal challenges in the healthcare field.
- Understand the role of allied health care professionals in the overall health care environment and the importance of teamwork in patient care.
- Examine the importance of cultural, social, and ethnic diversity in the healthcare workforce and environment.
- Learn legal/regulatory guidelines addressing patient and medical information and understand the issues related to confidentiality.
- Learn about safety measures and regulatory requirements.

Since this course leans heavily on reporting and research, students should already know how to choose appropriate resources (especially online), and how to properly cite those resources.

Unit 1: Introduction to Allied Health Careers		
Careers in Allied Health	Assignments	
	1. Course Overview	9. Project: Medical Ethics and the Christian
	2. What is Allied Health?	10. Surgical Technologists
	3. Project: Educational Pathway (education, testing, and credentials)	11. Perfusionist
	4. Exploring the Allied Health Competency Model	12. Project: Exploring Allied Health Careers
	5. Project: Evaluating Your Competencies in Light of Scripture	13. Quiz: First Responders and Emergency Personnel
	6. Who's the Hero? An Allied Health Story	14. Special Project*
	7. Quiz: Introduction	15. Test
	8. First Responders: EMT/Paramedic	16. Course Project Part 1: Establishing Your Blog*
		17. Glossary and Credits
Unit 2: Art and Technology		
Careers in Allied Health	Assignments	
	1. Medical Arts and Special Skills: Medical Illustrator	9. Project: Caring for Others
	2. Project: Medical Illustration/Emergency Medicine Career Comparison	10. Therapists and Technologists: Polysomnographic Technologists and Sleep Apnea
	3. Medical Arts and Special Skills: Orthotists and Prosthetists	11. Project: Polysomnographic Technologist (PT) Scenario
	4. Project: Orthotics and Prosthetics	12. Quiz: Therapists and Technologists
	5. Medical Arts and Special Skills: Art Therapist	13. Special Project*
	6. Quiz: Medical Arts and Special Skills	14. Test
	7. Therapists and Technologists: Respiratory Therapists and Cystic Fibrosis	15. Course Project Part 2: Situs Inversus*
	8. Therapists and Technologists: Radiologic Technologist and Situs Inversus	16. Glossary and Credits
Unit 3: Exercise Science and Patient Evaluation		
Careers in Allied Health	Assignments	
	1. Exercise as Medicine and the Exercise Physiologist	10. Project: Epilepsy Research Paper
	2. Project: Day in the Life	11. Cardiovascular Technologist
	3. Kinesiotherapy and the U.S. Veteran returning from Afghanistan	12. Quiz: Evaluating the Patient
	4. Project: Compassion Ministries	13. Special Project*
	5. Fitness Instructor and the New Year's Resolution	14. Test
	6. Quiz: Exercise Science	15. Course Project Part 3: Blogging about an Echocardiogram*
	7. Audiologists and Hearing Loss	16. Glossary and Credits
	8. Project: The Hip Hop Mogul	
	9. Electro-Neurodiagnostic (END) Technologist and the Nervous System	

Unit 4: Health Informatics and Health Administration		
Careers in Allied Health	Assignments	
	1. Health Informatics, Data Acquisition, and Medical Coding	10. Applications, Activities and Case Studies in Hospital and Healthcare Management
	2. Project: Medical Coding Ethics	11. Project: Support for Christian Healthcare Professionals
	3. Dental Informatics	12. Quiz: Hospital Administrator/Health Care Management
	4. Telemedicine and Mobile Computing Informatics	13. Special Project*
	5. Project: Online Symptom Analysis	14. Test
	6. Quiz: Health Informatics and Medical Coding	15. Course Project Part 4: Blogging on Medical Ethics*
	7. Introduction to Healthcare Management	16. Glossary and Credits
	8. Introduction to the Hospital Administrator Role	
	9. Project: Creating an Organizational Chart	
Unit 5: Counseling, Dietetics and Choosing a Career in Allied Health		
Careers in Allied Health	Assignments	
	1. Genetic Counseling An Introduction to the Career	9. Diet and the Body
	2. Bioinformatics and the Human Genome	10. Project: Stewardship and You
	3. Project: Mapping Genes	11. Career Exploration Activities
	4. Prenatal Counseling and Anomalies, Choice, Ethics, Science	12. Project: The Case Study
	5. Project: The Sanctity of Life	13. Quiz: Dietetics and Nutrition
	6. Quiz: Genetic Counseling	14. Special Project*
	7. Dietetics and Nutrition: An Introduction to the Career	15. Test
	8. Project: The Debate Between the Nutritionist and Dietician	16. Course Project Part 5: Personal Trainer and Dietician Consulting*
		17. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
CAH	Assignments	
	1. Course Project Part 6: Final Blogging Project*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Nursing: Unlimited Possibilities and Unlimited Potential

Each year the Gallup Poll conducts a survey of the American public to determine the ten most respected professions in the country. Since 2001, registered nurses have topped that list.

More registered nurses (2.7 million in 2010) work in healthcare than any other professional position; at the same time, a national shortage of qualified nurses exists and is projected to become significantly worse by 2020. As new nursing positions become available and a significant number of registered and licensed practical nurses approach retirement age, there are opportunities for recent graduates of accredited nursing programs throughout the country.

In a world that is increasingly secularized, there is a tremendous need for godly, Christian nurses who not only meet the physical needs of patients, but who can also provide prayer and spiritual support. They assist patients as well as lift up hurting families while placing a strong emphasis on the sanctity of human life.

However, in an era of new medical technology and increased specialization in patient care, healthcare administrators are becoming more discerning; offers of employment are extended to recent graduates of accredited baccalaureate nursing programs in far greater numbers than those offered to licensed practical nurses or registered nurses who successfully completed a hospital-based diploma program as well as those with an associate degree in nursing from a community college or professional school.

This course provides students opportunities to compare and contrast the various academic and clinical training pathways to an entry-level position in nursing and to explore the growing number of opportunities for professional advancement given the proper preparation and experience.

In June 2012, the U.S. Supreme Court upheld the majority of provisions in the Affordable Care Act, which will extend health insurance benefits to an additional 32 million residents of this country and represents the most significant changes in healthcare since the introduction of Medicare and Medicaid. Nurses will continue to play a pivotal role in the care and treatment of these patients as well as have opportunities to make significant contributions to a new definition of healthcare.

Partially in response to these rapid changes in healthcare, the Robert Wood Johnson Foundation and the National Academies' Institute of Medicine conducted a study of the current state of nursing as well as the profession's role in the future. This study, *The Future of Nursing*, has grown into a national initiative to redefine nursing education and scope of practice.

In this course, students will have several opportunities to learn about the expanding scope of professional practice for registered nurses and better understand the important changes proposed in the education and ongoing professional development of nurses.

A project at the end of this course will assist students in focusing their ambition and commitment to nursing service by better defining their available educational and clinical training opportunities.

Objectives

- Compare and contrast a variety of careers in nursing on the basis of academic preparation, scope of practice, training, licensure, patient contact, management/administrative responsibilities, and lifestyle.
- Examine nursing skills common to all nursing professions and explore skill sets that are specific to a nursing specialty or discipline.

- Calculate dosage given age, gender, anthropometric data and specific medication.
- Examine the history of the nursing profession and its contributions to health care through time.
- Evaluate case studies for scientific content and issues of ethics, privacy, and legal limitations to practice.

Unit 1: The Nursing Profession		
Nursing	Assignments	
	1. Course Overview	11. Project: Case Study: The Nursing Code of Ethics
	2. History of Nursing	12. Professionalism in Nursing
	3. Registered Nursing	13. Project: Presentation on a Career as a Registered Nurse
	4. Project: Careers in Nursing	14. Quiz 2: Ethics and Professionalism in Nursing
	5. LPN, CNA, HHA	15. Special Project*
	6. Project: Caveat Emptor	16. Test
	7. Quiz 1: Introduction	17. Course Project - Part 1: Selecting Your Research Topic*
	8. The Nursing Code of Ethics	18. Glossary and Credits
	9. Project: Defining the Members of a Healthcare Team	
	10. Role of the Nurse as Part of a Health Care Team	

Unit 2: Primary Nursing Positions		
Nursing	Assignments	
	1. Palliative and Hospice Nursing	9. Nurse Practitioner
	2. Project: Observing Pain and the Effects of Chronic Illness	10. Project: What's Your Position?
	3. Certified Nurse Midwife	11. Nurse Educator
	4. Critical Care Nursing	12. Project: Why Not Nursing?
	5. Project: Service Learning	13. Quiz 2: Primary Nursing Positions, Part 2
	6. Quiz 1: Primary Nursing Positions, Part I	14. Special Project*
	7. Nurse Anesthetist	15. Test
	8. Project: Analyzing Anesthesia	16. Course Project - Part 2: Identifying Resources*
		17. Glossary and Credits

Unit 3: Nursing Specialties		
Nursing	Assignments	
	1. OR Nursing and the Humanitarian Mission	9. Oncology Nurse and the Child with Leukemia
	2. Project: More about Médecins Sans Frontières	10. Project: On Trial: Clinical Oncology Trials
	3. Pediatric Nursing	11. Orthopedic Nurse and the Pedestrian
	4. Project: Read	12. Quiz 2: Nursing Specialties: Correctional, Oncology and Orthopedic Nursing
	5. Psychiatric Nursing	13. Special Project*
	6. Quiz 1: Nursing Specialties: Operating Room Nurse, Pediatrics, and Psychiatry	14. Test
	7. Correctional Nursing	15. Course Project - Part 3: Developing a Survey*
	8. Project: Case Study: What Constitutes Appropriate Care?	16. Glossary and Credits

Unit 4: More Nursing Specialties		
Nursing	Assignments	
	1. Cardiac Rehabilitation Nurse: Heart Transplant	9. Occupational Health Nurse and the Brazilian Blowout Standards Correlation
	2. Project: Developing a Cardiac Rehabilitation Program	10. Project: The Safety Film
	3. Nursing as a Mission	11. Gastroenterology/Endoscopy Nurse
	4. Project: Serving Abroad	12. Quiz 2: Nursing Specialties: Infection Control, Occupational Health and Gastroenterology/Endoscopy
	5. Ambulatory Nursing and Patient Independence	13. Special Project*
	6. Quiz 1: Nursing Specialties: Cardiac Rehabilitation, Ambulatory Nurse, and Nurse Missionary	14. Test
	7. Infection Control and the Nosocomial Infection	15. Course Project - Part 4: A Case Study*
	8. Project: Writing a News Story	16. Glossary and Credits
Unit 5: Nursing Career Alternatives		
Nursing	Assignments	
	1. Flight Nurse	10. Finding the Right Nursing Career
	2. Project: Help! Rating Air Ambulance Service Providers	11. Project: Finding the Right Nursing Career
	3. Forensic Nurse	12. Quiz 2: Nursing Career Alternatives: Holistic Nurse, Research Nurse, and Finding the Right Career in Nursing
	4. Project: Elder Abuse PSA	13. Special Project*
	5. Travel Nurse	14. Test
	6. Quiz 1: Nursing Career Alternatives: Flight Nurse, Forensic Nurse and Travel Nurse	15. Course Project - Part 5: Organizing Your Presentation*
	7. Holistic Nurse	16. Glossary and Credits
	8. Project: Researching the History of Nursing	
	9. Nurse Researcher	
Unit 6: Course Project, Review, and Exam		
Nursing	Assignments	
	1. Course Project - Part 6: Your Final Presentation*	3. Exam
	2. Course Review	

(*) Indicates alternative assignment

Human Services

Introduction to Consumer Services

In this introductory Consumer Services course, students will analyze various career paths in terms of employment opportunities. Educational requirements, including applicable hard and soft skills, certifications, and licensures for different pathways, will be discussed. Developing research, analytical, and presentations skills will be key components.

This course is designed as an overview to prepare students for a consumer services–related career and to introduce them to specialty areas. Emphasis is placed on the human services aspect (vs. corporate concerns) of consumer services, as well as Biblical principles and standards. Social issues and advocacy, as well as ethics and legalities, are a recurring theme. Students will gain knowledge of current issues affecting various consumer services professions and of the impact of local, state, national, and global issues on consumer services.

Objectives

- Analyze careers in the consumer services industry in terms of employment opportunities, salary levels, education requirements, necessary skills, certification requirements, entrepreneurial opportunities, and employment outlook.
- Understand the importance of exhibiting ethical behavior and encourage coworkers to comply with ethical and legal responsibilities in the workplace.
- Identify common safety concerns in an organization and describe ways to promote safety in the workplace.
- Demonstrate active listening techniques to interpret information and ensure the clarity of the information.
- Understand the role and importance of consumer advocacy groups at national, state, and local levels.
- Define the roles of credit counselors and risk management specialists.
- Describe and evaluate design careers, writing careers, and related communications-based careers in translation and interpretation.
- Define the role of writers and editors in consumer services.
- Demonstrate an ability to clearly articulate the organization's policies, rules, and procedures.
- Describe the role of a public relations director and evaluate public relations careers within consumer services.
- Evaluate sales and related marketing careers in consumer services.

Students should be computer literate at an intermediate level and have Internet access. Students should have basic research skills, as well as the ability to conduct online searches and access recommended Web sites. Basic math skills at the Algebra I level (arithmetic, ratios, graphing) are required. Intermediate-level proficiency with word processing, spreadsheet, and presentation software is highly encouraged, as is access to these programs for use in producing projects.

Unit 1: Introduction to Consumer Services		
Introduction to Consumer Services	Assignments	
	1. Course Overview	10. Project: Drafting a Safety Policy
	2. What Are Consumer Services?	11. External Influences on Consumer Services
	3. Customer Service and Consumer Advocacy	12. Project: Interview-based Article on Sustainability
	4. Project: Personal Skills Evaluation	13. Quiz 2: Organizational Structure
	5. Presenting the Professional Identity	14. Special Project*
	6. Project: Building a Portfolio	15. Test
	7. Quiz 1: Introduction and Basic Competencies	16. Course Project Part 1: Building an Org Chart*
	8. Organizational Structure	17. Glossary and Credits
	9. Safety Within the Organization	

Unit 2: Customer Service and Consumer Advocacy		
Introduction to Consumer Services	Assignments	
	1. What is Customer Service?	9. Project: Consumer Protection
	2. Conflict-resolution Strategies	10. The Role of Policymakers
	3. Project: Constructing a Customer Service Encounter Log	11. Project: A Plan for Advocacy
	4. Working with Databases	12. Quiz 2: Consumer Advocacy
	5. Project: Constructing a Database	13. Special Project*
	6. Quiz 1: The Customer Service Representative	14. Test
	7. What is Consumer Advocacy?	15. Course Project Part 2: Serving the Client*
	8. Consumer Advocacy at Various Levels	16. Glossary and Credits

Unit 3: Counseling, Advisement, Education		
Introduction to Consumer Services	Assignments	
	1. Financial Counseling	10. Risk Management in Financial Planning
	2. Developing a Financial Plan	11. Project: Building an Estate Plan
	3. Project: Building a Financial Plan	12. Quiz 2: Credit Counseling and Risk Management
	4. Spending Patterns and Budgeting	13. Special Project*
	5. Project: Building a Budget	14. Test
	6. Quiz 1: Financial Counseling Roles	15. Course Project Part 3: Our Town's Children Programs*
	7. Credit Counseling and Risk Management	16. Glossary and Credits
	8. Applying for Credit and Credit Scoring	
	9. Project: Evaluating Credit Offers	

Unit 4: Creativity		
Introduction to Consumer Services	Assignments	
	1. Creative Consumer Services – Design	9. Project: Hiring a Language Services Professional
	2. Fashion and Costume Design	10. Reading Strategies
	3. Project: Design Influences	11. Project: Reading to Write
	4. Trademarks, Patents, and Copyrights	12. Quiz 2: Writing and Interpretation
	5. Project: Protecting Your Original Work	13. Special Project*
	6. Quiz 1: The Designer	14. Test
	7. Writing and Editing	15. Course Project Part 4: Building a Brand*
	8. Translation and Interpretation	16. Glossary and Credits

Unit 5: Management, Sales, Public Relations	
Introduction to Consumer Services	Assignments
	1. Management Careers
	2. Strategic Analysis
	3. Project: Conducting a SWOT analysis
	4. Working with Employees
	5. Project: Developing a Training Presentation
	6. Quiz 1: Management
	7. Sales, Marketing, and Public Relations
	8. The Importance of Public Image
	9. Project: Writing a Media Release
	10. Marketing and Selling a Product
	11. Project: Writing a Marketing Plan
	12. Quiz 2: Sales and Public Relations
	13. Special Project*
	14. Test
	15. Course Project Part 5: Growing a Sustainable Organization*
	16. Glossary and Credits
Unit 6: Course Review and Exam	
ICS	Assignments
	1. Course Project Part 6: Our Town's Children, Inc. Annual Report 20XX*
	2. Review
	3. Exam

(*) Indicates alternative assignment

Information Technology

Introduction to Information Technology

In this course, we introduce students to the knowledge base and technical skills that will help them to successfully compete for jobs within the Information Technology Career Cluster. Lessons are structured so that students learn and then demonstrate not only critical assessment and analytic skills, but also interpersonal skills that are valued so highly among IT employers.

We explore a range of career tracks that include network engineers, application/programming developers, and systems analysts. These career paths are described in depth, discussing typical job responsibilities, educational and licensure requirements, working conditions, and job outlooks.

Our lessons help students place the evolution of technology and job opportunities in context so that they will understand their important role in furthering its development. We believe that the most successful IT professionals combine technical know-how with leadership ability. To this end, students learn that their acquired expertise comes with the responsibility to represent themselves and the companies they work for within the highest legal and ethical standards.

Objectives

- Identify the basic components and structure of a computer system and its use within a networking/communications environment.
- Design and implement a basic network while being introduced to multiple types of network systems.
- Apply both ethical and industry standard security policies to networks.
- Discuss the history and development and use of the Internet in business and society.
- Explain the development of human-centered technology interaction.
- Apply mobile computing technology capabilities to learning and business.
- Identify the variety of operating systems found on desktops, laptops, and mobile devices.
- Understand mobile application architecture, deployment, and marketing.
- Determine best practice application skills for the variety of information technology systems available to implement.
- Plan, develop, and implement an information system.
- Maximize use of the Internet within the home and business.
- Identify the structure of wireless communication networks and the mechanisms behind its functionality.
- Identify and develop protocols for use of the Internet within business.
- Identify and develop information system libraries and repositories of information.
- Develop an understanding of the logic behind object-oriented programming.
- Identify the multiple programming languages for use in mobile/Internet application development.
- Plan, develop, and implement a mobile/Internet application.

Unit 1: Hardware and Communications Technology Introduction		
Intro. to Information to Technology	Assignments	
	1. Course Overview	9. Human-Centered Technology
	2. Computer Systems and Networks	10. Project: Biometrics Report
	3. Network Ethics and Security	11. Mobile Computing
	4. Project: Benefit Analysis Study: Small Business Expansion	12. Project: Geocache Treasure Hunt
	5. Information Storage	13. Quiz 2: Internet in Business and Society
	6. Project: Correspondence Between Stringer and Newspaper Editor: Media Preview	14. Special Project*
	7. Quiz 1: Computer Systems and Networks	15. Unit 1 Test
	8. Internet in Business and Society	16. Course Project Part 1: Capstone Project*
		17. Glossary and Credits
Unit 2: Operating Systems, System Software, Mobile Applications		
Intro. to Information to Technology	Assignments	
	1. Computer, Server, and Mobile Operating Systems	8. Project: Mobile App Development
	2. Project: Similarities/Differences Chart: School Operating Systems	9. Applications vs. Software
	3. Operating Systems vs. System Software	10. The Mobile Application Business
	4. Battle of the Operating Systems	11. Project: Market Research Comparison/Contrast Matrix – Free Mobile App
	5. Project: PowerPoint Presentation: Smart Phone Preference Survey	12. Quiz 2: Mobile Application Development
	6. Quiz 1: Operating Systems and System Software	13. Special Project*
	7. Mobile Application Development and Implementation	14. Unit 2 Test
		15. Course Project Part 2: Capstone Project*
		16. Glossary and Credits
Unit 3: Introduction to Information Systems		
Intro. to Information to Technology	Assignments	
	1. What is an Information System?	10. Implementing Information Systems
	2. Project: Building a Local GIS	11. Project: On the Job: System Developer
	3. Types of Information Systems	12. Quiz 2: Developing and Implementing Information Systems
	4. Jobs in Information Systems	13. Special Project*
	5. Project: Career Day Presentation	14. Unit 3 Test
	6. Quiz 1: Introduction to Information Systems	15. Course Project Part 3: Capstone Project*
	7. Planning Information Systems	16. Glossary and Credits
	8. Project: Strategic Report	
	9. Developing Information Systems	
Unit 4: Internet Utilization and Information Literacy		
Intro. to Information to Technology	Assignments	
	1. Internet Use in Home and Business	9. Information Library Systems
	2. Project: School Internet Policies Report	10. Jobs in Information Literacy
	3. Security on the Internet	11. Project: Digital Library Research
	4. Project: Comparison Shopping Report	12. Quiz 2: Internet Best Practices and Protocols
	5. Cloud Computing	13. Special Project*
	6. Quiz 1: Internet Use in Home and Business	14. Unit 4 Test
	7. Internet Best Practices and Protocols	15. Course Project Part 4: Capstone Project*
	8. Project: Search Strategy and Intelligent Agent	16. Glossary and Credits

Unit 5: Mobile Application Programming and Productivity		
Intro. to Information to Technology	Assignments	
	1. Mobile Application Construction	8. Project: Compare/Contrast Report: Five Mobile Operating Platforms
	2. Project: Flowcharts for Free-to-Play and Pay-to-Play Versions of a Travel Game App	9. Tools of the Trade
	3. Mobile Application Programming	10. Outsourcing vs. In-House Development
	4. The Business of Mobile Application Development	11. Project: Design a Work-Around; Role-Playing Panel
	5. Project: Compare/Contrast Report: Contract Versus Salaried Mobile App Development Jobs	12. Quiz 2: Mobile Application Development
	6. Quiz 1: Mobile Application Construction and Programming	13. Special Project*
	7. Mobile Application Development Project Management	14. Unit 5 Test
		15. Course Project Part 5: Capstone Project*
		16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
IIT	Assignments	
	1. Course Project Part 6: Capstone Project*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Fundamentals of Computer Systems

The Computer Fundamentals course will provide students with an understanding of computers and how they operate as well as a basic understanding of how to manage and maintain computers and computer systems. These skills will provide students with the ability to configure computers and solve computer problems.

Students will learn details about the different elements of computers and computer systems. They will learn to identify hardware devices and their functions. They will be instructed on the role of operating systems as well as how to install and customize the Windows operating system. Students will learn about networking and the Internet. They will also be introduced to security issues in order to protect themselves and their computers and data.

Students will also learn about some of the software applications typically used on computers today, such as Microsoft Office. In addition, students will learn specifics about maintaining and troubleshooting computers, including managing files, backing up systems, and using the administrative tools in the Windows operating system. Lastly, the students will learn the basics of customer service and working as a help desk support technician.

Objectives

- After completing this course the student will understand computers and their functions, as well as develop basic customer service skills, and be able to effectively meet customer needs.
- Students will be able to implement problem-solving techniques to understand the nature of computer problems. They will also understand hardware components, software, and the Internet, so they are able to develop, maintain, and update computer systems.
- After this course, students also will be able to use the Internet to update computer systems and complete other IT service-related tasks. They will be able to install, configure, or modify software and operating systems to ensure optimal system function.
- Students will be able to perform computer backup procedures to protect information. They also will be able to recognize potential security threats and understand the procedures for maintaining security.
- After this course students will be able to provide IT support and training for computers and networks.

For topics in this course, it is helpful for students to be familiar with the basics of using desktop or laptop computers as well as accessing Web sites over the Internet.

If students are not familiar with these topics, it is recommended, though not required, that they familiarize themselves with the operating system and Web browser they will be using for this course. This includes turning on a computer and logging into an account, if necessary, exploring the different types of software available, navigating through some of the operating system menus to understand the available tools, and doing a basic search on the Internet.

Fundamentals of Computer Systems	Unit 1: Computer Hardware and Operating Systems	
	Assignments	
	1. Course Overview	10. The Boot Sequence–Command Prompt and BIOS
	2. The Motherboard and the CPU	11. Installation, Upgrades, and Maintenance of Operating Systems
	3. Storage Systems and Memory	12. Project: Installing an Operating System
	4. Project: Semiconductor Chips	13. Quiz 2: The Operating System
	5. Graphic Devices and Peripherals	14. Special Project*
	6. Project: Building a Computer	15. Unit 1 Test
	7. Quiz 1: Computer Hardware	16. Course Project Part 1: Operating System*
	8. Operating Systems Basics	17. Glossary and Credits
	9. Project: Testing Operating Systems	
Fundamentals of Computer Systems	Unit 2: Configuring the Computer	
	Assignments	
	1. Windows Desktop, Start Menu, and Task Bar, Including Windows Task Manager	9. Project: Setting Up an Internal Network
	2. The Control Panel	10. Troubleshooting Internet Connectivity
	3. Project: Help Desk Solutions	11. Project: Creating a Strategy Using Available Resources
	4. Windows Accessories and Built-in Applications	12. Quiz 2: Networking
	5. Project: Scavenger Hunt	13. Special Project*
	6. Quiz 1: Windows 101	14. Unit 2 Test
	7. Basic Networking Concepts	15. Course Project Part 2: Networking*
	8. Connecting to a Network or Domain	16. Glossary and Credits
Fundamentals of Computer Systems	Unit 3: Computer Programs	
	Assignments	
	1. Internet Uses and Abilities	9. Microsoft Excel
	2. Project: Researching the History of the Internet	10. Project: Developing a Spreadsheet
	3. Comparing Internet Browsers	11. Microsoft PowerPoint/Outlook
	4. Configuring Internet Options	12. Quiz 2: Microsoft Office
	5. Project: Determining Browser Controls	13. Special Project*
	6. Quiz 1: The Internet	14. Unit 3 Test
	7. Microsoft Word	15. Course Project Part 3: Microsoft Office*
	8. Project: Support Tech	16. Glossary and Credits
Fundamentals of Computer Systems	Unit 4: Protecting Yourself, the Computer, and Your Data	
	Assignments	
	1. Staying Safe on the Web	9. Project: Creating a Data Security Plan
	2. Project: Be Secure	10. Using the Cloud
	3. Security Threats to Your Computer	11. Project: Using Cloud Computing Services
	4. Security Threat Removal Tools	12. Quiz 2: Data Protection
	5. Project: Putting Your Computer Skills to the Test	13. Special Project*
	6. Quiz 1: Virus Protection	14. Unit 4 Test
	7. Managing Your File System	15. Course Project Part 4: Security*
	8. Backing Up Your Computer	16. Glossary and Credits

Unit 5: Troubleshooting	
Fundamentals of Computer Systems	Assignments
	1. The Computer Management Console
	2. Built-in Tools from Windows – Troubleshooting, Help and Support, Remote Assistance
	3. Project: Troubleshooting Computers
	4. Using the Internet as a Resource
	5. Project: Researching Computer Issues and Solutions
	6. Quiz 1: Troubleshooting Tools and Resources
	7. Preventive Maintenance
	8. Project: Preventive Maintenance
	9. Computers and the Environment
	10. Supporting the Computer User
	11. Project: Providing Good Customer Service
	12. Quiz 2: The Role of the Help Desk
	13. Special Project*
	14. Unit 5 Test
	15. Course Project Part 5: Preventive Maintenance*
	16. Glossary and Credits
Unit 6: Course Review and Exam	
FCS	Assignments
	1. Course Project Part 6: Help Desk Policies and Procedures*
	2. Review
	3. Exam

(*) Indicates alternative assignment

Fundamentals of Digital Media

This course gives an overview of the different types of digital media and how they are used in the world today. Students examine the impact that digital media has on culture and lifestyle. The course reviews the basic concepts for creating effective digital media and introduces a number of different career paths that relate to digital media.

Students will examine some tools used to create digital media and discuss best practices in the creating of digital media. This includes an overview of the process used to create new media pieces as well as the basics concepts of project management.

In the course, students will examine the use of social media, digital media in advertising, digital media on the World Wide Web, digital media in business, gaming and simulations, e-commerce, and digital music and movies. Students will review ethics and laws that impact digital media use or creation.

Objectives

- Discuss different types of digital media.
- Explain the value of using online video and audio for business.
- Discuss careers in digital media.
- Compare and contrast digital media and traditional forms of media.
- Discuss living in a digital society and the changes resulting from it.
- Discuss project management as a career.
- Describe the evolution of social media.
- Discuss ethics and social media.
- Identify some challenges that the gaming industry will face in the future.
- Compare the different types of computer languages.
- Determine the role digital media plays in globalization.
- Explain the limitations of doing business on the web.
- Describe some different laws that relate to digital media.
- Explain the canons of journalism.
- Describe some expected changes in social media and advertising.
- Determine what type of schooling is necessary for their chosen career.

Student should have a basic understanding of computers and the Internet.

Unit 1: Introduction to Digital and Online Media Types			
Fundamentals of Digital Media	Assignments		
	1. Course Overview	10. Project: Digital Media and Business	
	2. Digital Camera Basics	11. Best Practices for Digital Media	
	3. Digital Cameras vs. Mobile Cameras	12. Project: Analyze and Evaluate: Digital Media	
	4. Project: What Do People Really Know About Digital Media?	13. Quiz 2: Digital Media in Our World	
	5. The Rise of Digital Libraries	14. Special Project*	
	6. Project: Jobs in Digital Media	15. Unit 1 Test	
	7. Quiz 1: Digital Media	16. Course Project Part 1: Digital Media Cuts Paper Use*	
	8. Digital Media in Business and Society	17. Glossary and Credits	
	9. Storing and Sharing Online Media		

Unit 2: Digital Media: Effectiveness and Production		
Fundamentals of Digital Media	Assignments	
	1. Traditional Media vs. Digital Media	9. Project: Analyze and Evaluate: Web Sites
	2. The Rise of a Digital Society	10. Media Production: Audio and Video
	3. Project: Research and Write: Is the Internet a Bad Influence on Young People?	11. Project: Working in the Field
	4. Digital Citizenship	12. Quiz 2: Digital Media Production
	5. Project: A Digital Life	13. Special Project*
	6. Quiz 1: Effectiveness of Digital Media	14. Unit 2 Test
	7. Digital Media Production	15. Course Project Part 2: E-waste*
	8. Tools for Media Production: Web and Interactive Digital Media	16. Glossary and Credits
Unit 3: Project Management and Social Media		
Fundamentals of Digital Media	Assignments	
	1. Project Management: Project Planning	10. Staying Safe When Using Social Media Sites
	2. Project: Pet Grooming Web Site	11. Project: Current Event: Cyber Bullying
	3. Project Management: Project Monitoring	12. Quiz 2: Social Media
	4. Project: Problem Solving	13. Special Project*
	5. Project Management: Project Termination	14. Unit 3 Test
	6. Quiz 1: Project Management	15. Course Project Part 3: Social Media and Environmental Activism*
	7. Social Media Defined	16. Glossary and Credits
	8. Uses of Social Media	
	9. Project: Research and Learn: Social Media and Problem Solving	
Unit 4: Gaming, Simulations, Web Sites, and Apps		
Fundamentals of Digital Media	Assignments	
	1. Video Games and the Video Game Industry	9. Web Pages: Beyond the Basics
	2. Project: The Game Designer's Presentation	10. Web Pages and E-commerce
	3. Simulations and Modeling	11. Project: Designing an E-commerce Site
	4. Creating Video Games and Simulations	12. Quiz 2: Web Sites and Apps
	5. Project: New Games 101	13. Special Project*
	6. Quiz 1: Gaming and Simulations	14. Unit 4 Test
	7. Creating Web Sites	15. Course Project Part 4: Environmental Gaming*
	8. Project: Research and Learn: Practice your HTML Development Skills	16. Glossary and Credits

Unit 5: Trends in Digital and Online Media		
Fundamentals of Digital Media	Assignments	
	1. Best Practices of Digital Advertisement and Promotion	9. Project: In the Future, What Will Digital Media Look Like for You?
	2. Project: Going Global	10. Finding a Career that is Right for You
	3. Digital Media in Advertising	11. Project: Find Your Dream Job and Figure Out How to Land It
	4. Law and Digital Media	12. Quiz 2: The Future of Digital Media
	5. Project: Research and Learn: Law and Digital Media	13. Special Project*
	6. Quiz 1: Digital Business	14. Unit 5 Test
	7. Digital Audio and Video	15. Course Project Part 5: Powering a Digital World*
	8. The Future of Digital Media	16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
FDM	Assignments	
	1. Course Project Part 6: Digital media and Sustainability*	2. Review
		3. Exam

(*) Indicates alternative assignment

Fundamentals of Programming and Software Development

This course will provide students with an understanding of basic software development concepts and practices, issues affecting the software industry, careers within the software industry, and the skills necessary to perform well in these occupations.

Students will learn details about core concepts in programming using Java, including writing and debugging code, proper syntax, flow of control, order of operations, comparison operators, and program logic tools and models. They will learn the function of key program techniques including if statements, looping, and arrays. They will also learn about web development using HTML and drag-and-drop development of user interfaces in an Integrated Development environment.

Students will also learn about the Software Development Life Cycle and the different variations used to create software. They will learn about different programming languages and paradigms. They will learn about the importance of usability and user-centered design processes. Students will also learn about careers in the software industry, the education and skills required to work in the industry, and related career resources. Finally, the capstone project will allow students to explore and state opinions on key issues and trends impacting the software industry, and to learn about the experience of working in the industry.

Objectives

- Understand the relationship between computer hardware and software.
- Describe the purpose and high-level organization of the central processing unit.
- Understand categories of software and be able to properly assign software products into the correct category.
- Describe the key functions of systems software.
- Describe the functionality of popular software applications (e.g., word processing, database management, spreadsheet development).
- Understand the function and operation of compilers and interpreters.

For topics in this course, it is helpful for students to be familiar with the basics of using desktop and laptop computers as well as accessing websites over the Internet.

If students are unfamiliar with these topics, it is recommended, though not required, that they familiarize themselves with creating and saving files in a text editing or word processing application and with using web browsers and conducting searches on the Internet.

Additionally, activities in this course require that the Java Software Development Kit (SDK) and the NetBeans Integrated Development Environment (IDE) is installed on students' computers. Instructions are included in the Unit 1 lesson titled "Introduction to Java Programming."

Fundamentals of Programming and Software Development	Unit 1: Introduction to Computers	
	Assignments	
	1. Course Overview	10. Project: Writing Your First Java Program
	2. Computer History	11. Java Syntax Overview
	3. Project: Computer Generations	12. Project: Hello World! Documentation
	4. Introduction to Computer Hardware	13. Quiz 2: How Computers and Programs Think
	5. Project: Understanding Hardware	14. Special Project*
	6. Introduction to Computer Software	15. Unit 1 Test
	7. Quiz 1: Perspective and Foundations	16. Course Project Part 1: The Impact of GUI Computing*
	8. Design and Function of the Central Processing Unit	17. Glossary and Credits
	9. Introduction to Java Programming	
Fundamentals of Programming and Software Development	Unit 2: Programming Languages	
	Assignments	
	1. Introduction to Java Variables	9. Switch and Case
	2. Project: Using Variables in Java	10. Project: Using Switch-Case and Nested If Statements
	3. Java Math Operations	11. User-Defined Methods
	4. Project: Using Mathematical and Comparison Operators in Java	12. Quiz 2: Branching and Methods
	5. Operators and Escape Sequences	13. Special Project*
	6. Quiz 1: Processing Data	14. Unit 2 Test
	7. New Data Types and the If Statement	15. Course Project Part 2: Ethics in Programming*
	8. Project: Using If and If-Else Statements and Reading User Input	16. Glossary and Credits
Fundamentals of Programming and Software Development	Unit 3: Introduction to Programming	
	Assignments	
	1. Introduction to the for Loop	10. Parallel and Multidimensional Arrays
	2. Project: Grading on a Loop	11. Project: The Logic of Multidimensional Arrays
	3. Loops–Practice with the Do-While Loop	12. Quiz 2: Managing Complex Data
	4. Loops–Practice with the While Loop	13. Special Project*
	5. Project: Using Loops in a Guessing Game	14. Unit 3 Test
	6. Quiz 1: Loops–Power and Simplicity	15. Course Project Part 3: The Life of a Software or Web Developer*
	7. Arrays–Syntax and Use	16. Glossary and Credits
	8. Arrays–Passing by Reference	
	9. Project: Professional Associations Research	
Fundamentals of Programming and Software Development	Unit 4: Control Blocks	
	Assignments	
	1. Classes and Objects	9. HTML Images, Links, and Web Development Tools
	2. Project: The Importance of Usability	10. Project: Your Favorite Recipe – On a Web Page
	3. Constructors and Packages	11. Event-Driven Programming and Visual Basic
	4. Project: Creating Packages	12. Quiz 2: Interactive and Graphical Programming
	5. Flowcharts Mapping	13. Special Project*
	6. Quiz 1: Program Components and Logic	14. Unit 4 Test
	7. HTML Basics	15. Course Project Part 4: Open-Source Programming*
	8. Project: A Web Page Essay About the Web	16. Glossary and Credits

Unit 5: GUI Programming and Web Applications	
Fundamentals of Programming and Software Development	Assignments
	1. Software Development Life Cycle
	2. Project: Planning a Software Development Project
	3. Programming Languages
	4. User-Centered Software Design
	5. Project: User-Testing a Product Prototype
	6. Quiz 1: Creating Software Products
	7. Skills and Interests for Software Careers
	8. Project: Taking Stock
	9. Software Industry Careers
	10. Project: Planning Your Computer Science Degree Program
	11. New Trends and Technologies
	12. Quiz 2: Preparing for a Career in Software Development
	13. Special Project*
	14. Unit 5 Test
	15. Course Project Part 5: Impacts of Future Technologies*
	16. Glossary and Credits

Unit 6: Course Project, Review, and Exam	
FPSD	Assignments
	1. Course Project Part 6: Issues and Experiences in the World of Software Development*
	2. Review
	3. Exam

(*) Indicates alternative assignment

Introduction to Information Technology Support and Services

This course focuses on real-world application including common industry best practices and specific vendors that offer tools for technicians, project managers, and IT leadership. Emphasis should be made that the purpose of the IT department of an enterprise is to support the overall mission of the company, and it is not simply a standalone component of the company's infrastructure. Students will continue to apply their knowledge of hardware and software components associated with IT systems while exploring a variety of careers related to IT support and services. Students will analyze technical support needs to perform customer service, perform configuration management activities, and evaluate application software packages and emerging software. Students will demonstrate and apply knowledge of IT analysis and design by initiating a system project and evaluating applications within the IT system. Information Technology is a dynamic discipline that is continuously evolving.

Objectives

- Explore systems design and implementation.
- Investigate the implementation and maintenance of IT infrastructure.
- Review the basics of management collaboration and reporting.
- Discuss education and careers in IT and how to pursue such a career.

This is an introductory course in support and services providing information technology services and management. There are no requirements other than a basic familiarity with personal computers and the Internet. Students should be able to access the web and to use it to retrieve information and create accounts on free services.

Unit 1: System Design and Implementation	
Intro. to Information Technology Support and Services	Assignments
	1. Course Overview
	2. Supporting the Business Workflow Model
	3. Project: Understanding Software Development Models
	4. Operating Systems, Hardware, and Software Selection
	5. Project: Building a Mind Map
	6. Implementation and End-User Training
	7. Project: Preparing a Support Plan
	8. Quiz 1: On-Premise Systems
	9. Public Clouds
	10. Project: Moving to the Cloud
	11. Private Clouds
	12. Hybrid Clouds
	13. Project: Companies in the Hybrid Cloud
	14. Quiz 2: Cloud-Based Systems
	15. Special Project*
	16. Unit 1 Test
	17. Course Project Part 1: Creating an IT Service and Support Project from Scratch*
	18. Glossary and Credits

Unit 2: System Maintenance	
Intro. to Information Technology Support and Services	Assignments
	1. Anti-malware
	2. Patch Management
	3. Project: Patch Management Project
	4. Network Vulnerabilities
	5. Project: Hackers
	6. Quiz 1: Security
	7. Hardware and Software Redundancy-1
	8. Hardware and Software Redundancy-2
	9. Project: Disaster!
	10. Hardware and Software Redundancy-3
	11. Project: Selecting Storage Area Networking Products
	12. Quiz 2: Disaster Recovery
	13. Special Project*
	14. Unit 2 Test
	15. Course Project Part 2: Specifying Software*
	16. Glossary and Credits

Intro. to Information Technology Support and Services	Unit 3: End-User Support	
	Assignments	
	1. Types of Help Desk Systems and Support	10. Building a Knowledge Base
	2. Project: Training for a Service Desk	11. Project: Creating a Knowledge Management Site
	3. Resolution Methodologies for Help Desks	12. Quiz 2: Ticketing System / Knowledge Base
	4. Project: Branding and Customer Service	13. Special Project*
	5. Customer Service	14. Unit 3 Test
	6. Quiz 1: Helpdesk	15. Course Project 3: How, How Much, and When?*
	7. Ticketing Systems	16. Glossary and Credits
	8. Protocols and Procedures	
	9. Project: From Plato to Technical Support, a Paper on Problem Solving in History	
Intro. to Information Technology Support and Services	Unit 4: Management Collaboration and Reporting	
	Assignments	
	1. Working with the Management Team	10. Project Management Applications
	2. Project: Role-playing Senior Management Meeting	11. Project: Creating a Project in Open Project
	3. Departmental Reporting	12. Quiz 2: Leading Technology Projects
	4. Project: Role-playing with Departmental Reports	13. Special Project*
	5. Emerging Technologies	14. Unit 4 Test
	6. Quiz 1: Management Collaboration and Reporting	15. Course Project Part 4: Management Collaboration and Reporting*
	7. Creating and Managing an IT Project	16. Glossary and Credits
	8. Project: Create a Feasibility Study	
	9. Managing IT Projects	
Intro. to Information Technology Support and Services	Unit 5: Continuing Education and Career Opportunities	
	Assignments	
	1. Pursuing Technical Education	9. Off-Premise (Outsource) IT Support
	2. Technical Education Degree Programs	10. Consultant/Educator
	3. Project: Take a Free Course in Computing	11. Project: Imagining a Consulting Practice
	4. On-the-Job Training	12. Quiz 2: Emerging Trends
	5. Project: Developing a Personal Syllabus	13. Special Project*
	6. Quiz 1: Continuing Education	14. Unit 5 Test
	7. On-Premise (Insource) IT Support	15. Course Project Part 5: Presenting your plan*
	8. Project: Understanding Job Requirements and Certifications	16. Glossary and Credits
IITSS	Unit 6: Course Review, and Exam	
	Assignments	
	1. Course Project Part 6: Describing What You Learned*	2. Review
		3. Exam

(*) Indicates alternative assignment

Introduction to Network Systems

How can we automate the transfer of information from one computer to another? To answer that question, this course introduces students to the fundamental technology and concepts that make networking systems possible. The question itself is a very practical one and the concepts taught are more concerned with practices and processes rather than theoretical generalities.

The most important concept introduced is that of the OSI reference model and its bottom four layers, which are most directly concerned with networking instead of computing. Each networking layer is explored in a three-lesson chapter. By the end of the course, every student should be comfortable reading a sentence that says something like, "X is a protocol working at the third layer."

The course also explores a good deal of technology, specifically the software and hardware supporting LANs, WANs, and Wi-Fi networks. Particularly important are the protocols in the TCP/IP stack that are used to communicate across a network, but the students are also introduced to the hardware, including hubs, switches, bridges, routers, and transmission media. The student is expected to learn that a network is not some mysterious idea out there in cyberspace. It is a mechanism that is fully dependent on its parts working properly.

Once the students understand the fundamentals of the layers and network hardware, they can be introduced to questions of security, network management, and network operating systems. In particular, they should understand the role of the server. They have already encountered many examples of client-server relationships, and the material later in the course should introduce them to the many roles that a server can play as a part of a network.

Objectives

- State the purpose of a computer network, and explain the role of network hardware in achieving that purpose;
- List at least four protocols from the TCP/IP stack and explain how each contributes to data transmission;
- Explain the technical differences between a LAN and a WAN;
- Explain the importance of technical standards in networks;
- List all seven layers of the OSI reference model and explain what each of the bottom four layers contributes to a network;
- Compare and contrast the Windows Server and Linux operating systems.

Students who are unfamiliar with computers and/or the Internet are likely to be at a disadvantage in this course. There are, however, no theoretical concepts required or expected for students entering the course.

Unit 1: Networking Fundamentals	
Intro. to Network Systems	Assignments
	1. Course Overview
	2. Networking Concepts
	3. Project: Report: Technology Devices
	4. Network Devices and Components
	5. Network Topologies
	6. Project: Hardware Awareness
	7. Quiz 1: Computer Networks
	8. The OSI Reference Model
	9. The TCP/IP Networking Model
	10. Project: Slide Show: Networking Layers
	11. Data Encapsulation
	12. Project: Slide Show: Data Encapsulation
	13. Quiz 2: OSI and TCP/IP Networking Models
	14. Special Project*
	15. Test
	16. Course Project Part 1: Uses of a Small Business Network*
	17. Glossary and Credits

Unit 2: Network Access Concepts		
Intro. to Network Systems	Assignments	
	1. Physical Layer: Transmission Media, Properties, and Components	8. Components of the Data-link Layer
	2. Project: The Physical Layer	9. Project: FAQ: A Data-Link Sublayer
	3. Fundamentals of Electrical Circuits: Signaling and Circuit Configuration	10. Data-link Layer Devices
	4. Network Security at the Physical Layer	11. Project: Video: Data-Link Hardware
	5. Project: Under Attack	12. Quiz 2: Data Link Layer Networking Concepts
	6. Quiz 1: Physical Layer Networking Concepts	13. Special Project*
	7. The Data-Link Layer	14. Test
		15. Course Project Part 2: Physical Standards*
		16. Glossary and Credits

Unit 3: Local Area Networks		
Intro. to Network Systems	Assignments	
	1. LAN Fundamentals	10. Transport Layer Protocols
	2. Project: Proposal: Classroom LAN	11. Project: Slide Show: Sending/Receiving a Communication
	3. Ethernet LANs	12. Quiz 2: Network, Transport, and Application Layers
	4. Wireless LANs	13. Special Project*
	5. Project: Video: Value of Hotspots	14. Test
	6. Quiz 1: LAN Components and Technologies	15. Course Project Part 3: Internet Connection*
	7. Network Addressing	16. Glossary and Credits
	8. Project: Table: IP Addresses	
	9. Network Routing and Protocols	

Unit 4: Wide Area Networks and Securing the Network		
Intro. to Network Systems	Assignments	
	1. WAN Fundamentals	9. Network Threats and Mitigation
	2. Project: FAQ: WAN Connections	10. Project: Policy: Password Policy
	3. WAN Technologies and Protocols	11. Physical and Hardware Security
	4. WAN Transmission Media	12. Quiz 2: Network Security
	5. Project: Slideshow: Fiber Optics	13. Special Project*
	6. Quiz 1: Wide Area Networks	14. Test
	7. Authentication and Access Controls	15. Course Project Part 4: Security*
	8. Project: FAQ: Public Key Infrastructure (PKI)	16. Glossary and Credits

Unit 5: Managing the Network		
Intro. to Network Systems	Assignments	
	1. Managing and Monitoring the Network	10. The Linux Operating System
	2. Project: Slide Show: Management	11. Project: Report: Network Wish List
	3. Network Troubleshooting	12. Quiz 2: Network Operating Systems
	4. Project: FAQ: Utilities	13. Special Project*
	5. Software and Hardware Troubleshooting Tools	14. Test
	6. Quiz 1: Network Management and Troubleshooting	15. Course Project Part 5: Servers and Operating System*
	7. The Server in a Network	16. Glossary and Credits
	8. Project: Diagram: Web Email Service	
	9. Networking with Windows	

INS	Unit 6: Course Review, and Exam	
	Assignments	
	1. Course Project Part 6: Slide show: Introducing Your Network*	2. Review
		3. Exam

(*) Indicates alternative assignment

Network System Design

The Network System Design course will provide students with an understanding of computer networks and how they operate, as well as a basic understanding of how to manage and maintain computer networks. These skills will provide students with the ability to design, configure, and troubleshoot networks of all sizes.

Students will learn the basics of network design, including how to identify network requirements and determine the proper network architecture. They will be instructed on the requirements of network models, as well as be introduced to local area networks. Students will also learn about Internet Protocol and the basics of routing data on a network.

Students will be introduced to wide area networks and network security issues. In addition, students will learn about network management, including monitoring and troubleshooting. Last, students will learn about network operating systems and their role in connecting computers and facilitating communications.

Objectives

- Understand computer networks and their functions, as well as know how to analyze business and technical goals of a network to effectively meet customer needs.
- Identify requirements to successfully support network users, applications, and devices. They will also understand network architecture and topology, protocols, and services of local and wide area networks.
- Identify principles and operation of equipment like wire and circuits, as well as of standards such as open system interconnection, TCP/IP, and high-speed networking.
- Demonstrate knowledge of security requirements and data protection on a network, as well as the role of security tools such as routers, firewalls, and virtual private networks.
- Understand network operating systems and be able to support computer networks.

For topics in this course, it is helpful for students to be familiar with the basics of computer hardware (desktop and laptop), as well as desktop operating systems.

If students are not familiar with these topics, it is recommended, though not required, that they be introduced to computer hardware and desktop or workstation operating systems before starting this course. That includes examining hardware devices such as motherboards, hard drives, and processing chips and exploring the features and functions of a workstation operating system.

Unit 1: Introduction to Network Design			
Network System Design	Assignments		
	1. Course Overview	10. Logical Network Design – Addressing and Routing Protocols	
	2. Customer Needs and Goals	11. Project: Exploring Higher Math	
	3. Project: Designing a Business Network	12. Network Architectural Models – Topologies and Classifications	
	4. Network Design: Network Infrastructure	13. Quiz 2: Network Architecture	
	5. Network Design: Physical and Functional Network Requirements	14. Special Project*	
	6. Project: Office Planning	15. Unit 1 Test	
	7. Quiz 1: Network Requirements	16. Course Project Part 1: Physical and Functional Requirements of a Network*	
	8. Network Architecture Components – Physical and Functional	17. Glossary and Credits	
	9. Project: Connecting Physical to Function		

Unit 2: Networking Models and Local Area Networks		
Network System Design	Assignments	
	1. The Network Reference Models	9. Project: State Your Case, Argue For Each
	2. Project: Port Sniffing	10. Wireless LANs and Security
	3. The OSI Networking Model	11. Project: Playing With Wireless
	4. The TCP/IP Networking Model	12. Quiz 2: Local Area Networks – Topologies, Transmission Media and Technologies
	5. Project: Researching TCP/IP	13. Special Project*
	6. Quiz 1: TCP/IP and OSI Networking – The Fundamentals	14. Unit 2 Test
	7. LAN Fundamentals: Media, Topologies and Protocols	15. Course Project Part 2: Local Area Network*
	8. LAN Technologies: Ethernet	16. Glossary and Credits

Unit 3: Internet Protocol (IP): Addressing and Routing		
Network System Design	Assignments	
	1. Addressing Fundamentals	8. IP Routing Protocols: Distance Vector Routing
	2. IP Address: Classful Addressing	9. Project: Routing Tables
	3. Project: IP Address Ranges and Subnetting	10. IP Routing Protocols: Link State Routing
	4. Subnetting, Supernetting and Classless Addressing	11. Project: Router Security
	5. Project: Researching Classless Inter-Domain Routing	12. Quiz 2: IP Routing
	6. Quiz 1: IP Addressing	13. Special Project*
	7. Routing Basics	14. Unit 3 Test
		15. Course Project Part 3: Internet Protocol*
		16. Glossary and Credits

Unit 4: Wide Area Networks and Network Security		
Network System Design	Assignments	
	1. WAN Concepts	9. Network Security Threats
	2. WAN Technologies	10. Network Security Techniques
	3. Project: Connecting to the Internet Backbone	11. Project: Analyzing Network Security
	4. WAN Configuration	12. Quiz 2: Network Security
	5. Project: What Do All These Boxes Look Like?	13. Special Project*
	6. Quiz 1: Wide Area Networks	14. Unit 4 Test
	7. Understanding Network Security	15. Course Project Part 4: Network Security*
	8. Project: Creating a Network Security Policy	16. Glossary and Credits

Unit 5: Network Management and Network Operating Systems		
Network System Design	Assignments	
	1. Network Management Design	9. The Windows Server
	2. Project: Designing a Network Management Plan	10. The Linux Operating System
	3. Network Management Architecture	11. Project: Installing and Using Linux OS
	4. Network Management Tools and Protocols	12. Quiz 2: Network Operating Systems
	5. Project: Using Network Troubleshooting Tools	13. Special Project*
	6. Quiz 1: Network Management Strategies and Design	14. Unit 5 Test
	7. Network Operating Systems	15. Course Project Part 5: Network Management Protocols*
	8. Project: Researching Network Operating Systems	16. Glossary and Credits

Unit 6: Course Review, And Exam		
NSD	Assignments	
	1. Course Project Part 6: Network Administration*	3. Exam
	2. Review	

(*) Indicates alternative assignment

New Applications: Web Development in the 21st Century

New Applications introduces students to the rapidly evolving world of apps, or applications. The introduction of the Apple II in 1977 followed by the IBM PC and scores of compatible computers just four years later created strong consumer demand for software programs, as these applications were referred to at the time. Capable of formatting spreadsheets, composing and proofing hundreds of lines of text, or supporting classroom instruction, computer programs were initially sold by specialty stores, college bookstores, or through the mail.

The explosive growth of the Internet that followed at the beginning of the twenty-first century with the introduction of high-speed networking, the dynamic World Wide Web, and most recently the development of affordable smartphones and web tablets have all contributed to global, cultural, and societal change.

This course begins with a historical tour of the Internet and World Wide Web as well as the programs and applications that made it possible for computer users on every continent to begin to explore and better understand their world. Then, through a step-by-step introduction to WordPress, students gain the tools and insight necessary to create their own web pages and discover their online voice.

In addition to learning how to use WordPress and other applications that promote students' presence on the World Wide Web, this course discusses how the web has become the foremost channel for the distribution of applications that increase the functionality of the web and support a global hub of social networking and communication. Students are introduced to the evolution of networking and data-transfer capabilities beginning with early HTTP protocols continuing through to the recent introduction of smartphones capable of connecting to sites on the World Wide Web without having to rely on a browser for navigation.

The course concludes with a survey of the continuing explosion of new apps, or applications, designed to operate on one or more of the proprietary mobile devices (smartphones, tablets, and netbooks). Students are given an opportunity to track fundamental changes in this growing industry as development has moved from the original model of a single experienced programmer developing a single app for distribution at little or no cost to a model in which retailers, non-profit organizations, government agencies, and Fortune 500 companies contract with mid-sized marketing and communications firms to develop sophisticated apps designed to raise global market and public awareness of institutions and issues. Additionally, students have an opportunity to understand that career opportunities in app development have evolved from programming and coding to now include marketing, public relations, creative arts, project and product management and sales, with a growing number of careers in the industry requiring little if any actual programming experience.

New Applications is a survey course that travels from the first software programs developed to facilitate communication on the Internet to the new generation of mobile and native apps that access the Internet without a reliance on a web browser. New Applications is also a practical course in how to develop a presence on the World Wide Web using WordPress and other available web-application tools. The goal of the course is to provide the learner insight into the rapidly evolving universe of programming and application development so that he or she can make informed career decisions in an industry that is changing as quickly as it is growing.

Objectives

- Describe major advances in network and communications technology beginning with the early Internet and continuing through the introduction of web-enabled smartphones and other devices.
- Create a web presence using simple applications.
- Evaluate and select from a variety of web development tools and apps those most appropriate for their interests and needs.
- Design a current generation app for use on a smartphone or tablet.

- Evaluate the education and training qualities and experiences essential to secure a position with growth potential in the app industry

This is an introductory course in the history and development of new applications for use on web-enabled devices including personal computers, tablets, smartphones, and ultrabooks. While there are no specific prerequisites for this course, students should have a basic understanding of the Internet, the World Wide Web, browsers, file formats, hardware, and software applications. Students who have working knowledge of IP addressing, programming, the differences among local, wide-area, and cloud-computing networks as well as the current state of mobile devices will be well prepared to complete this course.

Unit 1: The World Wide Web: History and Definitions		
New Applications	Assignments	
	1. Course Overview	10. The Editor's Two Flavors: HTML (Part Two)
	2. History of the Web in a Nutshell	11. Project: On Assignment as a Web Developer
	3. Project: The Interconnected Internet	12. The Wave of the Present – WordPress
	4. File Sizes and Resolution	13. Quiz 2: Hosted and Non-Hosted Applications
	5. Project: Consulting	14. Special Project*
	6. What Does This Do? Hosted vs. Local Computing	15. Unit 1 Test
	7. Quiz 1: Defining the Web	16. Course Project Part 1: The Home Page*
	8. Manual Transmission: HTML (Part One)	17. Glossary and Credits
	9. Project: Developing HTML	

Unit 2: Web Site Design on Content Managed Platforms		
New Applications	Assignments	
	1. WordPress Roles	10. Third Party Add-ons
	2. Project: Developing a WordPress Account	11. Project: A Comparative Study of Apps, Plugins, and Extension
	3. WordPress Themes	12. Quiz 2: Website Elements
	4. Project: Marketing to a Potential Client	13. Special Project*
	5. Topography	14. Unit 2 Test
	6. Quiz 1: WordPress Components	15. Course Project Part 2: Planning the Site*
	7. Detailed Editors	16. Glossary and Credits
	8. Widgets	
	9. Project: Bringing It All Together	

Unit 3: Managing Site Creation		
New Applications	Assignments	
	1. Assigning Roles	9. Approvals, Change Orders, and Last-Minute Edits
	2. Project: Photos, Videos, and Sound Files in WordPress	10. Self-Evaluation and Your Projects
	3. Designing the Publication	11. Project: Baseline, Benchmark, Objective, and Goal
	4. Project: Creating Posts	12. Quiz 2: Working Together
	5. Developing the Content	13. Special Project*
	6. Quiz 1: Bringing It All Together	14. Unit 3 Test
	7. Publishing Deadlines	15. Course Project Part 3: Under Construction*
	8. Project: Creating a Statement of Work	16. Glossary and Credits

Unit 4: Internet Distributed Applications		
New Applications	Assignments	
	1. What Are Internet Distributed Applications?	9. Project: RSS Feed Comparisons
	2. Project: What Is Cloud Computing?	10. Report on the Present
	3. Distribution of Internet Applications	11. Project: Find Your Own Trends
	4. Project: Are You Online or Offline?	12. Evaluating Products and Services
	5. The Internet Is a Revolutionary Path to Application Development	13. Quiz 2: Emerging Trends
	6. Project: New Technology: Autos vs. Internet	14. Special Project*
	7. Quiz 1: Introduction to Internet Distributed Applications	15. Unit 4 Test
	8. Strategies for Keeping Well-informed about New Trends and Developments	16. Course Project Part 4: Reviewing Web Applications*
		17. Glossary and Credits

Unit 5: New Apps: Creativity and Careers		
New Applications	Assignments	
	1. The Mobile Apps Industry	10. Technology Advances, Careers Redefined
	2. Project: Apps Review	11. Project: Next Year's App Solution
	3. Building Apps	12. Quiz 2: Career Choices: Solo or Solid
	4. Health Considerations in Developing Apps	13. Special Project*
	5. Project: The Ergonomic App Development Office	14. Unit 5 Test
	6. Quiz 1: A New Industry	15. Course Project Part 5: The Mobile App Hall of Fame*
	7. Entrepreneurial App Development	16. Glossary and Credits
	8. Project: Researching Network Operating Systems	
	9. Expanding Career Opportunities in a New Industry	

Unit 6: Course Review, and Exam		
NA	Assignments	
	1. Course Project Part 6: The Future of Apps Blog*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Software Development Tools

This course introduces students to the variety of careers related to programming and software development. Students will gather and analyze customer software needs and requirements, learn core principles of programming, develop software specifications, and use appropriate reference tools to evaluate new and emerging software. Students will produce IT-based strategies and a project plan to solve specific problems, and define and analyze system and software requirements.

Objectives

- Understand the development of the computer.
- Be able to describe the organization of the Central Processing Unit.
- Demonstrate knowledge of widely used software applications (e.g., word processing, database management, spreadsheet development).
- Identity three levels of programming languages.
- Identity execution differences between interpreted, translated, and compiled languages.
- Describe how computers address data in memory.
- Design structures, classes, and objects that include variables and methods.
- Summarize how data is organized in software development.
- Understand the standard primitive types and operations of the java programming language.
- Define and initialize Java arrays.
- Demonstrate knowledge of the basics of structured, object-oriented language.
- Write software applications using while, do while, for, for-each loops.
- Define logic statements using if, else if, else and switch statements.
- Develop an application using conditional statements.
- Demonstrate knowledge of key constructs and commands specific to a language.
- Develop an application that responds to user input.
- Develop a web application that responds to user input.

Unit 1: Introduction to Software Development Tools	
Software Development Tools	Assignments
	1. Course Overview
	2. Coding Standards and Conventions
	3. Software Processes and Methodology
	4. Project: Grades Projection IPO
	5. Software Types and Elements
	6. Project: Software Types and Elements
	7. Quiz 1: Computer History, Computer Hardware, Software, and Organization
	8. Multimedia and Graphics Software Applications
	9. Web-Based Software Applications
	10. Project: Multimedia and Web Design Careers
	11. Software Design Principles and Tools
	12. Project: Software Design Principles Table
	13. Quiz 2: Central Processing Unit Operations
	14. Special Project*
	15. Unit 1 Test
	16. Glossary and Credits

Unit 2: Software Development		
Software Development Tools	Assignments	
	1. Personal Information Management (PIM) Tools	9. Project: My Personal Website
	2. Project: My Mind-Mapping	10. Integrated Development Environments (IDEs)
	3. Computer Security Application Tools	11. Project: My Text Editor IDE Evaluation
	4. Individual Programming Development Tools	12. Quiz 2: Building Blocks of Programs
	5. Project: Assessment of Competitive Office Suites	13. Special Project*
	6. Quiz 1: Different Language Abstraction Layers	14. Unit 2 Test
	7. Database Software Development Tools	15. Glossary and Credits
	8. Web Design Software Development Tools	

Unit 3: Debugging		
Software Development Tools	Assignments	
	1. Download, Install, Explore IntelliJ IDEA	9. STDIN and STDOUT
	2. Download, Install, Explore NetBeans	10. File Input, Output, and Network Input, Output
	3. Project: MY IntelliJ NetBeans IDE Evaluation	11. Project: Concepts of File I/O and Network I/O
	4. Download, Install, Explore Eclipse	12. Quiz 2: Text Input, Output, and Exceptions
	5. Project: MY IntelliJ NetBeans Eclipse IDE Evaluation	13. Special Project*
	6. Quiz 1: Basic Java Applications	14. Unit 3 Test
	7. Exceptions	15. Glossary and Credits
	8. Project: Best Practices in Exception Handling in Java Programming	

Unit 4: Software Configuration Management		
Software Development Tools	Assignments	
	1. Code Blocks	9. Project: Write an IF...ELSE Program that Computes the New Salary for the CIO
	2. Project: Concepts of Programming Code Structure in Java	10. Switch Statements
	3. Iterative Loops	11. Project: Write a Program Using a SWITCH Statement
	4. For-Each Loops	12. Quiz 2: If, Then, and Switch Statements
	5. Project: Computing Class Grades	13. Special Project*
	6. Quiz 1: While, Do, While, For, Statements	14. Unit 4 Test
	7. Java Logic	15. Glossary and Credits
	8. If, Else If, Else	

Unit 5: Object Modeling UML and Software Testing		
Software Development Tools	Assignments	
	1. Swing and AWT	8. Project: Social Media on Campus
	2. Creating Frames and Dialog Boxes, Components, Form Fields, Panels, Buttons	9. Application Servers and JavaServer Pages (JSP)
	3. Project: Building Better Java using GUI Applications, Frames, Containers, and Dialogs	10. JavaServer Faces and Future Trends in Programming
	4. HTML and Web Pages	11. Project: Create a Simple Java Server Page
	5. Project: Creating a Web Page	12. Quiz 2: The Future of Programming
	6. Quiz 1: GUI Programming	13. Special Project*
	7. Business Information System Trends, Applications, and eCommerce	14. Unit 5 Test
		15. Glossary and Credits

Unit 6: Course Project, Review and Exam	
SDT	Assignments
	1. Course Project: The Design Team: Creating a Tablet GUI*
	2. Review 3. Exam

(*) Indicates alternative assignment

Manufacturing

Introduction to Careers in Manufacturing

The Introduction to Careers in Manufacturing course provides the fundamentals of manufacturing in the United States and explores the jobs and career opportunities that manufacturing offers.

Unit 1 provides an overall view of manufacturing in the United States, including how it evolved, how manufacturers are organized, and the impact of manufacturing on our society and economy.

Unit 2 examines the elements of process design, management, and improvement through quality assurance plans, production and quality control, and performance measurement systems.

Unit 3 focuses on jobs and careers in manufacturing, including the need for skilled workers, the outlook for manufacturing in the U.S., and the competencies that manufacturers value and develop in their workers.

Unit 4 focuses on key elements in manufacturing systems and types of manufacturing processes. It also covers research and development, product design, process design and management, and lean manufacturing.

Unit 5 addresses two areas of concern for manufacturers: compliance and safety. It introduces the regulatory and safety environments in which manufacturers work and the steps they take to comply with regulations, as well as the steps some manufacturers take to go beyond compliance to create a high-performing workplace.

Objectives

- Evaluate the impact of manufacturing, including the Industrial Revolution and Second Industrial Revolution, on the U.S. society and economy.
- Describe the value of manufacturing to and its impact on American society and economy.
- Analyze possible careers available in manufacturing and its subsectors and in manufacturing operations.
- Interpret the trends in manufacturing technologies and how they will change the industry and our lives.
- List the benefits of standards in manufacturing processes and products.
- Identify the goals of quality assurance, including process redesign, management, and improvement.
- Estimate the diversity of and potential for growth in manufacturing career opportunities, including the need for skilled workers.
- Describe the personal effectiveness, academic, and workplace competencies, and evaluate their value to manufacturers.
- Summarize the manufacturing research and development process and the types of jobs needed to perform it.
- Characterize the role of product design in manufacturing, and list the steps in a typical product design process.
- Describe how manufacturers design, manage, and improve their processes.
- Compare the types of production systems and processes.
- Define manufacturing process, and identify the types of jobs such processes offer.
- Describe the benefits, key principles, and elements of lean manufacturing.
- Examine the purpose of regulations for manufacturers.
- List the main compliance areas for manufacturing.
- Evaluate the impact of regulations on manufacturing, on public health and safety, and on environmental protection.
- Summarize the most common safety hazards in manufacturing.
- Describe the key components of an effective workplace safety program.

- Characterize the attributes of a high-performing workplace.

Unit 1: Scope and Economic Effect of Manufacturing in the USA and Beyond	
Intro. to Careers in Manufacturing	Assignments
	1. Course Overview
	2. The Evolution of Manufacturing
	3. How Manufacturers Are Organized
	4. Project: Learning About Your Interests
	5. The Impact of Manufacturing
	6. Project: Emerging Technologies
	7. Quiz 1: Manufacturing's Impact on the Economy
	8. Manufacturing Industries
	9. Project: Learning More about a Manufacturing Subsection
	10. Manufacturing Technologies
	11. Project: The Impact of a New Technology
	12. Manufacturing Operations
	13. Quiz 2: The Structure of Manufacturing
	14. Special Project*
	15. Test
	16. Course Project Part 1: Exploring a Career in Manufacturing*
	17. Glossary and Credits

Unit 2: Process Improvement in Manufacturing	
Intro. to Careers in Manufacturing	Assignments
	1. Quality Assurance
	2. Manufacturing Process Improvement
	3. Project: Use PDSA to Problem Solve
	4. Manufacturing Process Redesign
	5. Project: Redesign a Process
	6. Quiz 1: Process Management and Improvement
	7. Production Planning and Inventory Control
	8. Production Control and Quality Control
	9. Project: Interpret Variation in a Process
	10. Measuring Performance
	11. Project: Compare Balanced Scorecards
	12. Quiz 2: Production Quality, Planning, and Control
	13. Special Project*
	14. Test
	15. Course Project Part 2: Explore Jobs and Careers*
	16. Glossary and Credits

Unit 3: Careers in Manufacturing	
Intro. to Careers in Manufacturing	Assignments
	1. Careers in Manufacturing
	2. Project: Find Job Openings at a Manufacturer
	3. The Outlook for Manufacturing Jobs
	4. Education for Careers in Manufacturing
	5. Project: Evaluate Your Readiness for Manufacturing Jobs
	6. Quiz 1: Jobs and Careers in Manufacturing
	7. Personal Effectiveness Competencies for Manufacturing
	8. Academic Competencies for Manufacturing
	9. Project: Improve Your Academic Competencies
	10. Workplace Competencies for Manufacturing
	11. Project: Explain a Business Fundamental
	12. Quiz 2: Competencies for Manufacturing
	13. Special Project*
	14. Test
	15. Course Project Part 3: Prepare a Learning Plan*
	16. Glossary and Credits

Unit 4: Advanced Manufacturing Processes	
Intro. to Careers in Manufacturing	Assignments
	1. Manufacturing Research and Development
	2. Project: Research and Development: Is It for You?
	3. Product Design
	4. Process Design and Management
	5. Project: Developing an Understanding of Continuous Improvement
	6. Quiz 1: Product and Process Design
	7. Manufacturing Systems
	8. Project: The Baldrige Award
	9. Manufacturing Processes
	10. Lean Manufacturing
	11. Project: A Case Study: Toyota's Lean Manufacturing Process
	12. Quiz 2: Manufacturing Systems and Processes
	13. Special Project*
	14. Test
	15. Course Project Part 4: Think Process*
	16. Glossary and Credits

Unit 5: Safety and Regulations in Manufacturing		
Intro. to Careers in Manufacturing	Assignments	
	1. Manufacturing Regulations and Standards	9. Project: Study OSHA Violations
	2. Compliance for Manufacturers	10. Developing a High-Performing Workplace
	3. Project: Research Manufacturing Compliance Jobs	11. Project: Evaluate a Best U.S. Company
	4. The Impact of Regulations on Manufacturing	12. Quiz 2: Safety in a High-Performing Workplace
	5. Project: Argue a Regulatory Issue	13. Special Project*
	6. Quiz 1: Manufacturing Regulations and Compliance	14. Test
	7. Manufacturing Workplace Hazards	15. Course Project Part 5: Determine Potential Hazards*
	8. Manufacturing Workplace Safety Programs	16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
ICM	Assignments	
	1. Course Project Part 6: Look to the Future*	3. Exam
	2. Review	

(*) Indicates alternative assignment

Careers in Manufacturing Processes

Careers in Manufacturing Processes concerns the manufacturing process, from the conception of a new product through the prototype stage to fabrication, assembly, testing, and customer satisfaction. Manufacturing is the beating heart of American enterprise. Indeed, it is the heart of the economy of any advanced industrialized nation. This course examines every aspect of the manufacturing process from strategy and management to factory-floor tactics.

Objectives

- Analyze means for achieving excellence in a manufacturing company.
- Develop skills to draw up a manufacturing plan and schedule.
- Chart the manufacturing skills needed to research and create products that address the needs of current and future customers.
- Apply market research, analytical skills, and financial understanding to the concepts of entrepreneurial endeavors in manufacturing.
- Analyze engineering, quality, and manufacturing responsibilities needed to build an excellent process and team approach.
- Recognize the need for accurate records and for making decisions based on data and facts.
- Analyze data, records, and budgets to determine optimal business and management strategies for the company.
- Develop interpersonal, communication, and critical thinking skills to work in teams and to use the skills of all team members.
- Chart the job and skill types that create manufacturing processes from conception to post purchase.
- Instruct others on the basics of maintaining safe working environments.
- Analyze the cultures of high-performing companies, and differentiate among various kinds of continuous improvement and lean manufacturing strategies.
- Analyze fabrication, assembly, inspection, and testing as they combine in a value stream to produce a quality product meeting or even exceed customer expectations.
- Analyze the function and requirements of product service in the field and warranty work on products and how these two activities affect budgets and manpower.

Unit 1: Introduction to Manufacturing and Corporate Culture		
Careers in Manufacturing Processes	Assignments	
	1. Course Overview	10. Market Research and Core Competencies
	2. Introduction to Manufacturing and Corporate Culture	11. Project: Preparing to Work with Your Dream Company
	3. The Economic Impact of Manufacturing	12. Moving Forward into Preproduction
	4. Project: Learning about a Manufacturing Company	13. Quiz 2: Customers and Manufacturing
	5. The Manufacturing Career	14. Special Project*
	6. Project: Looking at Work, Looking for Work	15. Test
	7. Quiz 1: The Role of Manufacturing	16. Course Project Part 1: Introduction of Your Product or the Improvement to a Product*
	8. Customers' Values and Needs	17. Glossary and Credits
	9. Project: My Product to Improve the World	

Careers in Manufacturing Processes	Unit 2: Product Development Phase	
	Assignments	
	1. The Product Development Process	10. Release to Production
	2. Organizing a Product Development Team	11. Project: Project Assessment for Overseeing Testing of a Bicycle Trailer
	3. Project: Picking a Manufacturing Career	12. Quiz 2: Prototypes and Preproduction Testing
	4. The Evaluation of Alternative Designs Using 3P	13. Special Project*
	5. Project: What Do Others Think of an Idea?	14. Test
	6. Quiz 1: Developing a Product	15. Course Project Part 2: Prototype Phase*
	7. Building and Testing Prototypes	16. Glossary and Credits
	8. Prototype Flow from Procurement to Testing	
	9. Project: Prototype Project Manager for an Industrial Dishwasher	
Careers in Manufacturing Processes	Unit 3: Production I	
	Assignments	
	1. Production Planning	9. Scheduling Material
	2. Bill of Materials and Cost Collection	10. Identifying Critical Parts and Materials
	3. Project: Bill of Materials and Cost Collection for a Fundraiser	11. Project: Researching Supply Chain Risk
	4. Lean Manufacturing	12. Quiz 2: Procurement
	5. Project: A System of Profound Knowledge	13. Special Project*
	6. Quiz 1: Planning Production	14. Test
	7. Production Procurement	15. Course Project Part 3: Staffing*
	8. Project: Creating Documentation	16. Glossary and Credits
Careers in Manufacturing Processes	Unit 4: Production II	
	Assignments	
	1. Core Competencies and Production	9. Project: Ways OSHA Promotes Worker Safety
	2. Project: Investigate the Flexible Manufacturing System (FMS)	10. Continuous Improvement
	3. Manufacturing Processes, Safety, and Jobs	11. Project: Baldrige Award Winners and How They Won
	4. Core Competencies and Production	12. Quiz 2: Assembling and Testing Products
	5. Project: Working with TIM WOOD	13. Special Project*
	6. Quiz 1: The Manufacturing Process	14. Test
	7. Assembly and Testing	15. Course Project Part 4: Production Phase*
	8. Quality and Safety	16. Glossary and Credits
Careers in Manufacturing Processes	Unit 5: Customer Service: Before Delivery to After Delivery	
	Assignments	
	1. Customer Acceptance	10. Customer Satisfaction and Delight
	2. Project: Career Choices	11. Project: Customer Delight at a Car Accessories Store
	3. The Packing Process	12. Quiz 2: After Delivery
	4. Project: Dunnage	13. Special Project*
	5. Shipping	14. Test
	6. Quiz 1: Delivering the Product	15. Course Project Part 5: Delivery*
	7. Field Service	16. Glossary and Credits
	8. Project: Creating a Field Service Department	
	9. Warranty Service	

Careers in Manuf	Unit 6: Course Project, Review, and Exam		
	Assignments		
	1. Course Project Part 6: Corporate Responsibility*	3. Exam	
	2. Review		

(*) Indicates alternative assignment

Marketing

Introduction to Careers in Marketing

The Introduction to Marketing course will provide students with an overview of marketing, which is an essential element for any company that produces products that are bought and used by individuals.

Students will learn about what marketing is and how the process of marketing works, the role of market research and how companies incorporate ethics into their marketing strategies.

They will also learn about the importance of strategic planning for marketers, the five step marketing strategic process, and strategies for growth.

Students will learn about the environment in which marketers operate. This includes the microenvironment, which refers to entities and influences close to the company or marketer, and the macroenvironment, which refers to influences that impact all of society, such as culture, social trends, and technology.

They will also learn about the Four P's of the marketing mix: product, price, promotion, and place. Students will evaluate the importance of each of these four elements and learn specifically about how technology has changed the approach to the marketing mix. They will also learn about international markets and how to approach marketing at a global level.

After completing this course, students will have a fundamental understanding of the principles of marketing. They will be able to explain the marketing process, marketing strategic planning, the marketing environment, and the trends, opportunities, and challenges in the marketing world today.

Objectives

- Understand what marketing is and its role both within the company and society.
- Understand how marketing achieves its primary objective of adding value.
- Learn the marketing process and how it impacts marketing strategic planning.
- Understand the various components of the marketing environment.
- Analyze the elements of the marketing mix (the Four P's) and determine how each element contributes to the marketing effort.
- Become aware of the impact technology has had on marketing.
- Recognize the need for ethical practices and know the types and consequences of unethical behavior.

Unit 1: Overview of Marketing			
Intro. to Careers in Marketing	Assignments		
	1. Course Overview	10. Project: Protecting Consumers from Harmful Products	
	2. Marketing	11. Sustainability	
	3. Project: Is There Truth in Advertising?	12. Project: Sustainability Initiative	
	4. The Marketing Process	13. Quiz 2: Ethics and Sustainability	
	5. Marketing Research	14. Special Project*	
	6. Project: Identifying a Market	15. Test	
	7. Quiz 1: Marketing	16. Course Project Part 1: Creating a Marketing Plan*	
	8. Ethics	17. Glossary and Credits	
	9. Ethical Issues		

Unit 2: Marketing Strategic Planning	
Intro. to Careers in Marketing	Assignments
	1. Defining the Business Mission
	2. Project: Creating a Mission Statement
	3. Conducting a Situational Analysis
	4. Project: Analyzing a Company Using SWOT
	5. Segmentation
	6. Quiz 1: Strategic Planning (Part 1)
	7. Targeting and Positioning
	8. Project: Paying Attention to Marketing Messages
	9. Implementation and Marketing Mix
	10. Evaluating Performance
	11. Project: Measuring Web Performance
	12. Quiz 2: Strategic Planning (Part 2)
	13. Special Project*
	14. Test
	15. Course Project Part 2: Segmenting the Market*
	16. Glossary and Credits

Unit 3: The Marketing Environment and Consumer Behavior	
Intro. to Careers in Marketing	Assignments
	1. The Microenvironment
	2. Project: Conducting a Competitive Analysis
	3. The Macroenvironment (Part 1)
	4. The Macroenvironment (Part 2)
	5. Project: Economic Analysis
	6. Quiz 1: The Marketing Environment
	7. The Consumer Decision-making Process
	8. Project: Making a Purchase Decision
	9. Psychological Factors
	10. Social and Situational Factors
	11. Project: Learning about Influences on Consumers
	12. Quiz 2: Consumer Behavior
	13. Special Project*
	14. Test
	15. Course Project Part 3: Consumer Behavior*
	16. Glossary and Credits

Unit 4: The Marketing Mix	
Intro. to Careers in Marketing	Assignments
	1. The Marketing Mix: Products
	2. Project: Developing a New Product
	3. The Marketing Mix: Services
	4. The Marketing Mix: Price
	5. Project: Analyzing Price-fixing Cases
	6. Quiz 1: The Marketing Mix (Part 1)
	7. The Marketing Mix: Distribution
	8. Project: Learning About Logistics
	9. The Marketing Mix: Promotion (Part 1)
	10. The Marketing Mix: Promotion (Part 2)
	11. Project: Using Promotional Tools
	12. Quiz 2: The Marketing Mix (Part 2)
	13. Special Project*
	14. Test
	15. Course Project Part 4: Promotional Strategy*
	16. Glossary and Credits

Unit 5: Marketing Today	
Intro. to Careers in Marketing	Assignments
	1. Technology: Products
	2. Project: The Evolution of a Technology-based Product
	3. Technology: Price and Distribution
	4. Technology: Promotion
	5. Project: Impact of Technology on Marketers
	6. Quiz 1: Technology
	7. Global Marketing Evaluations
	8. Global Marketing Entry Strategies
	9. Project: Expanding Globally
	10. Career Opportunities in Marketing
	11. Project: Finding a Job
	12. Quiz 2: Global Marketing
	13. Special Project*
	14. Test
	15. Course Project Part 5: Global Market Entry*
	16. Glossary and Credits

Unit 6: Course Project, Review, and Exam		
ICM	Assignments	
	1. Course Project Part 6: The Completed Marketing Plan*	2. Review 3. Exam

(*) Indicates alternative assignment

Careers in Marketing Research

Marketing research is the foundation of all marketing activities because it provides the data needed to make key strategic decisions about products, promotions, pricing, and other key organizational decisions. This course will provide information about the process of investigation and problem analysis by using research to produce key marketing statistics that are communicated to management and used throughout the organization. This course concludes with the execution, interpretation, and presentation of marketing research.

Objectives

- Plan, organize, and manage day-to-day marketing research activities.
- Design and conduct research activities to facilitate marketing business decisions.
- Use information systems and tools to make marketing research decisions.
- Describe the impact of economics, economics systems and entrepreneurship on marketing.
- Implement marketing research to obtain and evaluate information for the creation of a marketing plan.
- Plan, monitor, manage, and maintain the use of financial resources for marketing activities.
- Plan, monitor, and manage the day-to-day activities required for continued marketing business operations.
- Describe career opportunities and the means to achieve those opportunities in each of the Marketing Career Pathways.
- Select, monitor, and manage sales and distribution channels.
- Determine and adjust prices to maximize return while maintaining customer perception of value.
- Obtain, develop, maintain, and improve a product or service mix in response to market opportunities.
- Communicate information about products, services, images, and/or ideas to achieve a desired outcome.
- Use marketing strategies and processes to determine and meet client needs and wants.

Unit 1: The World of Marketing Research	
Careers in Marketing Research	Assignments
	1. Course Overview
	2. Introduction to Market Research
	3. Project: Discovering Business Problems
	4. Market Research and the Organization
	5. Project: Pets and People's Attitudes Toward Them
	6. Trends in Marketing Research
	7. Quiz 1: Overview of Marketing Research
	8. Functions of Marketing Research
	9. Project: Utilizing the Functions of Marketing Research
	10. Marketing Research for Decision-making
	11. Project: Making Decisions Using Marketing Research
	12. Types of Marketing Research
	13. Quiz 2: Marketing Research and Decision-making
	14. Special Project*
	15. Test
	16. Course Project Part 1: Elements of Marketing Research*
	17. Glossary and Credits

Unit 2: The Marketing Research Industry and Ethics		
Careers in Marketing Research	Assignments	
	1. Overview of the Marketing Research Industry	9. Ensuring Ethical Standards in Each Phase of Research
	2. Project: Making Decisions Using Marketing Research	10. Project: Ethical Case Studies
	3. Key Firms in the Industry	11. Participants' Rights and Responsibilities
	4. The Marketing Research Industry Structure	12. Quiz 2: Research Ethics
	5. Project: Understanding and Utilizing the Marketing Research Industry Structure	13. Special Project*
	6. Quiz 1: The Marketing Research Industry	14. Test
	7. Marketing Research Ethics	15. Course Project Part 2: Careers and Ethical Situations in Marketing Research*
	8. Project: Examining a Code of Marketing Research Standards	16. Glossary and Credits
Unit 3: Types of Marketing Research		
Careers in Marketing Research	Assignments	
	1. Overview of Traditional Research Methods	9. Reaching Participants Online
	2. Using Surveys and Types of Surveys	10. Determining if Online Marketing Research is the Right Choice
	3. Project: Creating a Survey	11. Project: Determining if Online Marketing Research is the Best Choice
	4. Secondary Data and its Role in Marketing Research	12. Quiz 2: Online Marketing Research
	5. Project: Utilizing Secondary Data	13. Special Project*
	6. Quiz 1: Traditional Survey Research and Secondary Data	14. Test
	7. Technology and Marketing Research	15. Course Project Part 3: Marketing Research Study Design*
	8. Project: Utilizing Technology in Marketing Research	16. Glossary and Credits
Unit 4: Market Research Basics		
Careers in Marketing Research	Assignments	
	1. Overview of Measurement and Labeling of Information	9. Project: Careers in Data Processing and Analysis
	2. Project: Measurement in Marketing Research	10. Tabulating the Data
	3. Data Types and Marketing Research	11. Project: Examples of One-Way Tabulation and Cross-Tabulation
	4. Project: Examples of Nominal, Ordinal, Interval, and Ratio Scales	12. Quiz 2: Data Processing
	5. Data Examples and Their Uses	13. Special Project*
	6. Quiz 1: Concepts of Measurement	14. Test
	7. Raw Data into Useful Information	15. Course Project Part 4: Data Processing and Analysis*
	8. The Five Steps in the Data Processing/Analysis Phase	16. Glossary and Credits

Careers in Marketing Research	Unit 5: Putting It All Together	
	Assignments	
	1. Communicating the Research Results	9. Evaluating Decisions and Updating Information through Marketing Research
	2. Project: Marketing Research Report	10. Continued Uses for Data
	3. Decisions Based on the Findings	11. Project: Continued Uses of Data
	4. Project: Examples of Conclusions and Recommendations/Decisions	12. Quiz 2: Managing Marketing Research
	5. Implementing the Decisions	13. Special Project*
	6. Quiz 1: Communicating the Research Results	14. Test
	7. Managing Marketing Research for the Long Term	15. Course Project Part 5: Making a Marketing Research Presentation*
	8. Project: Changes that Require New or Updated Decisions	16. Glossary and Credits

CMR	Unit 6: Course Project, Review, and Exam	
	Assignments	
	1. Course Project Part 6: Marketing Research: A Comprehensive Overview *	2. Review
		3. Exam

(*) Indicates alternative assignment

STEM (Science, Technology, Engineering and Mathematics)

Engineering and Design

Engineering and Design is part of the STEM (Science, Technology, Engineering, and Mathematics) education and career path. By building real-world problem-solving and critical-thinking skills, students learn how to innovate and design new products and improve existing products. Students are introduced to the engineering design process to build new products and to the reverse engineering process, which enables engineers to adjust any existing product.

Parallels and analogies from Scriptural examples will firmly seat the course in Bible truth, since God is the master engineer, designer, and creator of everything. Popular topics and issues that are politically controversial will be explored from a Biblical perspective.

A second and equally important emphasis will address how fluid power is used by engineers to make difficult maneuvers easier, increasing efficiency and minimizing effects on the environment. Students will then identify how engineering and design have a direct impact on environmental sustainability and economic greening, with Bible principles incorporated when appropriate. Finally, students will incorporate the engineering design process, environmental life cycle, and green engineering principles to create a decision matrix to learn how to solve environmental issues, while identifying how following God's original principles would have avoided producing those issues in the first place.

Objectives

- Understand the basic STEM requirements of engineers and the skills required for the occupation.
- Define and understand how forces are transmitted with fluid systems to build efficiency and increase sustainability. With this knowledge, students can solve a problem with a new design solution using fluid power.
- Utilize sketching skills and techniques to produce detailed sketches of components in the design of a real-world object to scale. This allows students to determine the feasibility of a product or design.
- Use the engineering design process and reverse engineering techniques and apply them to a design. They will be able to create and use decision matrices to make design decisions based on logic and analysis. Students will be able to identify and research environmental issues and challenges with respect to energy and air quality.
- Identify and analyze the environmental life cycle of a product or process to solve sustainability challenges for social and industrial environmental issues.

It is helpful if students are familiar with renewable and nonrenewable resources.

Many of the principles discussed in this course can be better addressed through the use of broken machines, toys, and electronics. Collection of these materials prior to the course will greatly help the student in the course.

Unit 1: Introduction to Engineering and Design and the Design Process		
Engineering and Design	Assignments	
	1. Course Overview	10. Project: Researching Materials Designs
	2. Design Opportunities All Around Us	11. Application of Materials
	3. Design Improvements	12. Project: Designing a Destructive Test
	4. Project: Creating a Product Discussion Forum	13. Quiz 2: Fundamentals of Engineering
	5. Improvements of Everyday Items	14. Special Project*
	6. Project: Model or Prototype Suggestion Presentation	15. Test
	7. Quiz 1: Introduction to Design Opportunities	16. Course Project Part 1: Identifying the Product or Process*
	8. Basic Engineering Concepts	17. Glossary and Credits
	9. Choosing Materials for Design	

Unit 2: Fluid Systems: Energy and Power Technologies in Engineering		
Engineering and Design	Assignments	
	1. Fluid Power Systems	9. Efficient Fluid Power Designs
	2. Fluid Power Devices	10. Designing a Fluid Power Lifting System
	3. Project: Researching a Fluid Power System Goal	11. Project: Designing a Fluid Power Lift System
	4. Designing Fluid Power Systems for Future Developments	12. Quiz 2: Fluid Power Applications and Capabilities
	5. Project: Creating a Fluid Power System for the Future	13. Special Project*
	6. Quiz 1: Introduction to Fluid Power	14. Test
	7. Common Applications for Fluid Power Systems	15. Course Project Part 2: Incorporating a Fluid Power System*
	8. Project: Identifying Fluid Power in Daily Life	16. Glossary and Credits

Unit 3: Modeling and Sketching		
Engineering and Design	Assignments	
	1. Introduction to Technical Sketching and Drawing	9. Project: Researching Model Uses in Remote or Dangerous Locations
	2. Project: Interview an Engineer About Sketching	10. Designing a Sketch Model
	3. Geometric Shapes and Solids in Engineering	11. Project: Presenting a Sketch Model of a Designed Pet Toy
	4. Drawing to Scale	12. Quiz 2: Sketch Modeling
	5. Project: Creating a Technical Sketch of an Everyday Object to Scale	13. Special Project*
	6. Quiz 1: Introduction to Design and Technical Sketches	14. Test
	7. The Applications for Modeling in Engineering	15. Course Project Part 3: Designing a Sketch Model*
	8. Modeling and Prototypes	16. Glossary and Credits

Unit 4: Reverse Engineering		
Engineering and Design	Assignments	
	1. Reverse Engineering: Visual Analysis	10. Calculating the Process: Materials, Time, and Cost for Improvement
	2. Reverse Engineering: Functional Analysis	11. Project: Researching Materials, Time, and Cost for Product Modifications
	3. Project: Creating a Function Structure Diagram or Product Teardown Chart	12. Quiz 2: Using Reverse Engineering for Product Improvement
	4. Reverse Engineering: Structural Analysis	13. Special Project*
	5. Project: Creating a Morphological Matrix	14. Test
	6. Quiz 1: Introduction to Reverse Engineering	15. Course Project Part 4: Calculating the Process: Materials, Time, and Cost Analyses*
	7. Finding the Product: The Reverse Engineering and Design Process Applied	16. Glossary and Credits
	8. Implementing the Procedure: Reverse Engineering a Product	
	9. Project: Reverse Engineering Documentation and Presentation	
Unit 5: Engineering to Improve Sustainability		
Engineering and Design	Assignments	
	1. Environmental Engineering Introduction	11. Project: Creating a Decision Matrix for an Environmental Issue
	2. Project: Researching a Local Sustainability Issue	12. Quiz 2: Environmental Life Cycle and Green Engineering Design
	3. Energy and Air Quality	13. Special Project*
	4. Green Buildings and Green Initiatives	14. Test
	5. Project: LEED Ratings for Building Construction	15. Course Project Part 5: Incorporating Green Engineering Principles*
	6. Quiz 1: Introduction to Environmental Engineering	16. Glossary and Credits
	7. Environmental Assessment and Impacts	
	8. Project: Researching Life Cycles for Assessment	
	9. Green Design Principles: Systems and Environment	
	10. Incorporating Green Engineering Principles	
Unit 6: Course Project, Review, and Exam		
E&D	Assignments	
	1. Course Project Part 6: Conducting a Life-Cycle Analysis*	2. Course Review
		3. Exam

(*) Indicates alternative assignment

Engineering and Innovation

The Engineering and Innovation course will provide students with an understanding of the field of engineering and introduction to the concepts of invention and innovation, as well as some of the skills and tools necessary to invent and innovate. This information will provide students with the ability to invent and innovate in their field of choice.

Students will learn details about the scope and nature of the field of engineering, as well as the Biblical principles that serve as the foundation for engineering and work in general. They will also learn about the history of invention and innovation and how those activities play a role in the advancement of human society. Students will be introduced to patents, regulations, and ethical and professional standards that apply in the fields of engineering and invention.

Students will also learn about analytical modeling and problem solving, interpreting the results of models and experiments, and understanding how bias impacts outcomes. In addition, students will learn about innovations and inventions in the fields of biomedicine and the environment and how those fields have impacted the health and well-being of society. Lastly, students will learn about career choices and organizations and resources available for individuals who wish to incorporate invention and innovation into their careers and lives.

Objectives

- Understand the field of engineering as well as the concepts of invention and innovation.
- Understand the history of inventions and innovations and compare and contrast the roles of innovators, inventors, and engineers.
- Understand the changes that inventions have brought to society and how engineers and inventors collaborate with business.
- Understand how to search and apply for patents, find regulations, and research ethical and professional standards that apply in the fields of engineering and innovation.
- Understand the process of invention as problem solving, including using and interpreting models, and apply a model to a problem to solve it.
- Understand problem solving and innovation specifically in the fields of biomedicine and the environment.
- Identify career options and resources in interest areas, as well as understand how to bring a product or idea to market.

For topics in this course, it is helpful for students to be familiar with general concepts of the world of business as well as the basics of conducting research on websites.

If students are unfamiliar with these topics, it is recommended that they familiarize themselves with conducting online searches for business-related topics on the Internet by visiting sites such as BusinessUSA.gov or business magazine websites such as Forbes.com or BusinessWeek.com. These websites will provide an introduction to what is currently happening in the business world as well as give students an opportunity to practice navigating websites.

Unit 1: Introduction to Engineering and Innovation		
Engineering and Innovation	Assignments	
	1. Course Overview	10. Engineers as Inventors
	2. Who are Inventors and Innovators?	11. Project: Researching an Innovator
	3. Exploring Engineering and Business	12. Life-Altering Innovation
	4. Project: Innovating a Product	13. Quiz 2: The History of Invention
	5. Who's the Hero: The Inventor or the Business?	14. Special Project*
	6. Project: Starting a Business	15. Test
	7. Quiz 1: Introduction	16. Course Project Part 1: History of Related Inventions*
	8. The History of Invention	17. Glossary and Credits
	9. Project: Historical Inventions	
Unit 2: Patents and Regulations		
Engineering and Innovation	Assignments	
	1. Provisional and Traditional Patents	10. The Balance Between Excessive Regulation and Encouraging Innovation
	2. Types of Patents	11. Project: Apply for a Patent: Rules and Regulations
	3. Project: Comparing Patent Applications	12. Quiz 2: Regulations and Innovations
	4. Scope of Patent Protection	13. Special Project*
	5. Project: Patent Search	14. Test
	6. Quiz 1: Patents	15. Course Project Part 2: Patenting the Invention*
	7. Laws and Regulations	16. Glossary and Credits
	8. Project: Apply for a Patent	
	9. Staying Current on New Laws	
Unit 3: Ethical and Professional Practices		
Engineering and Innovation	Assignments	
	1. Ethics in Innovation	9. Project: Practicing Analytical Skills
	2. Project: Case Study: Ethical Innovation by a Company	10. Modeling in Innovation
	3. Professional Standards	11. Project: Career Exploration
	4. Project: Industry Ethics and Professional Standards	12. Quiz 2: Analytical Problem Solving
	5. Familiarization with Rules and Requirements	13. Special Project*
	6. Quiz 1: Ethical and Professional Innovators	14. Test
	7. Researching as Inventors	15. Course Project Part 3: Modeling the Invention*
	8. Analytical Approach to Innovation	16. Glossary and Credits
Unit 4: Analytical Modeling and Outcomes Assessment		
Engineering and Innovation	Assignments	
	1. Analytical Modeling	10. Interdependence: Innovation and Environment
	2. Project: Comparing Models	11. Project: New Innovation for the Environment
	3. Choosing a Model and Limiting Bias	12. Quiz 2: Green and Environmental Issues in Innovation
	4. Interpreting Results	13. Special Project*
	5. Project: Career Exploration	14. Test
	6. Quiz 1: Analytical Model Selection and Outcomes	15. Course Project Part 4: Solving Environmental Issues with This Invention*
	7. Innovation and Environmental Sustainability	16. Glossary and Credits
	8. Innovation in Environmental Causes	
	9. Project: Environmentally Conscious Innovation	

Unit 5: Biomedicine and Emerging Innovations		
Engineering and Innovation	Assignments	
	1. Biomedical Innovation	8. Project: Your Invention
	2. Project: Impact of Biomedical Innovation	9. Careers in Innovation
	3. Resources in Innovation for Biomedicine	10. Resources for Innovators
	4. Project: Researching the Biomedical Innovation Process	11. Project: Researching Innovative Groups
	5. Advancement of Humankind from Biomedical Innovations	12. Quiz 2: Summary and Advancement
	6. Quiz 1: Engineering and Technical Tools	13. Special Project*
	7. Innovators, Inventions, and Modeling	14. Test
		15. Course Project Part 5: Identifying Resources*
		16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
E&I	Assignments	
	1. Course Project Part 6: Business Plan	3. Exam
	2. Course Review	

(*) Indicates alternative assignment

Engineering and Product Development

Engineers address society's needs and problems by designing and producing products and services. The field is diverse and includes Christian professionals who design skyscrapers, design machinery, oversee public works, and develop software and systems.

The purpose of this course is to provide an overview of the concepts of product engineering and development from a Christ-centered perspective. Students will analyze the life cycle of a product to prepare it for distribution and target markets. The course begins with building an understanding of the product life cycle, from the initial idea to drafting requirements to using 3-D modeling tools and other design tools. The final unit focuses on assembling project plan pieces for a product and evaluating the plans for a successful product launch. In addition, the course will provide information about the different careers available to students interested in engineering, product development, and project management, as well as, organizations that provide encouragement to Christian engineers.

Objectives

- Understand the field of engineering design and product development, as well as economic and project management concepts.
- Recognize the complex variables that need to be planned and coordinated as part of the product development life cycle.
- Develop ideas for overcoming challenges and issues related to engineering and product development and identify different career paths related to engineering and project management.
- Analyze product development life cycle management and discuss the role of data and human resources.
- Identify best practices for project management in engineering and strategies for building successful projects that utilize communication and critical thinking skills required for addressing complex problems.
- Evaluate and critique multiple perspectives and multiple vested interests involved in engineering project management and product development.

For topics in this course, it is helpful for students to be familiar with general concepts about engineering, as well as the basics of accessing IT tools and resources for conducting research on web sites.

If students are not familiar with these topics, it is important for them to familiarize themselves with online resources for engineering and product development.

Unit 1: Introduction to Engineering and Product Development		
Engineering and Product Development	Assignments	
	1. Course Overview	10. Testing the Product
	2. Introduction to Engineering	11. Deploying Products to Market
	3. Fundamentals of Product Development	12. Project: Software Deployment Plan
	4. Project: Analyze Product Engineering	13. Quiz 2: Specifications, Design and Testing Products
	5. Identifying and Testing Product Concepts	14. Special Project*
	6. Project: Product Development Process	15. Test
	7. Quiz 1: Engineering and Product Concepts	16. Course Project Part 1: Research Smart Grids*
	8. Requirements in Engineering, Design and Developing a Prototype	17. Glossary and Credits
	9. Project: Write Engineering Requirements for Your Product	

Engineering and Product Development	Unit 2: Project Charter and Requirements (PDLC Phases)	
	Assignments	
	1. What is a Project Charter?	9. Project: Competing with the Best
	2. Writing Project Charters and Understanding Requirements	10. Writing Product Requirements
	3. Project: Write a Project Charter	11. Project: Reverse Engineering
	4. Analyzing Project Charters	12. Quiz 2: Establishing Requirements
	5. Project: Write a Charter for a Recycling Project	13. Special Project*
	6. Quiz 1: The Components of Project Charters	14. Test
	7. What Are Requirements?	15. Course Project Part 2: Summarizing Case Studies of Selected Smart Grid Technology*
	8. Defining and Writing Requirements	16. Glossary and Credits

Engineering and Product Development	Unit 3: Design and 3-D Modeling	
	Assignments	
	1. Design Engineering	9. Project: Design a Part in 3-D
	2. Project: Student Engineer Needed: Houseplant Watering System	10. Evaluate Engineering Tools and Careers
	3. Analyze Problems and Potential Solutions in Design Engineering	11. Project: Evaluate 3-D Modeling Tools
	4. Analyze Design Plans	12. Quiz 2: Becoming Familiar with Design Tools
	5. Project: Design a Running Shoe	13. Special Project*
	6. Quiz 1: Exploring the Possibilities in Design	14. Test
	7. Engineering Modeling Tools	15. Course Project Part 3: Developing Components for the Final Project Plan*
	8. Practice Using Engineering Modeling Tools	16. Glossary and Credits

Engineering and Product Development	Unit 4: Product Launch (Implementation)	
	Assignments	
	1. The Implementation Stage	9. Project: Timeline, Market, Budget
	2. Analyze an Implementation Plan	10. Marketing, Engineering, and Implementation
	3. Project: Write an Implementation Plan	11. Project: Reverse Engineer a Marketing Plan
	4. PLM, Implementation, and Industry Concepts	12. Quiz 2: Getting the Product Ready for the Market
	5. Project: Prepare a Presentation about Engineering Contests	13. Special Project*
	6. Quiz 1: Putting Implementation into Action	14. Test
	7. Implementation Plan and Product Launch	15. Course Project Part 4: Designing and Modeling the Smart Grid*
	8. Implementation Plan and Product Life Cycle	16. Glossary and Credits

Unit 5: Review Full Product Development Life Cycle		
Engineering and Product Development	Assignments	
	1. Reviewing the Product Development Life Cycle and Key Strategies	9. Project: Develop a 3-D Video Game Project Plan and Sample Game
	2. Project: Write a Project Plan	10. How to Evaluate Project Plans
	3. Assembling a Successful Project Plan	11. Project: Write a Project Brief and Evaluate It
	4. Planning, Structure, and Thinking Behind Project Plans	12. Quiz 2: Perfecting Your Project Plan
	5. Project: Write Part of a Project Plan Chart	13. Special Project*
	6. Quiz 1: Putting Together the Pieces of the Plan	14. Test
	7. Compare and Contrast Project Plans	15. Course Project Part 5: Implementation Plan*
	8. Assembling Project Plans and Engineering for the Twenty-First Century	16. Glossary and Credits
	Unit 6: Course Project, Review, and Exam	
E&PD	Assignments	
	1. Course Project Part 6: Finalize Your Proposal*	3. Exam
	2. Course Review	

(*) Indicates alternative assignment

Transportation, Distribution and Logistics

Introduction to Careers in Transportation, Distribution, and Logistics

Transportation and Distribution Logistics is a course intended to introduce students to the complicated world of commercial transportation. This area of commerce is becoming increasingly complex and sophisticated, with work and career openings available at all levels of education. Most people, however, see only fragments of the big picture.

Transportation is among the most crucial and defining elements of modern commerce. The ability to move people and goods from place to place requires vast investments of technology, and of manpower. Without that investment almost all aspects of modern life would grind to a halt.

Objectives

- Describe the nature and scope of the Transportation, Distribution, and Logistics Career Cluster and the role of transportation, distribution, and logistics in society and the economy.
- Describe the application and use of new and emerging advanced techniques to provide solutions for transportation, distribution, and logistics problems.
- Describe the key operational activities required of successful transportation, distribution, and logistics facilities.
- Identify governmental policies and procedures for transportation, distribution, and logistics facilities.
- Describe transportation, distribution, and logistics employee rights, and responsibilities, and employers' obligations concerning occupational safety and health.
- Describe career opportunities and means to achieve those opportunities in each of the transportation, distribution, and logistics career pathways.
- Understand the strengths and weaknesses of the major modes of transportation, and the technological innovations that are occurring in each area.
- Learn about the role of governmental agencies and their impact on transportation systems.
- Analyze financial data to develop budgets, and determine profitability, cost reduction, and asset utilization.
- Identify the job requirements and aptitude needed to successfully pursue different career pathways in the TDL areas.

Intro. to Careers in Transportation, Distribution, and Logistics	Unit 1: Transportation Overview	
	Assignments	
	1. Course Overview	10. The Regulatory and Competitive Environment for Transportation
	2. Characteristics of Each Transportation Mode	11. Careers in Transportation That Move People
	3. Project: Create a Shipping Plan	12. Project: Understanding Educational Requirements for Specific Jobs
	4. A Brief History of Transportation, Logistics, and the Economic Environment	13. Quiz 2: Transportation of People and the Regulatory Environment
	5. Careers in Transportation	14. Special Project*
	6. Project: A Week in the Life of a Transportation Worker	15. Test
	7. Quiz 1: Modes of Transportation	16. Course Project Part 1: What's Your Niche?*
	8. Mass Transportation	17. Glossary and Credits
	9. Project: FAA Guidelines for Pilots	

Intro. to Careers in Transportation, Distribution, and Logistics	Unit 2: Distribution and Warehousing	
	Assignments	
	1. The Roles of Distribution	9. Managing Distribution Operations
	2. Project: Design a Distribution Center	10. Careers in Distribution Center Management
	3. Warehouse Functions and Facilities Management	11. Project: Interview a Warehouse Employee
	4. Facility Layout and Equipment	12. Quiz 2: Roles and Responsibilities in the Distribution Center
	5. Project: Visit a Warehouse	13. Special Project*
	6. Quiz 1: Inside Distribution Centers and Warehouses	14. Test
	7. Automation in Distribution	15. Course Project Part 2: Your Team*
	8. Project: Create an Advertisement	16. Glossary and Credits

Intro. to Careers in Transportation, Distribution, and Logistics	Unit 3: Transportation Systems, Infrastructure Planning, Management & Regulation	
	Assignments	
	1. History of Transportation Systems in the United States	10. Careers in Transportation Planning and Regulation
	2. Project: The Pony Express	11. Project: Getting Around Your Community
	3. History of Transportation Systems in Europe	12. Quiz 2: Modern Transportation Infrastructure Management, Planning, and Regulation
	4. Project: Early Transportation Systems	13. Special Project*
	5. History of Transportation in Asia	14. Test
	6. Quiz 1: History of Transportation Systems	15. Course Project Part 3: Job Descriptions*
	7. Modern Transportation Infrastructure	16. Glossary and Credits
	8. Project: Regulated Transportation Industries	
	9. Transportation Planning and Regulation in the United States	

Intro. to Careers in Transportation, Distribution, and Logistics	Unit 4: Logistics & Logistics Services	
	Assignments	
	1. Inventory Management	9. Project: United States Army Corps of Engineers: Their Contributions
	2. Project: Design an Inventory Ordering System for Your Household	10. Careers in Logistics
	3. Purchasing	11. Project: You: The Logistician
	4. Reverse Logistics	12. Quiz 2: Outsourced and Military Logistics, and Logistics Careers
	5. Project: Evaluate a Company's Reverse Logistics Policies	13. Special Project*
	6. Quiz 1: Logistics Functions (Other than Transportation and Distribution)	14. Test
	7. Third- and Fourth-Party Logistics	15. Course Project Part 4: Getting the Right People in the Right Seat*
	8. Logistics in the Military	16. Glossary and Credits

Unit 5: Future Trends in Transportation, Distribution & Logistics		
Intro. to Careers in Transportation, Distribution, and Logistics	Assignments	
	1. Self-Driving Vehicles	9. Increased Supply Chain Visibility
	2. Project: Getting from Here to There without a Driver	10. Project: The Science Behind the Technology
	3. Drones	11. The Rebirth of Manufacturing in the USA
	4. Robots	12. Quiz 2: Impact of Technology (Part 2)
	5. Project: Robotics in Our Future	13. Special Project*
	6. Quiz 1: Impact of Technology (Part 1)	14. Test
	7. Radio Frequency Identification (RFID)	15. Course Project Part 5: Building the Company*
	8. Project: The Evolution of RFID Technology	16. Glossary and Credits
Unit 6: Course Project, Review, and Exam		
ICTDL	Assignments	
	1. Course Project Part 6: You're in Business	3. Exam
	2. Review	

(*) Indicates alternative assignment

Careers in Logistics Planning and Management Services

This course discusses careers in Logistics Planning and Management Services, and provides students with the history of logistics and recent advances in the field. The history of logistics creates a foundation of knowledge to build our understanding of the social and economic benefits of modern logistics. Modern societies and economic development depend on the ability to transport products from their point of origin to store shelves and then into the hands of consumers. Current trends in logistics favor low-cost methods, safety, technology, sustainability, and regulations to keep the goods flowing from their source to the consumers.

Packaging goods and materials for safe transport begins with knowing what is being handled. Goods that are intended for consumers have different packaging requirements than materials being shipped to manufacturers. Unitization makes it possible to move goods easily inside warehouse and distribution centers and between modes of transportation. Goods are often shipped through a combination of air, land, rail, and sea modes of transportation. When deciding which mode to use, logistics managers consider the location, transportation plan, routing, convenience, security, and costs related to their mode decision.

Managing inventory involves decision making and analysis to ensure the goods and materials flow through the logistics channels and supply chain properly. Inventory is an asset that the business carries to add revenues and profits. Identifying the need for goods and services is the first step in obtaining goods and services. Within the logistics process, many goods and services are obtained through a process of procurement. Space, time, and money are all important factors to consider when managing existing inventories and the need for future inventories.

Decision makers often look for a balance between the speed and the cost to ship goods. Documentation is needed to identify goods, enable tracking, indicate where the goods are from, and where they are being shipped. Liability for goods is common in all modes of shipping. Risk management identifies, analyzes, and evaluates elements of the business that can go wrong. These liabilities can be outside of the company's control, but many can be prevented. Regulatory agencies create rules and regulations that are intended to protect the public from many risks. Risk management considers the potential for risk—insurance is one way to minimize the risk. Everyone who holds a financial interest in the goods, vehicles, and property wants to know they are protected, so they buy insurance.

Regulatory agencies work in cooperation with other agencies to minimize the risks and liabilities for employers and their employees. OSHA advises employers, their staff, labor unions, and industry leaders on what they can do to keep the workplace safe. They also inspect the workplace to ensure the employers are in compliance with OSHA standards. Logistics offers many career opportunities across seven career pathways. Logistics is a high growth industry, and is a stable career choice. There is something for every career-seeker, ability, and experience level.

The objective of this course is to introduce the student to the field of logistics planning and management and to explain the career opportunities that are available in this field.

Objectives

- Apply communication skills with students, parents and other groups to enhance learning and a commitment to learning.
- Demonstrate critical thinking skills while processing logistics management perspectives, warehouse and distribution operations, inventory controls, regulations, and safety procedures.
- Categorize risks to safety, health, and the environment in the logistics industry.
- Demonstrate collaboration skills to enhance professional objectives for the company and the customer.
- Describe the rights and responsibilities that apply to individuals and practitioners within the logistics industry.

- Define professional development requirements to maintain employment and to advance in their chosen career.
- Apply organizational skills and logic to enhance their abilities and aptitudes.
- Demonstrate skills that enhance their understanding of safety in the workplace.

Unit 1: Providing and Managing Logistics Services for the Company and the Customer		
Careers in Logistics Planning and Management Services	Assignments	
	1. Course Overview	9. Project: Goods and Their Origins
	2. The Role of Transportation, Distribution, and Logistics in Society and the Economy	10. The Challenges of Transporting Goods
	3. Project: From Origin to Consumer	11. Making Logistics Easier with Technology
	4. Current Trends in Logistics	12. Project: Process Improvement
	5. You Are the Future of Logistics	13. Quiz 2: Logistics and the Supply Chain
	6. Project: Making Goals	14. Special Project*
	7. Quiz 1: Transportation, Distribution, and Logistics - Then and Now!	15. Test
	8. Logistics Management and the Supply Chain	16. Course Project Part 1: Distribution Facility Project*
		17. Glossary and Credits

Unit 2: Logistics and Supply Chain Management		
Careers in Logistics Planning and Management Services	Assignments	
	1. Material Handling: Packaging	9. Distribution is the Center of Activity Within
	2. Project: Consumer Goodies	10. Project: Where Did You Get That?
	3. Material Handling: Unitization	11. Pricing
	4. Material Handling: Weights & Measures	12. Quiz 2: Warehousing, Distribution, and Pricing
	5. Project: The Space Shuttle Endeavor	13. Special Project*
	6. Quiz 1: Material Handling	14. Test
	7. Warehousing	15. Course Project Part 2: Innovation*
	8. Project: Kansas City Smart Port	16. Glossary and Credits

Unit 3: Inventory and Inventory Management		
Careers in Logistics Planning and Management Services	Assignments	
	1. Inventory	9. Managing Procurement and Purchasing
	2. Project: Taking Stock (Part 1)	10. Project: Business Culture
	3. Inventory Management	11. Optimizing Procurement Practices
	4. Project: Taking Stock (Part 2)	12. Quiz 2: Procurement and Purchasing
	5. Inventory Accounting	13. Special Project*
	6. Quiz 1: Inventory Management	14. Test
	7. Procurement and Purchasing	15. Course Project Part 3: Inventory Controls*
	8. Project: Colgate's Procurement Process	16. Glossary and Credits

Unit 4: Transportation Management		
Careers in Logistics Planning and Management Services	Assignments	
	1. Modes of Transportation	9. Regulating Risk
	2. Project: Mode to Go	10. Project: Emergency Response
	3. Documentation	11. Insuring Risk
	4. Project: Importing & Exporting	12. Quiz 2: Risk Management
	5. Liability	13. Special Project*
	6. Quiz 1: Transportation, Documentation, and Liability	14. Test
	7. Managing Transportation Risk	15. Course Project Part 4: Modes of Transportation*
		16. Glossary and Credits

Unit 5: Logistics Safety & Opportunity	
Careers in Logistics Planning and Management Services	Assignments
	1. OSHA Rights & Responsibilities
	2. Project: OSHA's Forms
	3. Safety First
	4. Project: Hazardous Materials
	5. Working & Safety
	6. Quiz 1: Safety First
	7. Career Goals
	8. Project: Personality Traits
	9. Available Careers
	10. Project: Creating A Resume
	11. Career Credentials
	12. Quiz 2: You Are the Future of Logistics!
	13. Special Project*
	14. Test
	15. Course Project Part 5: Preparation & Prevention*
	16. Glossary and Credits
Unit 6: Course Project, Review, and Exam	
CLPMS	Assignments
	1. Course Project Part 6: Preparing Your Proposal*
	2. Review
	3. Exam

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