



LAWRENCE COUNTY CAREER AND TECHNICAL CENTER

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[Unit Name: Hardware Troubleshooting/Computer Hardware, System Software, More System Software](#)

UbD Curriculum Overview

Department	Management Information Systems		
Course Name	Business Law and Ethics		
Course Summary			
Unit Name	Principles of business law and ethics, Crimes often associated with Businesses and organizations, Improper use of business technology and property, Protect sensitive data and prepare confidentiality		
Grade Level(s)	Beginner, Intermediate and Advanced	Time / Duration	Two Weeks
Created (Date)	5/31/22	Revised (Date)	

Standards Addressed

List all standards that will be addressed during the unit.

Standards Addressed: POS:

- 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property
- 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).
- 305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)
- 306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

Standards Addressed: CEW

- CEW 13.1: Career Awareness & Preparation
 - 13.1.A: Abilities and Aptitudes
 - 13.1.F: Preparation for Careers
- CEW 13.3: Career Retention & Advancement



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- 13.3.A: Work Habits
- 13.3.G: Lifelong Learning

Stage 1 - Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

Big Ideas	The idea of protecting rights to ideas and discoveries is called copyright. Anything that is owned by a copyright holder is called intellectual property. One of the biggest challenges in data security is protecting confidential information. In addition to confidentiality and integrity, IT professionals need to be concerned with the availability of important company data. When using digital data, extra measures should be taken to protect information.
Transfer	<i>Students will be able to independently use their learning to...</i> Identify the principles of business law and ethics, explain how they relate to business policies, Explain crimes often associated with businesses and organizations, Identify improper use of business technology and property, Identify legal safeguards to protect sensitive data and preserve confidentiality.
Meaning	<i>Students will understand that...</i> • Copyright is automatically given to creators of works; no application is necessary. • The first step in keeping your data confidential is to be aware that threats exist. • When the internet is involved, privacy is never a certainty. • There are many different methods that hackers use to commit password attacks, and many of them are exploitations of passwords that are too simple and easy to guess. • One of the most important ways to keep a computer or network secure is to control who can access it and what they're allowed to do.
Essential Questions	1. How do intellectual property laws help me? How do they help companies? 2. Why should I obey intellectual property laws? 3. Why is computer security a vitally important issue? 4. How can I protect myself from social engineering? 5. How do authentication, authorization, and accounting work together?



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Stage 1 - Essential Content, Concepts, & Skills

What do we want students to know and be able to do?

Acquisition

Knowledge	<i>Students will know...*</i> • Piracy is the crime of using somebody else's intellectual property in a way that should be reserved for the copyright holder. • Fair use is an exception to copyright law that allows short excerpts of a copyrighted work to be used for purposes that benefit the public • Works whose copyrights have expired enter the public domain • Most software you buy is proprietary
Skills	<i>Students will be skilled at (be able to do)...</i> • Describe the implications of copyright and intellectual property laws for internet use. • Explain how Creative Commons licenses can make it easier for content creators to share their work. • Configure account access on various computing devices. • Encrypt files on a computer. • Evaluate email messages to determine if they represent a possible social engineering attack. • Identify the most common types of malware, including viruses, worms, Trojan horses, ransomware, and spyware. • Set a secure passcode on an iPad.

Stage 2 - Assessments / Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

Evaluation Criteria (F/S)	Assessment Evidence
• TestOut IT Fundamentals Intellectual Property and Cybersecurity Videos and Section Review (formative) • TestOut IT Fundamentals Intellectual Property Skills Labs and Quiz (summative) • TestOut IT Fundamentals Security Threats Skills Labs and Quiz (summative) • TestOut IT Fundamentals Authentication Skills Labs and Quiz (summative) • TestOut IT Fundamentals Data Encryption Skills Labs and Quiz (summative) • TestOut IT Fundamentals Device Security Quiz (summative)	Performance Task(s) / Think: • TestOut IT Fundamentals Intellectual Property and Cybersecurity Videos and questions and answers. • TestOut IT Fundamentals Intellectual Property Skills Labs completion and Quiz • TestOut IT Fundamentals Security Threats Skills Labs completion and Quiz • TestOut IT Fundamentals Authentication Skills Labs completion and Quiz • TestOut IT Fundamentals Data Encryption Skills Labs completion and Quiz • TestOut IT Fundamentals Device Security Skills Labs completion and Quiz
	Other Evidence:



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- GMetrix training and LearnKey IC3 Living Online training course (formative)

- GMetrix.net training and LearnKey IC3 Living Online Training practice tests

Stage 3 - Learning Plan

What are the differentiated instructional strategies, activities, lesson plans that support the enduring understandings and essential questions for all students? This section provides a summary of the Key Learning Events and Instruction.

Summary of Key Learning Events and Instruction

Day 1 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property

TestOut IT Fundamentals Intellectual Property videos, section review and quiz

Day 2 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

TestOut IT Fundamentals Security Threats videos, section review, skills lab and quiz

Day 3 306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- TestOut IT Fundamentals Authentication videos, section review, skills lab and quiz

Day 4 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- TestOut IT Fundamentals Data Encryption videos, section review, skills lab and quiz

Day 5 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- TestOut IT Fundamentals Device Security videos, section review and skills labs

Day 6 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

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Day 7 305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- GMetrix IC3 Living Online training and practice exams

Day 8 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property

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- GMetrix LearnKey IC3 Living Online training course

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306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

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Day 10 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- GMetrix LearnKey IC3 Living Online training course

Resources

- Teacher created presentations
- Teacher created quizzes
- TestOut IT Fundamentals Courseware
- GMetrix IC3 Living Online courseware training and practice exams
- GMetrix LearnKey IC3 Living Online courseware

UbD Curriculum Overview

Department	Management Information Systems		
Course Name	Business Law and Ethics		
Course Summary			
Unit Name	Principles of business law and ethics, Crimes often associated with Businesses and organizations, Improper use of business technology and property, Protect sensitive data and prepare confidentiality		
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306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

Standards Addressed: CEW

CEW 13.1: Career Awareness & Preparation

- 13.1.A: Abilities and Aptitudes
- 13.1.F: Preparation for Careers

CEW 13.3: Career Retention & Advancement

- 13.3.A: Work Habits
- 13.3.G: Lifelong Learning

Stage 1 - Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

Big Ideas

The idea of protecting rights to ideas and discoveries is called copyright. Anything that is owned by a copyright holder is called intellectual property. One of the biggest challenges in data security is protecting confidential information.

In addition to confidentiality and integrity, IT professionals need to be concerned with the availability of important company data.

When using digital data, extra measures should be taken to protect information.

Transfer

Students will be able to independently use their learning to...

Identify the principles of business law and ethics, explain how they relate to business policies, Explain crimes often associated with businesses and organizations, Identify improper use of business technology and property, Identify legal safeguards to protect sensitive data and preserve confidentiality.

Meaning

Students will understand that...

- Copyright is automatically given to creators of works; no application is necessary.
- The first step in keeping your data confidential is to be aware that threats exist.
- When the internet is involved, privacy is never a certainty.
- There are many different methods that hackers use to commit password attacks, and many of them are exploitations of passwords that are too simple and easy to guess.
- One of the most important ways to keep a computer or network secure is to control who can access it and what they're allowed to do.

Essential Questions

1. How do intellectual property laws help me? How do they help companies?
2. Why should I obey intellectual property laws?
3. Why is computer security a vitally important issue?
4. How can I protect myself from social engineering?
5. How do authentication, authorization, and accounting work together?



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Stage 1 - Essential Content, Concepts, & Skills

What do we want students to know and be able to do?

Acquisition

Knowledge

*Students will know...**

- Piracy is the crime of using somebody else's intellectual property in a way that should be reserved for the copyright holder.
- Fair use is an exception to copyright law that allows short excerpts of a copyrighted work to be used for purposes that benefit the public
- Works whose copyrights have expired enter the public domain
- Most software you buy is proprietary

Skills

Students will be skilled at (be able to do)...

- Describe the implications of copyright and intellectual property laws for internet use.
- Explain how Creative Commons licenses can make it easier for content creators to share their work.
- Configure account access on various computing devices.
- Encrypt files on a computer.
- Evaluate email messages to determine if they represent a possible social engineering attack.
- Identify the most common types of malware, including viruses, worms, Trojan horses, ransomware, and spyware.
- Set a secure passcode on an iPad.

Stage 2 - Assessments / Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

Evaluation Criteria (F/S)

- TestOut IT Fundamentals Intellectual Property and Cybersecurity Videos and Section Review (formative)
- TestOut IT Fundamentals Intellectual Property Skills Labs and Quiz (summative)
- TestOut IT Fundamentals Security Threats Skills Labs and Quiz (summative)
- TestOut IT Fundamentals Authentication Skills Labs and Quiz (summative)
- TestOut IT Fundamentals Data Encryption Skills Labs and Quiz (summative)
- TestOut IT Fundamentals Device Security Quiz (summative)

Assessment Evidence

Performance Task(s) / Think:

- TestOut IT Fundamentals Intellectual Property and Cybersecurity Videos and questions and answers.
- TestOut IT Fundamentals Intellectual Property Skills Labs completion and Quiz
- TestOut IT Fundamentals Security Threats Skills Labs completion and Quiz
- TestOut IT Fundamentals Authentication Skills Labs completion and Quiz
- TestOut IT Fundamentals Data Encryption Skills Labs completion and Quiz
- TestOut IT Fundamentals Device Security Skills Labs completion and Quiz



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- GMetrix training and LearnKey IC3 Living Online training course (formative)

Other Evidence:

- GMetrix.net training and LearnKey IC3 Living Online Training practice tests

Stage 3 - Learning Plan

What are the differentiated instructional strategies, activities, lesson plans that support the enduring understandings and essential questions for all students? This section provides a summary of the Key Learning Events and Instruction.

Summary of Key Learning Events and Instruction

Day 1 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property

TestOut IT Fundamentals Intellectual Property videos, section review and quiz

Day 2 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

TestOut IT Fundamentals Security Threats videos, section review, skills lab and quiz

Day 3 306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- **TestOut IT Fundamentals Authentication videos, section review, skills lab and quiz**

Day 4 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- **TestOut IT Fundamentals Data Encryption videos, section review, skills lab and quiz**

Day 5 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- **TestOut IT Fundamentals Device Security videos, section review and skills labs**

Day 6 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes).

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- **TestOut IT Fundamentals Device Security videos, section review and skills labs and quiz**

Day 7 305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- **GMetrix IC3 Living Online training and practice exams**

Day 8 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- **GMetrix LearnKey IC3 Living Online training course**

Day 9 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property



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305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- GMetrix LearnKey IC3 Living Online training course

Day 10 301 Identify the principles of business law and ethics and explain how they relate to business policies such as intellectual property

305 Identify improper use of business technology and property (e.g., computers, mobile devices, and telephones)

306 Identify legal safeguards to protect sensitive data and preserve confidentiality.

- GMetrix LearnKey IC3 Living Online training course

Resources

- Teacher created presentations
- Teacher created quizzes
- TestOut IT Fundamentals Courseware
- GMetrix IC3 Living Online courseware training and practice exams
- GMetrix LearnKey IC3 Living Online courseware

UbD Curriculum Overview

Department	Management Information Systems		
Course Name	Safety		
Course Summary			
Unit Name	Current ergonomic best practices, Organize and maintain workspace, Differentiate ways to dissipate electrostatic discharge		
Grade Level(s)	Beginner, Intermediate and Advanced	Time / Duration	Two Weeks
Created (Date)	2/28/22	Revised (Date)	

Standards Addressed

List all standards that will be addressed during the unit.

Standards Addressed: POS:

101 Follow current ergonomic best practices for health, safety and productivity.

102 Organize and maintain workspace.



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103 Differentiate ways to dissipate electrostatic discharge and related risks.

Standards Addressed: CEW

CEW 13.1: Career Awareness & Preparation

- 13.1.A: Abilities and Aptitudes
- 13.1.F: Preparation for Careers

CEW 13.3: Career Retention & Advancement

- 13.3.A: Work Habits
- 13.3.G: Lifelong Learning

Stage 1 - Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

Big Ideas	Typing for an extended period can cause Carpal Tunnel Syndrome. Carpal Tunnel Syndrome is repetitive stress injury to your hands. It is important to sit up straight and keep feet flat on the floor when using a computer. Components such as the CPU heat sink and fan can be hot.
Transfer	<i>Students will be able to independently use their learning to...</i> • Follow current ergonomic best practices, organize and maintain their workspace and describe and demonstrate ways to dissipate electrostatic discharge and related risks.
Meaning	<i>Students will understand that...</i> • Before handling a system component to make sure that it is powered off and that the main power cord is unplugged from the wall socket. • It is important to keep work areas and floors clear of clutter to help prevent accidents. • Staring at a computer screen for an extended period of time can strain your eyes. • Do not route cables across the floor in pathways. This can lead to tripping accidents, and could also result in worn cables.
Essential Questions	1. Which specific computer components require special care that will protect your safety when handling them? 2. How can ESD be a hazard to electronic computer components? 3. What steps can you take to reduce ESD if you do not have the proper equipment handy?



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Stage 1 - Essential Content, Concepts, & Skills

What do we want students to know and be able to do?

Acquisition

Knowledge	<i>Students will know...</i> • Typing for a long period can cause repetitive stress injuries to your hands. • It is possible to get shocked by touching an exposed wire or electrical socket. • To not use an ESD wrist strap when working with monitors, power supplies, laptop LCD panels, or other high-voltage components.
Skills	<i>Students will be skilled at (be able to do)...</i> • Use an anti-static mat and strap to protect yourself from ESD. • Implement appropriate grounding procedures. • The proper way is to lift heavy objects. • Determine the difference between a static shielding bag and a static-resistant bag.

Stage 2 - Assessments / Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

Evaluation Criteria (F/S)	Assessment Evidence
• Teacher created Safety presentations (formative) • Teacher created Safety quizzes (summative) • TestOut IT PC Pro Protection, Safety and Professionalism Quiz (summative) • TestOut IT PC Pro Change Management, PC Tools and Troubleshooting Process/PC Maintenance Quiz (summative) • GMetrix IC3 Computing Fundamentals training and practice exams (summative)	Performance Task(s) / Think: • Teacher created Safety presentation, questions and answers. • Teacher created Safety quizzes • PC Pro Protection, Safety and Professionalism Quiz • PC Pro Change Management, PC Tools and Troubleshooting Process/PC Maintenance Quiz • GMetrix (gmetrix.net) IC3 training Computing Fundamentals training and practice exams.
• GMetrix LearnKey IC3 Computing Fundamentals training course (formative)	Other Evidence: • GMetrix.net LearnKey IC3 Computing Fundamentals Training Courses



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Stage 3 - Learning Plan

What are the differentiated instructional strategies, activities, lesson plans that support the enduring understandings and essential questions for all students? This section provides a summary of the Key Learning Events and Instruction.

Summary of Key Learning Events and Instruction

Day 1 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.

Introduction to Shop Safety and Computer Lab Rules (Teacher created presentation and handouts)

Day 2 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.

Review Shop Safety and Computer Lab Rules (Teacher created presentation and quiz)

Day 3 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **Protection and Safety and Professionalism (TestOut PC Pro)**
- **Protection and Safety Professionalism Quiz (TestOut PC Pro)**

Day 4 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **Change Management, PC Tools and Troubleshooting Process/PC Maintenance (TestOut PC Pro)**

Day 5 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **Change Management, PC Tools and Troubleshooting Process/PC Maintenance Review and Quiz (TestOut PC Pro)**

Day 6 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **GMetrix IC3 Computing Fundamentals training and practice exams**

Day 7 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **GMetrix IC3 Computing Fundamentals training and practice exams**

Day 8 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **GMetrix LearnKey IC3 Computing Fundamentals training course**

Day 9 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.

- **GMetrix LearnKey IC3 Computing Fundamentals training course**

Day 10 (101) Follow current ergonomic best practices for health, safety and productivity.
(102) Organize and maintain workspace.
(103) Differentiate ways to dissipate electrostatic discharge and related risks.



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- GMetrix LearnKey IC3 Computing Fundamentals training course

Resources

- Teacher created presentations
- Teacher created quizzes
- TestOut PC Pro Courseware
- GMetrix IC3 Computing Fundamentals courseware training and practice exams
- GMetrix LearnKey IC3 Computing Fundamentals courseware

Course / Unit Basic Description

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Course Title: Microsoft Access/Database Administration

Grade Level(s): Beginner, Intermediate and Advanced

Course Summary: (optional)

Unit Name: Introduction to Microsoft Access 2019

Unit Number: TestOut Office Pro Chapter 7

Time/Duration: Two Weeks

Standards Addressed:

- 601 Design a database structure.
- 602 Create entity-relationship diagram.
- 603 Create tables and modify fields.
- 604 Build forms to capture, manipulate and display data.
- 605 Construct and manage queries using one or more tables.
- 606 Design and arrange reports using filters.
- 607 Apply normalization to relational databases.
- 609 Implement security, back-up and recovery procedures.
- 610 Import and export data into other applications.

Stage 1 Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

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Enduring Understandings/Big Ideas:

Databases are the primary tool for storing, managing, and analyzing information for any type of business or organization.



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Businesses regularly analyze data to help them make strategic decisions.
Understanding databases and the information and data they provide is an essential workplace skill to have.

Content Standard

- 601 Design a database structure.
- 602 Create entity-relationship diagram.
- 603 Create tables and modify fields.
- 604 Build forms to capture, manipulate and display data.
- 605 Construct and manage queries using one or more tables.
- 606 Design and arrange reports using filters.
- 607 Apply normalization to relational databases.
- 609 Implement security, back-up and recovery procedures.
- 610 Import and export data into other applications.

Transfer

Become more proficient in Microsoft Excel and prepared for the Microsoft Office Specialist Excel, Expert Excel Certification and TestOut Pro Certified: Microsoft Excel Exam and Management Information Systems Nocti Performance Exam.

Meaning

UNDERSTANDINGS

Students will understand that...

1. What one-to-many relationships you see in your everyday life.
2. How you can design a query to get information you want from your database.
3. What is the relationship between queries, relationships, and primary keys.
4. There are dangers of letting other people enter data into your tables.
5. Reports can help you make sense of your data.

Essential Questions:

1. How are relational databases already part of your everyday life?
2. What are the benefits of using a relational database as opposed to a spreadsheet?
3. What are the advantages of keeping data in multiple tables? What are the disadvantages?
4. How can you best organize the tables in your database?
5. How can you use criteria to hone the results of a query to your needs?
6. How can you use forms to reduce data entry errors?
7. Explain why or why not a report's formatting is important?



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Stage 1: Essential Content, Concepts & Skills

What do we want students to know and be able to do?

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Acquisition

Students will know.....

1. Why would you want to store certain types of data in Microsoft Access rather than in Microsoft Excel.
2. How to create a relationship between two tables.
3. More advanced Access features.

Students will be skilled at (be able to do).....

1. Plan the structure of a database.
2. Manage data in a database and create database tables.
3. Use queries, design forms and create and format reports.

Stage 2: Assessments/Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

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Evaluative Criteria	Assessment Evidence
Score on TestOut Pro Office Pro practice exams.	PERFORMANCE TASK(S)/Think: Completion of TestOut Office Pro Skills Labs. Completion of Microsoft Access It Lessons.
Score on Microsoft Office Specialist Access Certification exams.	OTHER EVIDENCE: Completion TestOut Office Pro Applied Labs. Completion of Microsoft Office Specialist Access GMetrix and LearnKey trainings and exams.



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Stage 3: Learning Plan

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Resources:

- TestOut Office Pro Courseware
- Microsoft Access It projects
- GMetrix Microsoft Office Specialist trainings and exams
- LearnKey Microsoft Office Specialist trainings and exams
- Certiport Microsoft Office Specialist Certification exams
- Teacher created lessons

Day 1 (601 Design a database structure)

- Plan the structure of a database.

Day 2 (603 Create tables and modify fields)

- Manage data in a database.
- Create database tables.

Day 3 (605 Construct and manage queries using one or more tables)

- Use queries.

Day 4 (604 Build forms to capture, manipulate and display data)

- Design forms.
- Create and format reports.

Day 5 (603 Create tables and modify fields)

- Create a new table in design view.
- Create a new table in datasheet view.

Day 6 (601 Design a database structure)

- Add fields to a table.
- Change the data type of a field.

Day 7 (601 Design a database structure)

- Change the field size of a short text field.
- Set a default value.

Day 8 (602 Create entity-relationship diagram)

- Create a lookup field.
- Create a relationship between two tables.

Day 9 (610 Import and export data into other applications)

- Delete a field from a table.
- Import an Excel file to a table.

Day 10 (606 Design and arrange reports using filters)

(607 Apply normalization to relational databases)

(609 Implement security, back-up and recovery procedures)

- Explore more advanced Access features.



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Course / Unit Basic Description

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Course Title: Microsoft Access/Database Administration

Grade Level(s): Beginner,
Intermediate and Advanced

Course Summary: (optional)

Unit Name: Introduction to Microsoft Access 2019

Unit Number: TestOut
Office Pro Chapter 7

Time/Duration: Two Weeks

Standards Addressed:

- 601 Design a database structure.
- 602 Create entity-relationship diagram.
- 603 Create tables and modify fields.
- 604 Build forms to capture, manipulate and display data.
- 605 Construct and manage queries using one or more tables.
- 606 Design and arrange reports using filters.
- 607 Apply normalization to relational databases.
- 609 Implement security, back-up and recovery procedures.
- 610 Import and export data into other applications.

Stage 1 Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

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Enduring Understandings/Big Ideas:

Databases are the primary tool for storing, managing, and analyzing information for any type of business or organization.

Businesses regularly analyze data to help them make strategic decisions.

Understanding databases and the information and data they provide is an essential workplace skill to have.

Content Standard

- 601 Design a database structure.
- 602 Create entity-relationship diagram.



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- 603 Create tables and modify fields.
- 604 Build forms to capture, manipulate and display data.
- 605 Construct and manage queries using one or more tables.
- 606 Design and arrange reports using filters.
- 607 Apply normalization to relational databases.
- 609 Implement security, back-up and recovery procedures.
- 610 Import and export data into other applications.

Transfer

Become more proficient in Microsoft Excel and prepared for the Microsoft Office Specialist Excel, Expert Excel Certification and TestOut Pro Certified: Microsoft Excel Exam and Management Information Systems Nocti Performance Exam.

Meaning

UNDERSTANDINGS

Students will understand that...

1. What one-to-many relationships you see in your everyday life.
2. How you can design a query to get information you want from your database.
3. What is the relationship between queries, relationships, and primary keys.
4. There are dangers of letting other people enter data into your tables.
5. Reports can help you make sense of your data.

Essential Questions:

1. How are relational databases already part of your everyday life?
2. What are the benefits of using a relational database as opposed to a spreadsheet?
3. What are the advantages of keeping data in multiple tables? What are the disadvantages?
4. How can you best organize the tables in your database?
5. How can you use criteria to hone the results of a query to your needs?
6. How can you use forms to reduce data entry errors?
7. Explain why or why not a report's formatting is important?



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Stage 1: Essential Content, Concepts & Skills

What do we want students to know and be able to do?

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Acquisition

Students will know.....

1. Why would you want to store certain types of data in Microsoft Access rather than in Microsoft Excel.
2. How to create a relationship between two tables.
3. More advanced Access features.

Students will be skilled at (be able to do).....

1. Plan the structure of a database.
2. Manage data in a database and create database tables.
3. Use queries, design forms and create and format reports.

Stage 2: Assessments/Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

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Evaluative Criteria	Assessment Evidence
Score on TestOut Pro Office Pro practice exams.	PERFORMANCE TASK(S)/Think: Completion of TestOut Office Pro Skills Labs. Completion of Microsoft Access It Lessons.
Score on Microsoft Office Specialist Access Certification exams.	OTHER EVIDENCE: Completion TestOut Office Pro Applied Labs. Completion of Microsoft Office Specialist Access GMetrix and LearnKey trainings and exams.



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Stage 3: Learning Plan

What are the differentiated instructional strategies, activities, lesson plans that support the enduring understandings and essential questions for all students? This section provides a summary of the Key Learning Events and Instruction.

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Resources:

- TestOut Office Pro Courseware
- Microsoft Access It projects
- GMetrix Microsoft Office Specialist trainings and exams
- LearnKey Microsoft Office Specialist trainings and exams
- Certiport Microsoft Office Specialist Certification exams
- Teacher created lessons

Day 1 (601 Design a database structure)

- Plan the structure of a database.

Day 2 (603 Create tables and modify fields)

- Manage data in a database.
- Create database tables.

Day 3 (605 Construct and manage queries using one or more tables)

- Use queries.

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Day 9 (610 Import and export data into other applications)

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- Import an Excel file to a table.

Day 10 (606 Design and arrange reports using filters)

(607 Apply normalization to relational databases)

(609 Implement security, back-up and recovery procedures)

- Explore more advanced Access features.



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Course / Unit Basic Description

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Course Title: Computer Programming

Grade Level(s): Beginner,
Intermediate and Advanced

Course Summary: (optional)

Unit Name: Programming Fundamentals,
Programming Languages, Programming
Paradigms and Processes, Web Development

Unit Number: TestOut
Office Pro Chapter 2,
TestOut IT Fundamentals
Pro Chapter 8

Time/Duration: Three Weeks

Standards Addressed: POS:

- 701 Apply working knowledge of the System Development Lifecycle (system investigation/project proposal, analysis, design, code/test, implementation and maintenance).
- 702 Differentiate programming fundamentals (e.g., system processing, integration, generations of languages, binary code, object code, source code).
- 703 Declare and manipulate various data type variables.
- 704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.).
- 705 Create working graphical user interfaces (GUI).
- 706 Create, test and debug successful computer programs.
- 707 Create clear and thorough program documentation.

Standards Addressed: CEW

- CEW 13.1: Career Awareness & Preparation
 - 13.1.A: Abilities and Aptitudes
 - 13.1.F: Preparation for Careers
- CEW 13.2: Career Acquisition (Getting a Job)
 - 13.2.C: Career Acquisition Documents
 - 13.2.D: Career Planning Portfolios
- CEW 13.3: Career Retention & Advancement
 - 13.3.A: Work Habits
 - 13.3.G: Lifelong Learning



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Stage 1 Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

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Enduring Understandings/Big Ideas:

Computers can't do anything without instructions.

Programming languages allow programmers to give the computers line-by-line instructions about what it should do.

Each programming language has a slightly different set of data types.

Variables can change the values they're holding.

Content Standard: POS

701 Apply working knowledge of the System Development Lifecycle (system investigation/project proposal, analysis, design, code/test, implementation and maintenance).

702 Differentiate programming fundamentals (e.g., system processing, integration, generations of languages, binary code, object code, source code).

703 Declare and manipulate various data type variables.

704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.).

705 Create working graphical user interfaces (GUI).

706 Create, test and debug successful computer programs.

707 Create clear and thorough program documentation.

Content Standard: CEW

CEW 13.1.11.A: Abilities and Aptitudes

CEW 13.1.11.F: Preparation for Careers

CEW 13.2.11.C: Career Acquisition Documents

CEW 13.2.11.D: Career Planning Portfolios

CEW 13.3.11.A: Work Habits

CEW 13.3.11.G: Lifelong Learning

Transfer

Students will be able to independently use their learning to apply, differentiate, declare, utilize and create programming and system knowledge.

Meaning

UNDERSTANDINGS

Students will understand that...

1. How loops help to automate repetitive tasks.
2. It is important to keep code DRY (Don't Repeat Yourself).
3. A data type is an attribute attached to a value that tells the compiler or interpreter how the data should be used.



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Essential Questions:

1. What kinds of information can be stored in a variable?
2. When does it make sense to use a compiled language?
3. When would it be better to use an interpreted language?

Stage 1: Essential Content, Concepts & Skills

What do we want students to know and be able to do?

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Acquisition

Students will know.....

1. What computer programming is and why it is useful.
2. What is the relationship between computer programming and computer hardware.
3. How HTML, CSS, and JavaScript work together to create dynamic web content.

Students will be skilled at (be able to do).....

1. How to compare and contrast different types of programming languages and paradigms.
2. Recall significant developments in the history of computer programming.
3. Write simple HTML and CSS code.

Stage 2: Assessments/Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

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Evaluative Criteria	Assessment Evidence
TestOut IT Fundamentals Pro Programming Fundamentals Quiz (summative) TestOut IT Fundamentals Pro Programming Quiz Part Two (summative) TestOut IT Fundamentals Pro Skills Labs (formative) and Section Quizzes (summative)	PERFORMANCE TASK(S)/Think: Programming Fundamentals Quiz Programming Quiz Part Two TestOut IT Fundamentals Pro Programming Chapter 8 Programming labs and quizzes



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TestOut Office Pro Skills Labs (formative) and Section Quizzes (summative)	TestOut Office Pro Chapter 2 Section 2.7 Computer Programming labs and quizzes
Khan Academy, Sololearn and CodeHS labs	OTHER EVIDENCE: https://www.khanacademy.org/ , https://codehs.com/ , https://www.sololearn.com/home programming courses (formative)

Stage 3: Learning Plan

What are the differentiated instructional strategies, activities, lesson plans that support the enduring understandings and essential questions for all students? This section provides a summary of the Key Learning Events and Instruction.

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Lesson Plans

Resources:

- TestOut Office Pro Courseware
- TestOut IT Fundamentals Pro Courseware
- Khan Academy Courses
- Sololearn Courses
- CodeHS Courses

Step 1 (701 Apply working knowledge of the System Development Lifecycle (system investigation/project proposal, analysis, design, code/test, implementation and maintenance)
 (703 Declare and manipulate various data type variables)
 (704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.))

- **Introduction to Programming and Programming Fundamentals (TestOut Office Pro and TestOut IT Fundamentals Pro)**

Step 2 (701 Apply working knowledge of the System Development Lifecycle (system investigation/project proposal, analysis, design, code/test, implementation and maintenance).
 702 Differentiate programming fundamentals (e.g., system processing, integration, generations of languages, binary code, object code, source code).

- **Programming Paradigms and Processes (TestOut Office Pro and TestOut IT Fundamentals Pro)**

Step 3 (703 Declare and manipulate various data type variables)
 (706 Create, test and debug successful computer programs)

- **Web Development (TestOut IT Fundamentals Pro)**

Step 4 (703 Declare and manipulate various data type variables)
 (706 Create, test and debug successful computer programs)

- **Web Development (Sololearn HTML and CSS Courses)**

Step 5 (703 Declare and manipulate various data type variables)
 (706 Create, test and debug successful computer programs)

- **Web Development (Sololearn HTML and CSS Courses)**

Step 6 (704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and



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logical operations, etc.))

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Intro to Programming Course (Khan Academy)**

Step 7 (704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.))

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Intro to Programming Course (Khan Academy)**

Step 8 (705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **HTML/JS Making webpages interactive (Khan Academy)**

Step 9 (703 Declare and manipulate various data type variables)

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Python for Beginners (Sololearn, CodeHS)**

Step 10 (703 Declare and manipulate various data type variables)

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Python for Beginners (Sololearn, CodeHS)**

Step 11 (704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.))

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Game Development with JavaScript (Sololearn)**

Step 12 (704 Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.))

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Game Development with JavaScript (Sololearn)**

Step 13 (703 Declare and manipulate various data type variables)

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **Ruby (Sololearn)**

Step 14 (703 Declare and manipulate various data type variables)

(705 Create working graphical user interfaces (GUI))

(706 Create, test and debug successful computer programs)

(707 Create clear and thorough program documentation)

- **C++ (Sololearn)**

Step 15 (703 Declare and manipulate various data type variables)



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(705 Create working graphical user interfaces (GUI))
 (706 Create, test and debug successful computer programs)
 (707 Create clear and thorough program documentation)

- **C# (Sololearn)**

Course / Unit Basic Description

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Course Title: Computer Hardware/System Software

Grade Level(s): Beginner, Intermediate and Advanced

Course Summary: (optional)

Unit Name: Hardware Troubleshooting/Computer Hardware, System Software, More System Software

Unit Number: TestOut Office Pro Chapter 2 Sections 2.1-2.5, TestOut IT Fundamentals Chapter 3

Time/Duration: Two Weeks

Standards Addressed: POS

901 Apply the troubleshooting theory.
 902 Analyze and correct common hardware problems and performance issues.
 903 Analyze and correct common software problems and performance issues.
 904 Integrate common preventative maintenance techniques.
 905 Analyze and correct basic network problems and performance issues.

Standards Addressed: CEW

CEW 13.1: Career Awareness & Preparation

- 13.1.A: Abilities and Aptitudes
- 13.1.F: Preparation for Careers

CEW 13.2: Career Acquisition (Getting a Job)

- 13.2.C: Career Acquisition Documents
- 13.2.D: Career Planning Portfolios
- 13.2.E Application of Essential Workplace Skills/Knowledge

CEW 13.3: Career Retention & Advancement

- 13.3.A: Work Habits
- 13.3.G: Lifelong Learning



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Stage 1 Desired Results: Enduring Understandings & Essential Questions

What are the overarching takeaways and big ideas for students?

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Enduring Understandings/Big Ideas:

Many different components must be configured to work together for a computer to function.
Computer hardware includes all of the physical components of the system that you can see and touch.
Computers can share data with each other over a network.
Computer software consists of all of the programs running on the system to perform specific computing tasks.
Reproducing the problem is often the hardest part of troubleshooting.

Content Standard

- 901 Apply the troubleshooting theory.
- 902 Analyze and correct common hardware problems and performance issues.
- 903 Analyze and correct common software problems and performance issues.
- 904 Integrate common preventative maintenance techniques.
- 905 Analyze and correct basic network problems and performance issues.

Content Standard: CEW

- CEW 13.1.11.A: Abilities and Aptitudes
- CEW 13.1.11.F: Preparation for Careers
- CEW 13.2.11.C: Career Acquisition Documents
- CEW 13.2.11.D: Career Planning Portfolios
- CEW 13.2.E: Application of Essential Workplace Skills/Knowledge
- CEW 13.3.11.A: Work Habits
- CEW 13.3.11.G: Lifelong Learning

Transfer

Students will be able to independently use their learning to apply, analyze and integrate computer maintenance and troubleshooting.

Meaning

UNDERSTANDINGS

Students will understand that...

1. You should troubleshoot a problem before implementing a potential solution.
2. Physical damage is one of the top causes of motherboard failure.
3. There are proper sequences of steps to identify and follow in the troubleshooting methodology.

Essential Questions:

1. What is the most effective way to troubleshoot a problem?
2. What is the top cause of motherboard failure?
3. What would the most likely cause be if a computer has power, but there are no beeps and the



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computer does not boot?

Stage 1: Essential Content, Concepts & Skills

What do we want students to know and be able to do?

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Acquisition

Students will know.....

1. How to identify common peripheral devices by sight.
2. How to identify common ports and connectors by sight.
3. How to Identify common Operating Systems.

Students will be skilled at (be able to do).....

1. Identify and state the purpose of common hardware components.
2. How to connect cables and peripherals to a computer system.
3. Identify and describe different types of system software.

Stage 2: Assessments/Evidence of Learning

What are the formative (informal) and summative (formal) assessments used to measure learning and growth? How will you know that they did it?

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Evaluative Criteria	Assessment Evidence
TestOut Computer Hardware Quiz (summative) TestOut Computer Hardware and System Software Quiz (summative) Completion of TestOut IT Fundamentals Pro Certified Skills Labs (formative) and quizzes (summative) Completion of TestOut Office Pro Skills Labs (formative) and quizzes (summative)	PERFORMANCE TASK(S)/Think: Computer Hardware Quiz Computer Hardware and System Software Quiz TestOut IT Fundamentals Pro Chapter Three Computer Hardware labs and quizzes TestOut IT Office Pro Chapter Two Sections 2.1 - 2.5 Computer Essentials labs and quizzes



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Completion of GMetrix and LearnKey IC3 Computing Fundamentals training (formative) and practice exams (summative)

OTHER EVIDENCE:

Gmetrix.net IC3 Computing Fundamentals training and practice exams

Stage 3: Learning Plan

What are the differentiated instructional strategies, activities, lesson plans that support the enduring understandings and essential questions for all students? This section provides a summary of the Key Learning Events and Instruction.

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Resources:

- TestOut Office Pro and IT Fundamentals Courseware
- Teacher created lessons
- GMetrix and LearnKey IC3 Computing Fundamentals Training Courseware
- Teacher created lessons

Step 1 (901 Apply the troubleshooting theory)

(902 Analyze and correct common hardware problems and performance issues)
(904 Integrate common preventative maintenance techniques)

- **Computer Hardware (TestOut Office Pro)**

Step 2 (901 Apply the troubleshooting theory)

(902 Analyze and correct common hardware problems and performance issues)
(904 Integrate common preventative maintenance techniques)

- **Computer Hardware (TestOut IT Fundamentals Pro)**

Step 3 (901 Apply the troubleshooting theory)

(902 Analyze and correct common hardware problems and performance issues)
(904 Integrate common preventative maintenance techniques)

- **Computer Hardware (TestOut IT Fundamentals Pro, GMetrix and LearnKey IC3 Computing Fundamentals Courseware)**

Step 4 (903 Analyze and correct common software problems and performance issues)

- **System Software (TestOut Office Pro)**

Step 5 (903 Analyze and correct common software problems and performance issues)

- **Computer Software (TestOut IT Fundamentals Pro)**

Step 6 (903 Analyze and correct common software problems and performance issues)

- **Computer Software (TestOut IT Fundamentals Pro)**

Step 7 (903 Analyze and correct common software problems and performance issues)

- **Application Software (TestOut Office Pro)**

Step 8 (905 Analyze and correct basic network problems and performance issues)

- **Networking and User Accounts (TestOut Office Pro)**

Step 9 (905 Analyze and correct basic network problems and performance issues)

- **Internet Technologies (TestOut IT Fundamentals Pro, GMetrix and LearnKey IC3 Computing Fundamentals Courseware)**

Step 10 (905 Analyze and correct basic network problems and performance issues)

- **Networking (TestOut IT Fundamentals Pro)**