

# **ADVANCED SPREADSHEET/DATABASE**

## Curriculum Content Frameworks

**Please note: All assessment questions will be taken from the knowledge portion of these frameworks.**

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# Curriculum Content Frameworks

## ADVANCED SPREADSHEET/DATABASE

Grade Levels: 10, 11, 12  
Course Code: 492530

Prerequisite: Computer Applications III

Course Description: Advanced Spreadsheet/Database is a one-semester course giving students advanced experience in developing and analyzing spreadsheets, graphs, templates, charts, database tables, forms, reports, subreports with advanced queries, macros, and more. Students will complete at least one project using each program.

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# Unit 1: Spreadsheet – Lists, Filters, and AutoFilters

## Hours: 3

Terminology: <, >, AND operator, AutoFilter, Criteria, Custom filter, Filter, List, Operators, OR operator, Sort ascending, Sort descending, Wildcard

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
1.1 Define terminology	1.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]	
1.2 Describe sorting lists	1.2.1 Sort a list  1.2.2 Search a list by criteria	Foundation	Reading	Comprehends written information, and applies it to a task [1.3.8]	
1.3 Describe filtering lists	1.3.1 Search a list by using AutoFilter  1.3.2 Search a list using custom filters and operators  1.3.3 Create filters using OR and AND  1.3.4 Create filters using wildcards	Foundation	Reading	Comprehends written information, and applies it to a task [1.3.8]	

## Unit 2: Spreadsheet – Macros and Templates

### Hours: 9

Terminology: Lock, Macro, Password, Protect, Template

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
2.1 Define terminology	2.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]
2.2 Explain macros	2.2.1 Record a new macro 2.2.2 Edit a macro 2.2.3 Run a macro	Thinking	Knowing how to Learn	Applies new knowledge and skills to macros [4.3.1]
2.3 Explain a worksheet template	2.3.1 Create a template 2.3.2 Save a worksheet as a template 2.3.3 Demonstrate how to lock a cell 2.3.4 Demonstrate how to protect a worksheet with a password 2.3.5 Demonstrate how to protect a workbook with a password	Foundation	Reading	Comprehends written information, and applies it to a task [1.3.8]

## Unit 3: Spreadsheets – Advanced Features

### Hours: 15

**Terminology:** Auditing, Circular reference, Consolidate data (3-D reference), Data validation, Goal-seek (what-if analysis), Grouping, HLOOKUP, Pivot table, Scenario, Trace dependents, Trace precedents, Troubleshoot, VLOOKUP

<b>CAREER and TECHNICAL SKILLS</b>		<b>ACADEMIC and WORKPLACE SKILLS</b>			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
3.1 Define terminology	3.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]	
3.2 Explain auditing tools	3.2.1 Differentiate between trace precedents and trace dependents	Thinking	Problem Solving	Comprehends ideas and concepts related to auditing [4.4.1]	
3.3 Examine data validation	3.3.1 Apply data validation in a worksheet	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]	
3.4 Identify uses of scenarios and goal seek (what-if analysis)	3.4.1 Apply a scenario to a worksheet	Thinking	Knowing how to Learn	Applies new knowledge and skills to databases [4.3.1]	
	3.4.2 Use goal seek (what-if analysis) in a worksheet				
3.5 Identify uses for multiple worksheets	3.5.1 Copy and move data between worksheets	Foundation	Reading	Comprehends written information, and applies it to a task [1.3.8]	
	3.5.2 Consolidate data (3-D reference) from several worksheets				
	3.5.3 Print multiple worksheets using grouping				
3.6 Describe use of a pivot table	3.6.1 Create a pivot table	Foundation	Reading	Analyzes and applies what has been read to a specific task [1.3.2]	
3.7 Differentiate between VLOOKUP and HLOOKUP	3.7.1 Create formulas	Foundation	Reading	Comprehends written information, and applies it to a task [1.3.8]	

## Unit 4: Database – Table Design and Relationships

### Hours: 6

**Terminology:** Field properties, Input mask, Lookup fields, Many-to-many relationship, One-to-many relationship, One-to-one relationship, Referential integrity, Relationship, Required fields, Validation rule, Validation text

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
4.1 Define terminology	4.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]
4.2 Identify a database table	4.2.1 Apply the default values, input masks, validation rules, validation text, required fields, and lookup fields to field properties in a table in design view	Thinking	Knowing how to Learn	Applies new knowledge and skills to the field properties of a database table [4.3.1]
4.3 Identify relationships (joins)	4.3.1 Create a relationship (join)  4.3.2 Understand the difference between a one-to-one, one-to-many, and many-to-many relationship  4.3.3 Enforce referential integrity	Thinking	Decision Making	Comprehends ideas and concepts related to the table relationships [4.2.2]

## Unit 5: Database – Advanced Form, Query, Filter, and Report Features

### Hours: 12

Terminology: Advanced query filter, Calculated control, Control bound, Delete query, Make-table query, Parameter query, Report grouping, Subform, Subreport, Unbound control, Update query

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
5.1 Define terminology	5.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]	
5.2 Identify a database subform	5.2.1 Create a subform 5.2.2 Modify a subform in design view	Thinking	Knowing how to Learn	Applies new knowledge and skills to subforms [4.3.1]	
5.3 Describe the use of queries	5.3.1 Create queries using various criteria and operators 5.3.2 Use AND and OR with queries	Thinking	Decision Making	Comprehends ideas and concepts related to queries [4.2.2]	
5.4 Describe the use of advanced queries	5.4.1 Create a parameter query	Thinking	Knowing how to Learn	Applies new knowledge and skills to queries [4.3.1]	
5.5 Describe the use of advanced queries	5.5.1 Create an update query 5.5.2 Create a make-table query 5.5.3 Create a delete query	Thinking	Problem Solving	Comprehends ideas and concepts related to action queries [4.4.1]	
5.6 Describe the use of advanced filters in queries	5.6.1 Apply filters to queries	Thinking	Creative Thinking	Creates new design by applying specified criteria [4.1.3]	
5.7 Identify a database report	5.7.1 Add controls to a report 5.7.2 Add a subreport 5.7.3 Perform grouping and sorting to a report	Thinking	Reasoning	Comprehends ideas and concepts related to database reports [4.5.2]	

## Unit 6: Database – Macros and Switchboards

### Hours: 6

Terminology: Macro, Switchboard

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>
6.1 Define terminology	6.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]
6.2 Explain the purpose of a macro	6.2.1 Create a macro	Thinking	Knowing how to Learn	Applies new knowledge and skills to database macros [4.3.1]
6.3 Explain the purpose of a switchboard	6.3.1 Create a switchboard	Thinking	Knowing how to Learn	Applies new knowledge and skills to database switchboards [4.3.1]

## Unit 7: Integration

### Hours: 12

Terminology: Export, Import, Integrated software

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce			
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>	
7.1 Define terminology	7.1.1 Prepare a list of terms with definitions	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]  Applies/Understands technical words that pertain to spreadsheets [1.3.6]	
7.2 Demonstrate how to integrate a spreadsheet with other applications	7.2.1 Import data into a spreadsheet	Thinking	Reasoning	Comprehends ideas and concepts related to importing and exporting data [4.5.2]	
	7.2.2 Export data from a spreadsheet				
7.3 Demonstrate how to integrate a database with other applications	7.3.1 Import data into a database	Thinking	Reasoning	Comprehends ideas and concepts related to importing and exporting data [4.5.2]	
	7.3.2 Export data from a database				

## Glossary

### Unit 1: Spreadsheet – Lists, Filters, and AutoFilters

1. < – less than
2. > – greater than
3. AND operator – used to find records that meet more than one criterion
4. AutoFilter – displays a subset of the data in a worksheet that meet certain criteria
5. Criteria – information for which you are searching
6. Custom filter – a filter that allows you to indicate specific criteria for which you want to search
7. Filter – displays only the rows that meet specific criteria in a spreadsheet
8. List – a table of information with a row of headers (titles) followed by rows of data
9. Operators – specify what to do in a formula
10. OR operator – used to find data that meet one criterion or another
11. Sort ascending – sorting from A-Z order or lowest value to highest value
12. Sort descending – sorting from Z-A order or highest value to lowest value
13. Wildcard – a character that represents one or more numbers or letters

## Unit 2: Spreadsheet – Macros and Templates

1. Lock – a cell that cannot be changed when a worksheet is protected
2. Macro – a way to record some common, repetitive tasks you perform
3. Password – a word that needs to be entered before access to a file or server is allowed
4. Protect – to use passwords and other settings to control who can open and modify a document
5. Template – file that contains formatting information, styles, and text for a particular type of document

## Unit 3: Spreadsheets – Advanced Features

1. Auditing – the practice of examining worksheet cells and formulas for accuracy
2. Circular reference – a cell address in a formula that refers to the formula's location
3. Consolidate data (3-D reference) – cell address in a formula that refers to cells in another worksheet
4. Data validation – to indicate that something is acceptable or approved after having checked it first
5. Goal-seek (what-if analysis) – allows you to adjust a value in a formula to reach a desired result or answer
6. Grouping – to place information together so it can be treated as a single item
7. HLOOKUP – a function that scans a table's row to find data that match a comparison value
8. Pivot table – an interactive table that lets you view and calculate data from a spreadsheet or database
9. Scenario – a tool used to create several versions of a worksheet, based on changing variables
10. Trace dependents – a cell that relies on another cell for its value
11. Trace precedents – a cell that contributes or provides data to a formula's results
12. Troubleshoot – examining possible solutions for errors in a worksheet
13. VLOOKUP – a function that scans a table's columns to find data that match a comparison value

## Unit 4: Database – Table Design and Relationships

1. Field properties – settings made to fields in design view that control the data being entered
2. Input mask – field property that displays a pattern for entering data
3. Lookup fields – used to locate data in a table based on a known value
4. Many-to-many relationship – correlation between tables in which a table links two other tables that do not share a common field
5. One-to-many relationship – correlation that occurs when the common field is a primary key in the first table and not a primary key in the second table
6. One-to-one relationship – correlation between tables in which the primary key in the main or primary table matches the primary
7. Referential integrity – database rules for checking and validating data entry; keeps track of changes in related tables
8. Relationship – link or connection between two tables sharing a common field
9. Required fields – specify whether you must enter a value in the field
10. Validation rule – a process that enables you to maintain the accuracy of a database by specifying acceptable entries for a particular field
11. Validation text – onscreen message displayed when a validation rule is violated

## Unit 5: Database – Advanced Form, Query, Filter, and Report Features

1. Advanced query filter – temporarily displays records that meet specific criteria
2. Calculated control – a control on a database form or report that uses a calculation to generate the data for a field
3. Control bound – a control that is linked to a field in a record
4. Delete query – an action query that removes data from a table
5. Make-table query – an action query that creates a new table from the data of an existing table
6. Parameter query – a query that stops and prompts the user to enter criteria each time the query is run
7. Report grouping – organizing records into parts or groups based on the contents of the field to display in a report
8. Subform – a form that is placed in a main form
9. Subreport – a report that is inserted into another report
10. Unbound control – a control on a database form or report that is not connected to a field in a table
11. Update query – an action query that edits the data in a field by searching for a criterion and replacing it with another criterion

## Unit 6: Database – Macros and Switchboards

1. Macro – a database object used to run routine tasks with a series of commands
2. Switchboard – a master form that opens instead of the database window

## Unit 7: Integration

1. Export – placing data from one program into another
2. Import – bringing data from one program into another
3. Integrated software – software that combines several applications in one program