

OBERLIN HIGH SCHOOL
BUSINESS EDUCATION DEPARTMENT

Information Technology
Grade 11 Term 1 Course Outline

◆ **SECTION 5: SPREADSHEETS**

GENERAL OBJECTIVE

On completion of this Section, students should develop expertise in the use of a spreadsheet package in the development of computer applications.

SPECIFIC OBJECTIVES

CONTENT

Students should be able to:

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| 3. | <i>use basic pre-defined systems functions;</i> | Including sum, average, date, max, min, count, counta, countif, vlookup, pmt, if. |
| 4. | <i>create advanced arithmetic formulae;</i> | Formulae including addition, subtraction, multiplication, division, and use of brackets. |
| 5. | <i>replicate (copy) formulae into other cells;</i> | Relative addressing, absolute addressing, <i>naming of ranges</i> .

Effect of move, copy, delete operations on formulae. |
| 6. | <i>manipulate columns and rows;</i> | <i>Insert, delete and modify columns and rows.</i> |
| 7. | <i>manipulate data in a spreadsheet;</i> | <i>Numeric Data formatting (currency, accounting, percentage, comma, decimal places).</i>

<i>Sorting data (primary field, secondary field, ascending vs descending order).</i>

<i>Filtering data (multiple criteria, complex criterion).</i>

<i>Pivot Table (create one and two dimensional pivot tables, create frequency distribution from data and create pivot chart)</i> |
| 8. | <i>perform charting operations; and,</i> | Select appropriate chart types: Column charts, Bar charts, line graphs, pie charts.

Labelling charts: graph titles, labels on axes, <i>data labels</i> . |
| 9. | <i>Manipulate one or more worksheets.</i> | Use of <i>one or more</i> worksheets to solve problems involving some of <i>or</i> all of the functions and operations listed above.

Linking of two or more worksheets to solve problems. |

◆ SECTION 6: DATABASE MANAGEMENT

GENERAL OBJECTIVES

On completion of this Section, students should develop expertise in the design of a database management system in the development of computer applications.

SPECIFIC OBJECTIVES

Students should be able to:

1. *explain the concept of a database;*

Definition of database:

(a) *repository of information; and,*

(b) *collection of tables that are related to each other.*

Purpose of database.

2. *use terminology commonly associated with a database;*

Database terminology: table, row (record), column (field), primary key, secondary key, candidate key, foreign key.

Data types: *numeric; text; logical; date /time; currency.*

3. *create a database; and,*

Table structure with at least three data types and populated with at least 25 records.

Modify a table structure: adding new fields, deleting fields, changing field definitions.

Establish primary keys.

Establish relationships: show the joins between tables (one-to-one and one-to-many).

4. *manipulate data in a database.*

(a) *Forms:*

- (i) *Use of form wizard only;*
- (ii) *select suitable fields; and,*
- (iii) *use of sub-form.*

(b) *Queries:*

- (i) *more than one criterion;*
- (ii) *use of select;*
- (iii) *use of calculated field; and,*
- (iv) *two or more fields involving the use of relational and logical operators.*

(c) *Reports:*

- (i) *use of report wizard;*
- (ii) *use of sorting, grouping, statistical and summary features, for example, count, sum, and average;*
- (iii) *report generated to screen, printer and file; and,*
- (iv) *renaming of report title.*

WEB PAGE DESIGN

This section provides students with hands-on experience in the use of web design *tools* to create a *simple website*.

Students should be able to:

9. plan a website structure and organization of page;

(The use of HTML coding is not required.)
 - Reasons for the website.
 - The intended audience.
 - Number of web pages desired (*no more than 3 pages*).
 - Content of each page.
 - Layout of the web page.
10. create simple web pages using a variety of design features;

(The use of HTML coding is not required.)
 - Choosing an appropriate design for a page.
 - Inserting and deleting text and graphics.
 - Wrap text with image.
 - Create home page with hyperlinks.
11. insert hyperlinks within different locations of a typical web page; and,
 - Link to another web page.
 - Link to a location within the web page.
 - Link to an email address.
 - Link to user-created files.
12. evaluate a website for accuracy, user friendliness and effective display.
 - Considerations for publishing a website:
 - Verify that all the hyperlinks work correctly.
 - Use a test audience.
 - Verify that all content is up-to-date.

SECTION 7: PROBLEM-SOLVING AND PROGRAM DESIGN

SPECIFIC OBJECTIVES

CONTENT

Students should be able to:

- branching (if-then, if-then-else, nested conditions); loops (for, while, repeat).*
- Use of relational operators: $<$, $>$, $=$, $<=$, $>=$, $<>$.
- Logical operators: AND, OR, NOT; *use of truth tables.*
- Arithmetic operators: $+$, $-$, $*$, $/$, MOD, DIV.
7. test algorithms for correctness. *Desk checks/dry run: construction and use of trace tables to verify results. Trace tables consist of variable names (identifiers) as column headings and values in the cells, one row for each pass.*