Butler Community College
Career and Technical Education Division

Margaret Pickering
Revised Spring 2009
Implemented Summer 2009
Textbook Update Fall 2011

COURSE OUTLINE
Advanced Computer Applications

Course Description
BA 245. Advanced Computer Applications. 3 hours credit. Prerequisite: BE 165, BE 170, and BE 180 or BA 104 all with a C or better or consent of instructor. This course will enable the student to use advanced applications in word processing, spreadsheet, and database programs.

Course Relevance
The applications learned in this course will allow the student to effectively utilize current application software systems. The applications and principles learned in this course are relevant to any career field.

Required Materials
Rutkosky, N. & Rutkosky R. A., *Level 2 Microsoft Word 2010* (text + CD edition).
St. Paul, MN: Paradigm Publishing, Inc.

Rutkosky, N. & Rutkosky R. A., *Level 2 Microsoft Excel 2010* (text + CD edition).
St. Paul, MN: Paradigm Publishing, Inc.

Rutkosky, N. & Rutkosky R. A., *Level 2 Microsoft Access 2010* (text + CD edition).
St. Paul, MN: Paradigm Publishing, Inc.

Supplemental Materials
Software: Microsoft Office 2010 Professional or Ultimate version

* - For complete textbook information, refer to http://www.butlercc.bkstr.com

Learning Outcomes
The intention is for the student to be able to:
1. Utilize word processing, spreadsheet, and database application features to complete tasks

Learning PACT Skills that will be DEVELOPED and/or documented in this course
Through involvement in this course, the student will develop ability in the following PACT skill area(s):

Analytical Thinking Skills
1. Problem solving

- By applying skills learned in lessons, the student will use software applications to solve problems.

Communication Skills

1. Reception and interpretation of messages
   - By reading and deciphering skill-based tasks, the student will then execute the task.

Technology Skills

1. General computer use
   - Through a variety of activities, the student will utilize current Microsoft Office software to create, store, retrieve, and modify files to produce and disseminate documents, spreadsheets, database management objects, and presentation graphics.

Major Summative Assessment Task(s)

These learning outcome(s) and the Learning PACT skill(s) will be demonstrated by

1. Completing computer (T skill) generated tasks (C skill) using an assessment program that integrates software programs to demonstrate the student's ability to solve problems (A skill) by using software applications in a proficient manner.

Course Content

I. Skills or Competencies – Actions that are essential to achieve the course outcomes:
   A. Creating and customizing documents in Microsoft Word 2010
      1. Create and format documents
      2. Lay out documents
      3. Make documents and content easier to find
      4. Personalize Office Word 2010
   B. Organizing content in Microsoft Word 2010
      1. Structure content by using Quick Parts
      2. Use tables and lists to organize content
      3. Insert and format references and captions
   C. Reviewing documents in Microsoft Word 2010
      1. Compare and merge document versions
      2. Manage track changes
      3. Insert, modify, and delete comments
   D. Formatting data and content in Microsoft Excel 2010
      1. Format cells and cell content
      2. Format data as a table
   E. Creating and modifying formulas in Microsoft Excel 2010
      1. Reference data in formulas
      2. Summarize data using a formula
      3. Summarize data using subtotals
      4. Conditionally summarize data using a formula
      5. Look up data using a formula
      6. Use conditional logic in a formula
      7. Format or modify text using formulas
   F. Presenting data visually in Microsoft Excel 2010

1. Apply conditional formatting
2. Outline data
3. Sort and filter data

G. Creating and Manipulating Data in Microsoft Excel 2010
   1. Modify cell contents and formats
   2. Change worksheet views

H. Structuring a Database in Microsoft Access 2010
   1. Define data needs and types
   2. Define and print table relationships
   3. Add, set, change, or remove primary keys

I. Creating and Formatting Database Elements in Microsoft Access 2010
   1. Modify tables
   2. Create fields and modify field properties
   3. Create forms
   4. Modify the design of reports and forms

J. Entering and modifying data in Microsoft Access 2010
   1. Find and replace data
   2. Attach documents to and detach from records

K. Creating and modifying queries in Microsoft Access 2010

L. Presenting and sharing data in Microsoft Access 2010
   1. Sort data
   2. Filter data

M. Creating and modifying reports in Microsoft Access 2010

N. Presenting and sharing data in Microsoft Access 2010
   1. Sort data within reports
   2. Create and modify charts

II. Themes – Key occurring concepts that run throughout this course:
   A. Proper use of software features
   B. Technological Tools and Skills

III. Issues – Key areas of conflict that must be understood in order to achieve the intended outcome:
   A. Reading comprehension
   B. Following instructions
   C. Completing tasks to the degree of approval

IV. Concepts – Key concepts that must be understood to address the issues:
   A. Task completion
   B. Time management
   C. Keyboarding skills

Learning Units

Microsoft Word 2010

I. Customizing paragraphs and pages
   A. Apply custom numbering and bulleting formatting to text
   B. Define new bullets
   C. Insert headers and footers in documents
   D. Remove, edit, and format headers and footers

E. Control widow/orphans and keep text together on a page
F. Insert, format, and remove page numbers
G. Print sections
H. Insert and format charts

II. Automating and customizing formatting
A. Add words to and delete words from the AutoCorrect dialog box
B. Use the AutoCorrect options button
C. Sort and insert building blocks
D. Create, edit, modify, and delete building blocks
E. Insert and update fields from Quick Parts
F. Customize the Quick Access toolbar

III. Customizing and navigating in a document
A. Create custom theme colors, theme fonts, and theme effects
B. Save a custom theme
C. Apply, edit, and delete custom themes
D. Reset to the template theme
E. Change the Quick Styles set default
F. Apply styles
G. Create new styles and create styles from existing formatting, from existing styles, and by modifying styles
H. Save and delete a custom Quick Styles set
I. Navigate in a document using Document Map, thumbnails, bookmarks, hyperlinks, and cross-references
J. Insert hyperlinks to a location in the same document, a different document, a file in another program, or a site on the Internet

IV. Inserting special features and references
A. Sort text in paragraphs, columns, and tables
B. Sort records in a data source file
C. Select specific records in a data source file for merging
D. Insert non-breaking spaces
E. Find and replace special characters
F. Create and use a specialized template
G. Create footnotes and endnotes
H. Insert and modify sources and citations
I. Insert, modify, and format bibliographies

V. Creating specialized tables and indexes
A. Create, insert, and update a table of contents
B. Create, insert, and update an index
C. Create, insert, and update a table of figures
D. Create, insert, and update a table of authorities

VI. Working with shared documents

A. Insert, edit, and delete comments
B. Track changes to a document and customize tracking
C. Compare documents
D. Combine documents

Microsoft Excel 2010

I. Advanced formatting techniques
   A. Apply conditional formatting by entering parameters for a rule
   B. Apply conditional formatting using a predefined rule
   C. Create and apply a new rule for conditional formatting
   D. Edit and delete a conditional formatting rule
   E. Apply conditional formatting using an icon set, data bars, and color scale
   F. Apply fraction and scientific formatting
   G. Apply a special format for a number
   H. Create a custom number format
   I. Apply wrap text and shrink to fit text control options
   J. Filter a worksheet using a custom AutoFilter
   K. Filter and sort a worksheet using conditional formatting
   L. Filter and sort a worksheet using cell attributes

II. Advanced functions and formulas
   A. Use named ranges in formulas
   B. Use functions COUNTA, COUNTIF, COUNTIFS
   C. Use functions AVERAGEIF, AVERAGEIFS
   D. Use functions SUMIF, SUMIFS
   E. Delete a range name
   F. Look up data using the lookup functions VLOOKUP and HLOOKUP
   G. Analyze financial data using PPMT, PV, and NPV
   H. Use conditional logic functions IF, AND, OR, NOT and IFERROR
   I. Modify text using the text functions PROPER, UPPER, LOWER, and SUBSTITUTE

III. Working with tables and data features
   A. Create a table in a worksheet
   B. Expand a table to include new rows and columns
   C. Add a calculated column in a table
   D. Format a table by applying table styles and table style options
   E. Add a total row to a table and add formulas to total cells
   F. Sort and filter a table
   G. Split contents of a cell into separate columns
   H. Remove duplicate records
   I. Restrict data entry by creating validation criteria
   J. Convert a table to a normal range
   K. Create subtotals in groups of related data
   L. Ungroup data

M. Summarize data using database functions DSUM and DAVERAGE
N. Summarize data using the SUBTOTAL function formula

IV. Summarizing and consolidating data
A. Summarize data by creating formulas with range names that reference other worksheets
B. Modify the range assigned to a range name
C. Summarize data by creating 3-D formulas
D. Create formulas that link to cells in other workbooks
E. Edit a link to a source workbook
F. Break a link to an external reference
G. Use the Consolidate feature to summarize data in multiple worksheets
H. Create, edit, and format a PivotTable
I. Create and format a PivotChart
J. Format the x-, y-, or z-axis in a chart
K. Modify or remove chart gridlines
L. Add a trendline to a chart to forecast future values
M. Modify trendline options

V. Using data analysis features
A. Switch data arranged in columns to rows and vice versa
B. Perform a mathematical operation during a paste routine
C. Copy and paste comments
D. Populate a cell using Goal Seek
E. Save and display various worksheet models using Scenario Manager
F. Create a scenario summary report
G. Create a one-variable data table to analyze various outcomes
H. Create a two-variable data table to analyze various outcomes
I. View relationships between cells in formulas
J. Identify Excel error codes and troubleshoot a formula using formula auditing tools
K. Circle invalid data
L. Use the Watch Window to track a value

Microsoft Access 2010
I. Designing the structure of tables
A. Design the structure of tables to optimize efficiency and accuracy of data
B. Select the appropriate field data type based on analysis of source data
C. Add captions to fields for descriptive purposes
D. Disallow blank field values
E. Allow or disallow zero-length strings in a field
F. Create a custom format for text, number, and date fields
G. Create a custom input mask
H. Define rich text formatting for a memo field
I. Define and use an attachment field with multiple attachments

II. Designing and building relationships and lookup fields
   A. Design relationships between tables including one-to-many, one-to-one, and many-to-many relationships
   B. Edit relationship options, including specifying the join type
   C. Define a table with a multiple-field primary key
   D. Create a lookup field to populate records with data from another table
   E. Modify a lookup field's properties
   F. Create a field that allows multiple values
   G. Create single-field and multiple-field indexes
   H. Define what is meant by normalization
   I. Determine if a table is in first, second, and third normal form

III. Advanced query techniques
   A. Save a filter as a query
   B. Create and run a parameter query to prompt for criteria
   C. Add and remove tables to and from a query
   D. Create an inner join, left join, and right join to modify query results
   E. Create a self-join to match two fields in the same table
   F. Create a query that includes a subquery
   G. Assign an alias to a table and a field name
   H. Select records using a multivalued field in a query
   I. Create a new table using a make-table query
   J. Remove records from a table using a delete query
   K. Add records to the end of an existing table using an append query
   L. Modify records using an update query

IV. Creating and using custom forms
   A. Create a custom form in Design view using all three form sections
   B. Add fields individually and as a group
   C. Move, size, and format control objects
   D. Change the tab order of fields
   E. Create tabbed pages in a form and inset a subform on each page
   F. Add and format a calculation to a custom form
   G. Group and ungroup multiple controls
   H. Adjust the alignment and spacing of controls
   I. Add graphics to a form
   J. Anchor a control to a position in the form
   K. Create a datasheet form
   L. Modify form properties to restrict actions allowed in records
   M. Sort records in a form and locate a record using a wildcard character

V. Creating and using custom reports
   A. Create a custom report in Design view using all five report sections
   B. Add bound and unbound control objects to a report

C. Move, size, format, and align control objects
D. Apply an AutoFormat to a report
E. Insert a subreport into a report
F. Add page numbering, date and time controls
G. Add graphics to a report
H. Group records and add aggregate functions and grand totals to a group
I. Modify section or group properties to control print options
J. Create and modify charts in a report

Learning Activities
Learning activities will be assigned to assist the student to achieve the intended learning outcome(s) through instructor-led demonstration and class discussion, drills/skill practice and other activities at the discretion of the instructor.

Grade Determination
The student will be graded on learning activities and assessment tasks. Grade determinants may include the following: daily work, quizzes, chapter or unit tests, comprehensive examinations, projects, presentations, class participation, and other methods of evaluation employed at the discretion of the instructor.